

Social Problem-Solving in High-Risk Mother-Child Dyads: An Intergenerational Study

Julie Martin

A Thesis

in

The Department

of

Psychology

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

August 2007

© Julie Martin, 2007



Library and
Archives Canada

Bibliothèque et
Archives Canada

Published Heritage
Branch

Direction du
Patrimoine de l'édition

395 Wellington Street
Ottawa ON K1A 0N4
Canada

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file *Votre référence*
ISBN: 978-0-494-34756-0
Our file *Notre référence*
ISBN: 978-0-494-34756-0

NOTICE:

The author has granted a non-exclusive license allowing Library and Archives Canada to reproduce, publish, archive, preserve, conserve, communicate to the public by telecommunication or on the Internet, loan, distribute and sell theses worldwide, for commercial or non-commercial purposes, in microform, paper, electronic and/or any other formats.

The author retains copyright ownership and moral rights in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

AVIS:

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque et Archives Canada de reproduire, publier, archiver, sauvegarder, conserver, transmettre au public par télécommunication ou par l'Internet, prêter, distribuer et vendre des thèses partout dans le monde, à des fins commerciales ou autres, sur support microforme, papier, électronique et/ou autres formats.

L'auteur conserve la propriété du droit d'auteur et des droits moraux qui protègent cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

In compliance with the Canadian Privacy Act some supporting forms may have been removed from this thesis.

Conformément à la loi canadienne sur la protection de la vie privée, quelques formulaires secondaires ont été enlevés de cette thèse.

While these forms may be included in the document page count, their removal does not represent any loss of content from the thesis.

Bien que ces formulaires aient inclus dans la pagination, il n'y aura aucun contenu manquant.


Canada

ABSTRACT

Social Problem-Solving in High-Risk Mother-Child Dyads: An Intergenerational Study

Julie Martin

A key component of socio-emotional and cognitive development is the capacity to effectively resolve day-to-day social problems. Parents play a vital role in fostering children's problem-solving skills. The present study examined the contribution of maternal childhood histories of aggression and social withdrawal to the prediction of mother-child problem definition, solution generation and decision-making strategies.

Mothers from a longitudinal study of children from disadvantaged neighbourhoods participated with their 9- to 12-year-old children. Mothers were screened during childhood along measures of aggression and withdrawal. Dyads (57) were videotaped in their homes discussing conflicts which they rated as especially problematic in their relationship. Problem defining statements, solutions, and resolution strategies were coded using the Mother-Child Social Problem-Solving Coding Scheme.

Results supported the hypotheses that maternal childhood histories of aggression and withdrawal contribute to the prediction of poorly sophisticated solutions generated by both mothers and children, as well as antisocial solutions generated by children. Results also demonstrated that maternal childhood histories of withdrawal contribute to the prediction of solitary solutions generated by children as well as less guidance and structure during the decision-making stage. Taken together, the results lend support to the continuity of risk whereby mothers who were socially withdrawn, and those who were both aggressive and withdrawn in childhood, display less sophisticated problem-solving strategies which appear to be mirrored in their children. The results broaden current

understanding of mother-child problem-solving abilities in a high-risk, intergenerational sample of children in middle childhood, and highlight a potential pathway to the direct transmission of risk.

ACKNOWLEDGMENTS

Firstly, I would like to thank all the mothers and their children who participated in this study. Without them, none of this would have been possible. I am especially indebted to my research supervisor, Dr. Dale Stack, who has been more than my mentor over these last 4 years; her teaching, guidance, enthusiasm and never-ending faith enabled me to become a better researcher and made it possible for me to complete this project. I am eternally grateful for her kindness and understanding which encouraged me to persevere and attain my goals during difficult moments. Her dedication, efforts, and unwavering support are testament to her excellence as a supervisor, and I feel privileged to be part of her team.

I would also like to express my gratitude to my committee members, Dr. Alex Schwartzman and Dr. Mark Ellenbogen, for their flexibility and patience this summer, as well as their contributions and valuable feedback. Special thanks also to Claude Senneville and Jonathan Santo for their assistance with statistical consultation.

Moreover, I would like to send my warmest regards to all members of the Stack lab for their continuous help, friendship and support. Each of them has made my graduate experience richer and I could not ask for better friends and colleagues to work with. In particular, I am indebted to Amanda Guay for her help developing the Mother-Child Social Problem-Solving coding scheme; to Naomi Grunzweig for her tremendous help and teaching over the years as well as for passing on great organizational skills; to Amélie Jean, for her hugs and laughs when I needed them most, and her incredible generosity; to Lindsey Barrieau and Sabrina Chiarella, for their terrific work as research assistants and their helping hand during ‘crunch time’; to Leah Enns, for being a true

friend and always being there for me; to Robin Moszkowski, for great conversations; and of course, to all volunteers who generously gave their time for data entry.

In addition, I would like to acknowledge my friends and family who have cheered me on and believed in me, and whose pride I have always felt: Vital, Benoit, Stéphanie, Karina, Danny F., Jackey, Rhyan, Jay, Fudd, Tania, and so many others. My deepest respect goes to my father, David, who never ceased to encourage me to self-reflect and ask 'why'. He taught me the importance of parents' roles in shaping their children, and no doubt, help foster my love for psychology and human development.

En fin, j'aimerais remercier, au plus profond de mon cœur, ma mère, Isabelle, pour son amour et son soutien constant depuis toujours. Maman, tu as toujours cru en moi et tu m'as permis de poursuivre mes rêves. Sans toi, je ne serais pas où je suis aujourd'hui. Pour tous tes sacrifices, je dédie ce mémoire en ton nom.

Table of Contents

List of Figures	viii
List of Tables	ix
List of Appendices	xi
Introduction	1
Method	10
Participants	10
Procedure	13
Measures	15
Observational Coding	15
Results	21
Discussion	45
References	59
Appendixes	67

List of Figures

Figure 1. Mean Number of Solutions Generated by Children as a Function of Maternal Risk	31
Figure 2. Mean Number of Antisocial Solutions Generated by Children as a Function of Maternal Risk	35
Figure 3. Mean Number of Poor Solutions Generated by Mothers as a Function of Maternal Risk	39
Figure 4. Mean Number of Poor Solutions Generated by Children as a Function of Maternal Risk	42
Figure 5. Mean Number of Resolved Unspecified in Decision-Making as a Function of Maternal Risk.	46

List of Tables

Table 1.	Demographic Variables for Mothers with Histories of Aggression and/or Social Withdrawal and Mothers from the Comparison Group: Means, Standard Deviations and T-values	12
Table 2.	Demographic Variables for Mothers and Children in the Current and Original Sample: Means, Standard Deviations and z-scores	14
Table 3.	Operational Definitions of Problem Defining Statements and Solutions Codes	17
Table 4.	Operational Definitions of Sophistication Codes for Problem Defining Statements and Solutions	18
Table 5.	Operational Definitions for Decision-Making Codes	20
Table 6.	Frequency of Defining Statements and Solutions for Mothers and Children: Means, Standard Deviations and Percentages	22
Table 7.	Frequency of Sophistication Ratings for Mothers and Children in the First Two Stages: Means, Standard Deviations and Percentages	23
Table 8.	Frequency of Decision-Making Codes: Means, Standard Deviations and Percentages	24
Table 9.	Maternal Childhood Levels of Aggression and Withdrawal and Mothers' Total Defining Statements	27
Table 10.	Maternal Childhood Levels of Aggression and Withdrawal and Children's Total Defining Statements	28
Table 11.	Maternal Childhood Levels of Aggression and Withdrawal and Children's Total Solutions	30

Table 12. Maternal Childhood Levels of Aggression and Social Withdrawal and Children's Autonomous Solutions	33
Table 13. Maternal Childhood Levels of Aggression and Social Withdrawal and Children's Total Antisocial Solutions	34
Table 14. Maternal Childhood Levels of Aggression and Social Withdrawal and Mothers' Antisocial Solutions	36
Table 15. Maternal Childhood Levels of Aggression and Social Withdrawal and Mothers' Poor Solutions	38
Table 16. Maternal Childhood Levels of Aggression and Social Withdrawal and Children's Poor Solutions	40
Table 17. Maternal Childhood Levels of Aggression and Social Withdrawal and Children's Very Good Solutions	43
Table 18. Maternal Childhood Levels of Aggression and Social Withdrawal and Resolved Unspecified	44
Table 19. Maternal Childhood Levels of Aggression and Social Withdrawal and Dyadic Resolution	47

List of Appendices

Appendix A. Sample Items from the Pupil Evaluation Inventory	67
Appendix B. Consent Form	69
Appendix C. Full Protocol	71
Appendix D. Mother Conflict Questionnaire	74
Appendix E. Child Conflict Questionnaire	76
Appendix F. The Mother-Child Social Problem-Solving Coding Scheme	78
Appendix G. Non-significant Regression Analyses	91

Interpersonal conflict is inevitable due to the complex and changing nature of human relationships. As such, the ability to effectively resolve day-to-day social problems is an essential component of socio-emotional and cognitive development (Chang, Downey, & Salata, 2004). Not surprisingly, poor problem-solving skills can be quite maladaptive (Rotheram, 2001). More specifically, deficits in social problem-solving skills have long been associated with poor social competence, academic difficulties, externalizing problems, as well as delinquency (Dodge, 1993; Lochman & Lampron, 1986; Shure & Spivack, 1982). Consequently, social problem-solving is a crucial area of study.

Problem-solving is most often defined as a learning process, one which incorporates two basic skills: the ability to think of multiple, alternative solutions, and the capacity to select the most effective solution among those generated (D'Zurilla & Goldfried, 1971; Youngstrom et al., 2000). Although individuals vary in the manner of problem resolution, research has recognized several general stages as important precursors to successful problem-solving. These stages can be summarized as follows: 1) defining and understanding the problem, 2) identifying the main goal, 3) generating solutions, 4) decision-making and implementation, and finally, 5) evaluating the decision (D'Zurilla & Goldfried, 1971; Tisdelle & Lawrence, 1986). Intervention programs designed to help individuals with social problems typically provide social skills training at each stage (Hussian & Lawrence, 1981; Guerra & Slaby, 1990). These interventions have been found to help individuals identify their problems more accurately and choose more appropriate solutions (Edelstein et al., 1980).

While some studies have investigated these stages in adult populations (Tisdelle & Lawrence, 1986), to date, the majority of research on children's problem-solving efforts has focused on two of the five stages: solution generation and decision-making (Evans & Short, 1991; Haskett, 1990; Slaby & Guerra, 1988, 1989; Shure & Spivack, 1979). Results from these studies have demonstrated a positive relationship between the quantity and quality of solutions and social competence. For example, Shure and Spivack (1972) found that, irrespective of socio-economic background or intellectual functioning, 10-to-12 year old children with emotional and social difficulties reported fewer solutions towards achieving a goal in a hypothetical social problem situation compared to control children. In addition, these same children made less reference to obstacles and time taken to reach the goal than their normal counterparts. When examining story content, children with emotional and social difficulties suggested more aggressive means to solve the social problems, with less elaboration, foresight and planning than did controls (Shure & Spivack, 1972). Similar findings have been found among younger children. For example, Mize and Cox (2001) found that 4-to-5 year old children who proposed 'friendly' solutions, as well as those who generated many solutions to hypothetical interpersonal problems, were rated by their teachers as being more cooperative and less aggressive towards their peers.

Results from several studies suggest that the quality of solutions may be a stronger predictor of ecologically valid behaviours (Fischler & Kendall, 1988; Guerra & Slaby 1989; Youngstrom, et al., 2000). For example, using hypothetical stories, Mott and Krane (1994) found that children rated as having behavioural difficulties by parents and teachers had lower mean problem-solving scores based on several qualitative dimensions

(e.g., how likely the solutions would solve the problem, the extent to which other people would consider the solutions socially appropriate, aggressiveness and passivity of the solutions, and the extent to which the child indicated an understanding of how other characters would feel). Similarly, Fischler and Kendall (1988) found that both teachers and parents rated children who generated more prosocial solutions as better adjusted. However, the total number of solutions was unrelated to parent or teacher ratings. Other studies have found that while the first solution generated by aggressive and unpopular children was equally likely to be prosocial compared to comparison children, the two groups differed in their alternative solutions in that aggressive or unpopular children's alternatives were more hostile or aggressive in nature (Guerra & Slaby 1989; Richard & Dodge, 1982). Overall, research strongly indicates that social adjustment in children is mediated by interpersonal problem-solving ability. In particular, the quantity of solutions generated is important, and perhaps even more so, their quality as defined by effectiveness, appropriateness, and reduced aggressiveness.

Although these studies have been informative, they have been largely limited to two of the stages in the overall problem-solving process. Many of the other problem-solving stages have been neglected; particularly children's ability to define and express their understanding of social problems. Investigating children's ability to describe the nature of their interpersonal problems, their concerns, their understanding of the causes, and their capacity to identify goals would not only fill an important gap in the literature, but would also provide a more comprehensive understanding of children's problem-solving skills.

Beyond the fact that it has been limited to two stages, research on children's problem-solving abilities has been largely restricted to either an individual or peer context during middle childhood. However, given the essential role parents play in the socialization of their children's development across all domains (Baumrind, 1989; Dix & Branca, 2003), examining how parents promote children's problem-solving efforts is critical. Research indicates that parents facilitate these abilities by way of instruction, guidance and modeling effective strategies (Miller, Murry, & Brody, 2005). In particular, parents who positively reinforce their children, ask guiding questions, model good listening skills, and display sensitivity have children who are more socially skilled and effective problem-solvers (Bloomquist et al., 1996; Portes, 1991; Winsler, et al., 1999). These effective strategies have been positively associated with maternal education. For example, mothers with high levels of education have been shown to have children who are more likely to propose delay of gratification as a tactic, such as waiting for a desired toy if used by another peer (Jones, Rickel, & Smith, 1980). Maternal education also predicts greater mother-child cooperation and effective child on-task behaviours during impersonal problem-solving tasks, such as puzzles or other intellectually stimulating tasks (Nilholm & Saljo, 1996). Parent-child cooperation is considered to be both valuable for fostering a good relationship and effective in problem resolution (Nastasi & Clements, 1991; Leseman & Sijtsling, 1996). In contrast, restrictive or controlling parents have been shown to have children who propose less adaptive solutions, such as social withdrawal, when presented with hypothetical mother-child conflicts, and are less likely to negotiate with their parents (Jones, Rickel, & Smith, 1980).

While studies have consistently underlined the importance of the mother-child context to children's social problem-solving skills, research to date has primarily been based on self-report data. Yet, observing mothers and children discuss their conflicts offers a more valid and less biased method to examine mother-child problem-solving abilities. Research indicates that responsive, cognitively stimulating mother-child interactions predict less impulsivity and a greater ability to delay gratification in children's later years (Olson, Bates, & Bayles, 1990). However, most studies examining mother-child problem-solving abilities have included preschoolers or young children (Bloomquist, et al., 1996; Freund, 1990; Pianta & Harbers, 1996). Parent-child problem-solving interactions are particularly valuable during middle childhood, as children's cognitive skills become more sophisticated and their social experiences increase (Keltikangas-Jarvinen, 2001). In addition, children's social competence is vital during critical transitions, such as the transition from elementary to high-school (Miller, Murry & Brody, 2005).

Children during middle childhood are more likely to develop social competence when their mothers model effective problem-solving strategies and have positive interactions with them. The quality of mother-child interactions can be affected by many risk factors, such as mental health, poverty, and behavioural problems (Serbin, Stack, & Schwartzman, 2000). For example, physically abusive parents and depressed mothers have been shown to model maladaptive and ineffective problem-solving strategies, and have children who demonstrate poor social competence and difficulties generating solutions (Bloomquist et al., 1996; Jones, Rickel, & Smith, 1980; Nilholm & Saljo, 1996). Similarly, mothers experiencing cumulative risk, such as high levels of economic

stress, single parenthood and/or visible minority status, have been shown to model aggression, view it as an appropriate means of problem-solving, and make more hostile emotional appraisals of ambiguous interpersonal situations when interacting with their children (Dodge, Pettit, & Bates, 1994; Root & Jenkins, 2005). Children from low socio-economic families, in turn, have tended to show higher levels of aggression at school as rated by their teachers (Root & Jenkins, 2005). Results from these studies imply that parents who display poor problem-solving abilities negatively impact their children's skills as well.

Aggression is another factor that can affect parenting. As mothers are often the primary caretakers, aggression in girls can be particularly damaging for developing adaptive parenting skills, as it places women at risk for poor psychosocial outcomes (Serbin et al., 1998, Serbin, Stack, & Schwartzman, 2000). Highly aggressive young girls are more likely to have lower intelligence, partake in risky behaviours, such as cigarette, drug, and alcohol use, and poor peer relations (Serbin, Stack & Schwartzman, 2000). Because aggression is a stable trait, coercive behaviours can persist into adulthood and reveal themselves in parenting strategies, such as greater use of power assertion (Patterson, 1982; Cairns, et al., 1998). Research has consistently shown strong evidence supporting a negative relationship between total number of solutions generated, effective and appropriate responses to interpersonal conflict, and aggression (Evans & Short, 1991; Fischler & Kendall, 1989; Richard & Dodge, 1982).

Social withdrawal is also associated with negative psychosocial outcomes. Although the pathways to risk for social withdrawal may be harder to detect, research has shown that it is a stable trait (Cooperman, 1996). While this may also be true of

aggressive women, withdrawn women place themselves at risk by hindering their capacity to learn competent social skills (Serbin et al., 2004). Due to their trajectories of negative psychosocial outcomes, aggressive and/or socially withdrawn mothers place their own children at risk, such as increased likelihood of behaviour problems, school drop out and lower self-esteem (Baumrind, 1989; Serbin et al., 2004). Given the link between deficient problem solving skills and later behavioural and academic problems, it is especially important to examine mother-child problem-solving strategies in families with histories of psychosocial risk.

Since maternal risk factors serve as significant threats to parenting and can therefore affect child outcome, there has been a growing interest in studying the transfer of risk from one generation to another. Intergenerational studies provide the framework needed to explain how parents' experiences and behaviours are transferred to children, as well as examine the processes underlying intergenerational continuities. The Concordia Longitudinal Risk Project (CLRP), which began in 1976, offers the unique opportunity to study women from a high-risk sample in an intergenerational framework. This ongoing project is a community-based sample of disadvantaged individuals from low socio-economic backgrounds who were screened as children along dimensions of aggression and social withdrawal (Ledingham, 1981). Across their life course, participants have experienced negative sequelae, such as school drop-out, delinquency, STDs and teen parenthood, adult criminality, as well as mental illnesses (Serbin, Stack, & Schwartzman, 2000). Studies have found that the offspring of the original CLRP participants are also at risk for behavioural difficulties (Serbin, Stack, & Schwartzman, 2000). In addition, women from the Concordia study identified as having childhood histories of aggression

and social withdrawal have been found to be more unresponsive and hostile in their interactions with their children than comparison mothers (Serbin et al., 2004). With regard to cognitive stimulation, findings indicate that maternal childhood aggression negatively predicts the quality of scaffolding as evidenced by the use of fewer helpful teaching strategies, as well as less warm guidance (Saltaris, 2004). Results from the same study also showed that both childhood aggression and social withdrawal were negative predictors of the quality of the home environment as shown by fewer toys or learning materials.

To date, as far as can be determined, there has been no report of a study examining interpersonal problem-solving skills of mothers with childhood histories of aggression and/or social withdrawal and their children. Furthermore, many women from the Concordia study now have pre-adolescent children, providing a unique opportunity to examine mother-child problem-solving interactions during middle-childhood. Given that this developmental period is typically characterized as a desire for more autonomy (Erikson, 1964) and parent-child conflicts are likely to increase in frequency and intensity (Riesch et al., 2000), observing high-risk mothers and their children discuss personal conflicts would provide a valuable contribution to the problem-solving literature. Firstly, such a study would be among the first to examine whether problem-solving abilities are effective in adults who displayed behavioural difficulties as children, and second, if childhood behavioural risk impairs second generation offspring's problem-solving skills. Third, it would greatly enhance our current understanding of preadolescent problem-solving skills. Fourth, the process of mother-child problem-solving strategies in a high-risk, intergenerational sample would be highlighted and extended for the first time.

Specifically, it is vital that more problem-solving stages other than generating solutions be explored, such as how mothers and children understand their conflicts (i.e. describing the problem, expressing concerns, causes and identifying goals) and the manner of their resolution.

In order to address these gaps in the literature, the present study was designed to examine the contribution of maternal childhood histories of aggression and social withdrawal to the prediction of mother-child problem-solving strategies across three important stages: problem definition, solution generation and decision-making. Goals stated by mothers and their children were included as part of the problem definition stage. Furthermore, the sophistication and type of solutions were also examined to investigate the relevance of the quality of solutions in high-risk populations across generations. Mothers from the Concordia study were observed discussing personal conflicts chosen from a list of topics from a questionnaire with their 9-to-12 year old children. There was one primary objective: to examine whether and how maternal risk status contribute to mother-child social problem-solving strategies in each of the three stages. Given the literature on the link between deficient problem-solving skills and behavioural problems (Evans & Short, 1991; Guerra & Slaby 1989; Shure & Spivack, 1972, 1974; Tisdelle & Lawrence, 1986), the following three hypotheses were made, each pertaining to a problem-solving stage.

Hypothesis 1. Regarding the problem-definition stage, maternal childhood histories of aggression and/or social withdrawal were expected to negatively impact dyads' ability to discuss their conflict in depth, as reflected by fewer defining statements overall.

Hypothesis 2. Regarding the solution generation stage, dyads with maternal childhood histories of aggression and/or withdrawal were expected to generate fewer and less sophisticated solutions overall. Furthermore, dyads with mothers who were aggressive and aggressive and socially withdrawn in childhood were expected to generate more antisocial solutions. In contrast, dyads with mothers who were socially withdrawn in childhood were expected to generate solutions reflecting more solitary strategies.

Hypothesis 3. Regarding the decision-making stage, it was predicted that dyads with mothers high on aggression and/or withdrawal would resolve their conflicts less; however, it was also expected that, when resolved, these dyads would be ineffective in their decision-making. Moreover, it was expected that dyads with mothers with histories of aggression and those with aggression and social withdrawal would have more unresolved conflicts containing negativity. Dyads with mothers with childhood histories of behavioural difficulties were expected to collaborate less and rather use more submissive techniques with their children.

Method

Participants

Between 1976 and 1978, 1774 students in grades 1, 4, and 7 attending French speaking public schools were recruited from inner-city, low socio-economic neighbourhoods of Montreal, Quebec, Canada. These students were screened on dimensions of aggression and social withdrawal by means of a French version of the Pupil Evaluation Inventory (PEI; Pekarik, Prinz, Liebert, Weintraub, & Neale, 1976). The PEI consists of a 34-item questionnaire which produces three factor scores of Aggression, Social Withdrawal and Likeability (see Appendix A for sample items).

Based on their PEI scores, children were identified as being at high psychosocial risk if they had high levels of: 1) aggression, 2) social withdrawal, or 3) high levels of both aggression and social withdrawal. A normative comparison group of children who were low on these dimensions from the same schools and neighbourhoods was also selected. A more in-depth summary of the original methodology can be found in Schwartzman et al. (1985).

The present study comprised 57 mothers and their 9-13-year-old children, drawn from a larger study of 73 participants from the Concordia study when their children were preschoolers. These families were visited at home and mother-child interactions were observed in several contexts. Based on women's original risk classifications, the sample was drawn from the four groups as follows: aggressive (8), socially withdrawn (12), aggressive-withdrawn (7) and control (30). As in previous studies (Cooperman, 1996; De Genna, 2001; Grunzweig, 2003), mothers' childhood aggression and social withdrawal scores were analyzed as dimensions rather than categorical predictors; for the present sample, these scores were normally distributed.

A total of 24 boys and 33 girls participated with their mothers. At the time of data collection, children's ages ranged between 9.49 to 13.29 years ($M = 10.95$, $SD = 0.97$). To ensure that mothers high on aggression and/or social withdrawal were similar to mothers low on these dimensions, comparisons were made by dividing mothers into two groups (i.e. risk and comparison) on several important socio-demographic variables (see Table 1). No significant differences were found between the two groups except for mothers' education. Mothers with low levels of Aggression and Withdrawal ($M = 13.4$, $SD = 2.61$) had acquired an average of 2.03 more years of education than mothers who

Table 1

Demographic Variables for Mothers with Histories of Aggression and/or Social Withdrawal and Mothers from the Comparison Group: Means, Standard Deviations, and t-values

Demographic variable	Risk mothers ^a (N=27)		Comparison mothers ^b (N=30)		t-value
	M	SD	M	SD	
Child age	10.94	.89	10.96	1.06	-0.11
Maternal age at testing	37.34	2.73	37.31	2.29	0.05
Maternal age at birth of first child	26.29	3.36	26.32	3.70	-0.04
Maternal education (years)	11.44	2.55	13.47	2.61	-2.95*
Prestige rating	342.44	101.65	369.03	137.12	-0.819

* $p < .01$

^aRisk mothers were defined as those who scored above the 95th percentile on Aggression and below the 75th percentile on Withdrawal (highly Aggressive), the reverse criteria for highly Withdrawn mothers, and above the 75th percentile on both Aggression and Withdrawal (mothers high on both). ^bComparison mothers were defined as those who scored between the 25th and 75th percentiles.

had high levels of Aggression and Withdrawal ($M = 11.44$, $SD = 2.55$), $t(55) = -2.96$, $p = .005$ (two-tailed). The mean prestige rating ($M = 356.21$, $SD = 120.98$) for all mothers corresponds to the following types of jobs: radio and television repairman, clerical supervisors, counter clerks, brickmasons and stonemasons. To ensure that mothers and children in the present sample were similar to those in the original sample, within-sample comparisons were performed on several socio-demographic variables (see Table 2). No significant differences were found.

Procedure

Mothers were contacted by telephone to obtain consent. Those who consented were scheduled for a home visit, during which they were asked to read and sign a consent form, as well as complete a battery of questionnaires (refer to Appendix B for Consent Form). They were also videotaped interacting with their child in three different contexts (refer to Appendix C for full protocol). Experimenters were blind to the mothers' risk status. For the purposes of this study, only one context was selected based on its ability to examine naturalistic mother-child interpersonal problem-solving behaviours. Specifically, mother-child dyads were asked to discuss conflicts which they had *both* rated as especially problematic in their relationship for six minutes (e.g., chores, homework, respecting parents, etc.; Appendices D and E include mother and child conflict questionnaires, respectively). Dyads were permitted to request a new topic if less than 4 minutes had elapsed and they could not discuss the topic further. Most dyads discussed only one topic (60%), although some discussed two (28%) and even fewer between two and four (12%). To maintain an equal number of topics across dyads, only the first conflict discussed was analyzed in the present study.

Table 2

Demographic Variables for Mothers and Children in Current and Original Sample: Means, Standard Deviations, and z-scores

Demographic variable	Current Sample (N=57)		Original Sample (N=73)		z-score
	M	SD	M	SD	
Child age	10.95	.97	11.02	1.01	-0.52
Maternal age at testing	37.32	2.49	37.39	2.47	-0.18
Maternal age at birth of first child	26.31	3.51	26.34	3.40	-0.07
Maternal education (years)	12.51	2.75	12.27	2.57	0.71
Prestige rating	356.21	120.98	344.81	113.77	0.76

Note. Z scores above 1.96 indicate significant differences.

Measures

The Mother-Child Social Problem-Solving Coding Scheme (MCSPSC) was used to code the quantity and sophistication of mother-child problem-solving verbal statements across three stages: Problem Definition, Solution Generation, and Decision-Making. The author developed this observational measure for the purposes of the study, based in part on the existing literature (D’Zurilla & Goldfried, 1971; Shure & Spivack, 1982). The coding scheme underwent numerous revisions until all measures were operationalized and could adequately and reliably describe mother-child problem-solving strategies, their sophistication and reactions (refer to Appendix F for the MCSPSC coding scheme).

Observational Coding

Mother-child interactions were observed and verbal statements were screened for problem-solving content across the three stages of Problem Definition, Solution Generation, and Decision-Making. Verbal statements made by either the mother or child related to one of the three stages were sequentially coded. For both the Problem Definition and Solution stages, verbal statements were coded in ‘thought’ units, each containing one idea/argument. Thus, if more than one concept or thought was included in several statements, each would be coded separately. The three problem-solving stages presented in the current study are ordered solely for purposes of clarification. It was recognized that participants might begin with generating solutions before defining the problem, and this was accounted for in the MCSPSC. However, the Decision-Making stage was always examined at the end of the task.

Verbal statements aimed at understanding or explaining the conflict were identified as belonging to the Problem Definition stage and four categories of defining

statements were coded: Descriptive, Issues, Goals, and Causes. Verbal statements aimed at solving the problem were identified as belonging to the Solution Generation stage and were also categorized into four codes: Autonomous, Social, Antisocial Overt, and Antisocial Covert. Table 3 provides a description and example for each defining statement and solution code. Three levels of sophistication were used to rate each defining statement and solution category: Poor, Good, and Very Good. Sophistication variables were reduced in two ways to limit the number of analyses. Firstly, rather than analyze the sophistication of each of the four categories of statements and solutions, these were collapsed to form three overall sophistication ratings for each stage (i.e. total Poor, Good, and Very Good). Secondly, only the lowest and highest sophistication ratings were analyzed for mothers and children: Poor and Very Good. To minimize potential bias, sophistication ratings were measured as a function of how realistic they were, their clarity and how much detail/elaboration was given. Table 4 provides a brief description and example for Poor and Very Good codes for both defining statements and solutions. A description of Good defining statements and solutions can be found in the MCSPSC in Appendix F.

While verbal statements were coded in ‘statement’ units for the first two problem-solving stages, Decision-Making was coded globally, commencing as soon as either participant selected a solution to implement or if either verbally stated that the social conflict was no longer problematic. The coder would then examine the remaining interaction and determine which resolution status best fit. Four resolution statuses were coded: Unresolved, Unresolved Conflict, Resolved Specified, and Resolved Unspecified.

Table 3

Operational Definitions of Problem Defining Statements and Solutions Codes

Codes	Description	Example
The Problem Definition Stage		
Descriptive	Concrete or factual descriptions of the problem or an aspect of the problem	“your clothes are always on the floor” “my sister and I argue during supper time”
Issues	Concerns or emotion-based statements about how the problem made them feel	“you may never learn to be tidy” “it angers me when you don’t respect what we say”.
Goals	Desires, wishes or expectations regarding the other’s behaviour or situation without stating how one would get to the end point	“I would like you to get along with your sister” “ I would like you to go to bed at 9:00 pm rather than 10:00 pm”
Causes	Statements that explain why the problem is occurring	“my room is dirty because I leave my clothes on the floor after undressing them” “my sister and I argue because she is bossy”
The Solution Generation Stage		
Autonomous	Solving the problem on one’s own without the help of others	“you could clean your room on Tuesdays and Wednesdays after school”
Social	Strategies involving the cooperation of others	“you can talk to your sister and ask her to be more respectful”
Antisocial Overt	Direct confrontation and/or punishments	“I’ll <i>tell</i> my sister to stop using the television” “you won’t be able to see your friends if your room is not clean”
Antisocial Covert	Socially excluding others or socially withdrawing oneself	“I’ll ignore my sister”

Table 4

Operational Definitions of Sophistication Codes for Problem Defining Statements and Solutions

Code	Description	Example
Sophistication of Problem Defining Statements		
Poor	Vague, little information, and/or unrealistic	"my room is messy", "I'm not too happy", "you could start helping me", "it's my friend's fault if the room is messy"
Very Good	Clear, detailed, contained elaborations, and/or explanation of how others may be affected	"you have clothes on your floor, papers on your desk, and your bed is never made", "it upsets everyone in the family when you argue with your sister", "you need to learn to become more organized so that you become responsible", "my sister and I argue because she always tells me what to do"
Sophistication of Solutions		
Poor	Vague, unrealistic, and/or missing relevant information such as causal thinking or mention of when or how solution could be implemented	"We could make compromises", "I will clean my room once in awhile", "my sister could move out of the house", "I will ignore my sister"
Very Good	Clear, detailed, realistic, contained elaborations such as when or how solution could be implemented	"We could create a family schedule that says when each of us will do our chores", "you could pick up your clothes after supper", "I'll tell my sister to get out of my room when she enters", "because she bothers me, I will leave the room when my sister starts teasing me"

When a dyad received Resolved Specified or Resolved Unspecified, the manner of their decision-making was coded. Four categories of Resolution Styles were observed: Collaboration, Compromise, Mother Agreement and Child Agreement, and Mother and Child Submission. Table 5 provides a brief description for all Decision-Making codes. Inter-rater reliability was achieved by having an undergraduate student, who was blind to the hypotheses of the study, code a portion (15%) of the interactions. Both the primary and secondary coders were blind to maternal risk status. Inter-observer agreement was calculated using Kappa coefficients. Reliability was 82% for the Problem Definition stage, 90% for the Solution Generation stage, 80% for Resolution Status, and 91% for the manner of resolution.

Data Reduction

Data from the present study originates from a larger bank of data. Consequently, mother-child problem-solving strategies and behaviours were initially entered sequentially and data remained in its most simplistic form. That is, mother-child statements, solutions, sophistication ratings and decision-making strategies were entered in the order that they were delivered by the dyad during their interaction. A second dataset, used for the present study, was created from the first one. Frequencies for all codes were obtained for both mothers and children, resulting in 32 variables [(Problem Definition stage; 4 X 2) + (Solution Generation stage; 4 X 2) + (Sophistication in both stages; 2 X 2 X 2) + (resolution style; 4) + (resolution manner; 4)]. Frequency scores for each defining statement and solution category were summed to obtain four variables of the total number of statements/solutions made by mothers and children individually.

Table 5

Operational Definitions for Decision-Making Codes

Code	Description	Example
Resolution Status		
Unresolved	Neither participant made reference to implementing a solution or having solved their conflict	Mother and child do not appear upset, they ask the examiner to end the task, no solutions has been proposed or chosen
Unresolved Conflict	Hostility was detected and the social conflict had not been resolved	Showing anger, disgust, disappointment; critical statements; pushing or hitting; ending the task because of hostility
Resolved Specified	One or both participants clearly select a solution to be implemented	"So we've decided Saturday is the day you will clean your room"
Resolved Unspecified	One or both participants agreed on a Goal rather than a Solution or were vague by not specifying a solution	Stating that the room will be clean from now on, with no mention of how this will be achieved
Manner of Resolution		
Collaboration	Both mother and child elaborate on each other's ideas or share their opinions, ending in mutual agreement	Both mother and child discuss which day the child could clean his/her room
Compromise	A decision proposed by one participant is altered in order to accommodate the other	The mother agrees to have chores done after supper rather than before following child's request
Agreement	One participant simply agrees with the other's decision without actively participating in the process	Child says "I'll start cleaning my room on Saturdays", and mother says "OK"
Submission	A participant exhibits disapproval or appears reluctant while still consenting to the other's decision	Mother says "you will clean your room on Saturdays" and child says "OK, fine" but eyes are on the floor, the tone is one of uncertainty, disbelief, or discontent

Additional variables were created to exclude elaborations and obtain frequency scores only for unique solutions generated by either participant. Specifically, elaborations were subtracted from all four solution categories. However, given that elaborations were interpreted as opportunities for mothers and children to increase the sophistication of their problem-solving strategies, all other variables included elaborations.

Results

Prior to conducting data analyses, descriptive statistics were used to assess skewness for each variable and to identify outliers. Only a few variables had skewed distributions. However, because those skewed variables represented naturally infrequent occurring behaviours, it was elected not to transform them.

The means and standard deviations for all variables are reported in Tables 6 through 8. Percentage scores, reflecting the sum of each variable relative to the total sum of its category (i.e. total defining statements, total number of solutions, total number of decisions), are also reported to permit meaningful comparisons between variables. Mothers and children both made more factual descriptive statements. Mothers offered Causes the least, whereas children made the least goals. Furthermore, Autonomous solutions (i.e. solitary) were the solutions most frequently generated by both mothers and children generated more social ones. Covert Antisocial solutions (i.e. passive-aggressive) represented the least proposed solution type. Finally, there was equal likelihood of dyads resolving their conflicts as well as not; Child Submission was the manner of resolution most employed. Although preliminary, the distribution of Problem Defining statements,

Table 6

Frequency of Defining Statements and Solutions for Mothers and Children: Means, Standard Deviations, and Percentages

Variable	M	SD	%
Defining Statements			
Description			
Mother	6.21	3.67	46.1
Child	3.88	3.31	42.8
Issue			
Mother	3.54	2.87	26.3
Child	2.14	2.19	23.6
Goal			
Mother	2.44	2.06	18.1
Child	1.11	1.52	12.2
Cause			
Mother	1.28	1.49	9.5
Child	1.93	2.54	21.3
Total Defining Statements			
Mother	13.47	6.63	100.0
Child	9.05	5.83	100.0
Solutions			
Autonomous			
Mother	1.11	1.47	64.3
Child	.28	.62	37.2
Social			
Mother	.42	.78	24.5
Child	.33	.76	44.2
Overt			
Mother	.19	.55	11.2
Child	.07	.26	9.3
Covert			
Mother	.00	.00	0.0
Child	.07	.32	9.3
Total Solutions			
Mother	1.81	2.03	100.0
Child	.75	1.23	100.0

Table 7

Frequency of Sophistication Ratings for Mothers and Children in the First Two Stages: Means, Standard Deviations and Percentages

Sophistication variables	Problem Definition Stage			Solution Generation		
	M	SD	%	M	SD	%
Poor						
Mother	3.14	2.24	23.0	.49	.93	16.6
Child	2.98	2.62	32.9	.30	.63	19.8
Very Good						
Mother	3.33	3.07	24.7	1.40	1.96	47.3
Child	1.53	1.90	16.9	.58	1.40	38.4

Table 8

Frequency of Decision-Making Codes: Means, Standard Deviations, and Percentages

Descriptive variables	M	SD	%
Resolved Specified	.46	.76	40.0
Resolved Unspecified	.12	.33	10.5
Unresolved With Conflict	.21	.45	18.5
Unresolved No Conflict	.35	.48	30.8
Collaboration	.14	.35	24.2
Compromise	.05	.23	9.1
Child Agree With Mom	.11	.31	18.2
Mother Agree With Child	.05	.23	9.1
Child Submit	.23	.46	39.4
Mother Submit	.00	.00	0.0

Note. Percentage scores for Manner of Resolution based on total Resolved conflict

Solutions, and Decision-Making strategies offer a window into understanding how mothers and children resolve their day-to-day conflicts. Hierarchical multiple regressions were employed to investigate the effects of maternal risk status on mother-child problem-solving strategies. Due to the number of variables included in the present study, some variables were omitted and certain subcategories were collapsed to reduce the number of analyses. In the Problem Defining stage, only the total number of defining statements across types was analyzed, reflecting the extent to which dyads discussed the nature of their conflict overall. In the Solution Generation stage, Overt and Covert Antisocial solutions were collapsed, creating a broader Antisocial variable. Because mothers did not generate Covert Antisocial solutions, the Antisocial variable for mothers consisted only of Overt Antisocial solutions. To examine whether Aggression and Social Withdrawal was mirrored in dyads with mothers who displayed these behaviours in childhood, Autonomous and Antisocial solutions were analyzed due to the solitary and aggressive nature reflected in each respectively. Social solutions, which did not capture either Aggression or Withdrawal, were omitted. With regard to sophistication ratings, only the sophistication of solutions were included in the analyses given the link that has been shown in previous studies between social competence and the types of solutions generated. Finally, in the Decision-Making stage, 'Collaboration' and 'Compromise' were collapsed as both indicated that mothers and children participated together in the resolution of their conflict. This new variable was re-named Dyadic Resolution. Similarly, Maternal Agreement and Child Agreement were also collapsed to form an Agreement resolution variable.

In all regressions, predictor variables were entered chronologically. Consequently, for each analysis, mothers' histories of 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, because previous research from the Concordia study has indicated that the presence of both childhood Aggression and Social Withdrawal together may be more predictive of negative outcomes than Aggression or Withdrawal alone, the interaction term was entered in the final step. All results pertaining to the interaction term of Aggression and Withdrawal were isolated. Only significant effects are reported in the text; non-significant results can be found in Appendix G. All statistical analyses were conducted using SPSS-11.5 for Windows.

Hypothesis 1: Maternal Risk Predicting Problem Definition

A separate multiple regression was conducted for total Defining statements made by mothers and children.

In the regression examining the total number of Defining statements made by mothers, the hierarchical regression accounted for 31.2% (22.4% adjusted) of the total variance (Table 9). Neither maternal Childhood Aggression nor Social Withdrawal predicted the total frequency of maternal Defining statements. However, Maternal Education and Child Age emerged as significant predictors at Steps 3 and 4, accounting for 16% and 20% of the variance respectively. Mothers with higher levels of education and those with older children provided more defining statements overall, regardless of type (*Beta's* = .46 and .48, *t's* = 3.01 and 3.46, *p's* <.01, respectively). A similar finding was found for children's total number of Defining statements. This hierarchical regression accounted for 22.7% (12.8% adjusted) of the total variance (Table 10).

Table 9

Maternal Childhood Levels of Aggression and Social Withdrawal and Mothers' Total Defining Statements (N=57)

Variables	Beta	Sr ²	T	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.03	0.80
Childhood Aggression	-0.18	0.00	-0.21		
Childhood Withdrawal	-1.12	0.03	-1.26		
<u>Step 2</u>				0.04	2.38
Childhood Aggression	0.15	0.00	0.17		
Childhood Withdrawal	-0.47	0.00	-0.48		
Maternal Education	0.58	0.04	1.54		
<u>Step 3</u>				0.22**	7.65**
Childhood Aggression	-0.15	0.00	-0.19		
Childhood Withdrawal	0.35	0.00	0.37		
Maternal Education	1.08	0.13	3.01*		
Child Age	3.31	0.18	3.46**		
Child Gender	-1.80	0.02	-1.06		
<u>Step 4</u>				0.01	0.92
Childhood Aggression	0.41	0.00	0.41		
Childhood Withdrawal	0.47	0.00	0.49		
Maternal Education	1.12	0.14	3.09*		
Child Age	3.33	0.18	3.49**		
Child Gender	-2.03	0.02	-1.18		
Childhood Aggression x Withdrawal	-0.66	0.01	-0.96		
	R = .56		R ² _{Adj} = .22		F = 3.55**

* $p < 0.01$, ** $p < 0.001$

Table 10

Maternal Childhood Levels of Aggression and Social Withdrawal and Children's Total Defining Statements

Variables	Beta	sr ²	T	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.10	2.87
Childhood Aggression	-0.06	0.00	-0.05		
Childhood Withdrawal	-0.32	0.10	-2.37		
<u>Step 2</u>				0.00	0.00
Childhood Aggression	-0.06	0.00	-0.45		
Childhood Withdrawal	-0.32	0.08	-0.21		
Maternal Education	-0.01	0.00	-0.04		
<u>Step 3</u>				0.11*	3.33*
Childhood Aggression	-0.10	0.01	-0.08		
Childhood Withdrawal	-0.17	0.02	-1.12		
Maternal Education	0.10	0.01	0.64		
Child Age	0.30	0.07	2.04*		
Child Gender	0.27	0.06	1.97*		
<u>Step 4</u>				0.02	1.00
Childhood Aggression	-0.20	0.02	-1.21		
Childhood Withdrawal	-0.19	0.03	-1.24		
Maternal Education	0.08	0.00	0.53		
Child Age	0.30	0.07	2.01*		
Child Gender	0.28	0.07	2.09*		
Childhood Aggression x Withdrawal	0.16	0.02	1.00		
	R = .48		R ² _{Adj} = .13		F = 2.30

* $p < .05$

Maternal Childhood Aggression and Social Withdrawal did not predict the total frequency of maternal Defining statements. Rather, Child Age and Gender emerged as significant predictors at Step 3 and 4, accounting for 6.9% and 6.4% of the variance respectively. Older children and girls provided more Defining statements overall (*Beta's* = .30 and .27, *t's* = 2.04 and 1.97, *p's* < .05, respectively). That is, they spent more time discussing the nature of the problem.

Hypothesis 2: Maternal Risk Predicting Solution Generation

A separate multiple regression was conducted for the total number of solutions, as well as Autonomous and Antisocial solutions generated by mothers and children. In the regression examining the total number of solutions generated by children, maternal childhood Withdrawal significantly predicted total child solutions in the first step, accounting for 30.9% (22% adjusted) of the total variance (Table 11). At Step 1, maternal childhood Withdrawal emerged as a significant predictor, explaining 9.9% of the variance. Mothers who were Socially Withdrawn in childhood had children who provided more solutions overall (*Beta* = .42, *t* = 2.87, *p* < .05). The same finding was revealed at Steps 2 and 3 for Maternal Education. However, when all the predictors were entered into the equation in the final step, Maternal Education only tended to significantly predict child solutions, accounting for 5.1% of the variance (*Beta* = .28, *t* = 1.88, *p* = .066), suggesting that the effect of Maternal Education was partly mediated by maternal histories of both Aggression and Social Withdrawal. At Step 4, the interaction term for Aggression and Withdrawal emerged as a significant predictor, accounting for 11.7% of the variance. As illustrated in Figure 1, mothers who were high on Aggression and

Table 11

Maternal Childhood Levels of Aggression and Withdrawal and Children's Total Solutions (N = 57)

Variables	Beta	sr ²	T	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.12*	3.34*
Childhood Aggression	0.15	0.02	1.13		
Childhood Withdrawal	0.32	0.10	2.39*		
<u>Step 2</u>				0.07*	4.37*
Childhood Aggression	0.22	0.04	1.64		
Childhood Withdrawal	0.43	0.16	3.13*		
Maternal Education	0.30	0.07	2.09*		
<u>Step 3</u>				0.01	0.14
Childhood Aggression	0.21	0.04	1.54*		
Childhood Withdrawal	0.47	0.16	3.04**		
Maternal Education	0.32	0.07	2.04*		
Child Age	0.06	0.00	0.43		
Child Gender	0.05	0.00	0.39		
<u>Step 4</u>				0.12*	7.96*
Childhood Aggression	-0.05	0.00	-0.35		
Childhood Withdrawal	0.42	0.12	2.87**		
Maternal Education	0.28	0.05	1.88 ^t		
Child Age	0.05	0.00	0.39		
Child Gender	0.10	0.01	0.81		
Childhood Aggression x Withdrawal	0.43	0.12	2.82*		
	R = 0.56		R ² _{Adj} = .22		F = 3.50*

* $p < .05$, ** $p < .01$, ^t $p = .066$

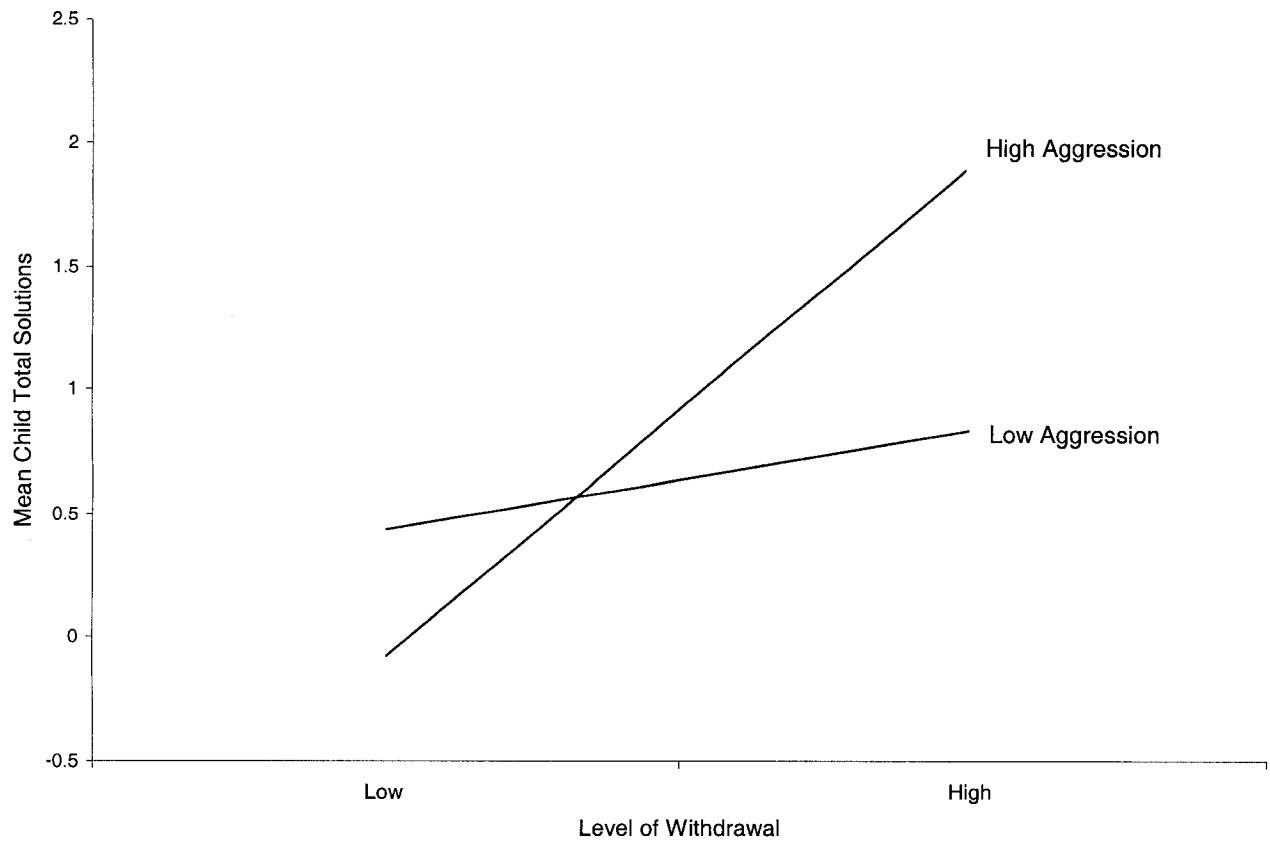


Figure 1. Mean Number of Solutions Generated by Children as a Function of Maternal Risk

Withdrawal in childhood had children who suggested more solutions overall ($Beta = .43$, $t = 2.82$, $p < .05$).

In the regression examining children's Autonomous solutions, the hierarchical regression accounted for 25.1% (15.5% adjusted) of the total variance (Table 12). At Step 1, Maternal Childhood Withdrawal emerged as a significant predictor, accounting for 10.5% of the variance. Mothers who were Socially Withdrawn in childhood had children who generated a greater number of Autonomous solutions ($Beta = .324$, $t = 2.48$, $p < .05$). That is, they were more likely to suggest solitary solutions.

In the regression examining children's Antisocial solutions, the hierarchical regression accounted for 26.2% (16.8% adjusted) of the total variance (Table 13). At Step 4, maternal Aggression and Social Withdrawal emerged as a significant predictor, accounting for 11.2% of the variance. As illustrated in Figure 2, mothers who were high on Aggression and Withdrawal had children who generated more Antisocial solutions overall ($Beta = .42$, $t = 2.67$, $p < .01$). These included passive-aggressive solutions, such as social withdrawal or exclusion and/or solutions involving punishments, direct confrontation or aggressive strategies.

In the regression examining mothers' Antisocial solutions, the hierarchical regression accounted for 25.6% (16.1% adjusted) of the total variance (Table 14). Maternal Aggression and Withdrawal did not predict total number of mothers' Antisocial solutions. However, at Step 2, Maternal Education emerged as a significant predictor, explaining 10.6% of the variance. Mothers with higher levels of education suggested more Antisocial solutions to their children ($Beta = .51$, $t = 3.37$, $p < .01$).

Table 12

Maternal Childhood Levels of Aggression and Social Withdrawal and Children's Autonomous Solutions (N=57)

Variables	Beta	Sr ²	t	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.13*	3.87*
Childhood Aggression	0.15	0.02	-1.10		
Childhood Withdrawal	0.32	0.10	2.48*		
<u>Step 2</u>				0.03	1.86
Childhood Aggression	0.22	0.10	-0.75		
Childhood Withdrawal	0.43	0.14	2.85**		
Maternal Education	0.30	0.03	1.36		
<u>Step 3</u>				0.08	2.41
Childhood Aggression	0.21	0.02	-1.03		
Childhood Withdrawal	0.47	0.20	3.53**		
Maternal Education	0.32	0.06	1.95		
Child Age	0.06	0.06	1.92		
Child Gender	0.05	0.03	1.45		
<u>Step 4</u>				0.01	0.72
Childhood Aggression	-0.05	0.00	-0.33		
Childhood Withdrawal	0.42	0.21	3.60**		
Maternal Education	0.28	0.07	2.02		
Child Age	0.05	0.06	1.93		
Child Gender	0.10	0.03	1.31		
Childhood Aggression x Withdrawal	0.43	0.01	-0.85		
	R = .50		R ² _{Adj} = .16		F = 2.62

* $p < .05$ ** $p < 0.01$

Table 13

*Maternal Childhood Levels of Aggression and Social Withdrawal and Children's Total Antisocial Solutions
(N=57)*

Variables	Beta	sr ²	T	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.05	1.38
Childhood Aggression	0.21	0.04	1.52		
Childhood Withdrawal	0.11	0.01	0.77		
<u>Step 2</u>				0.02	0.90
Childhood Aggression	0.24	0.05	1.70		
Childhood Withdrawal	0.17	0.02	1.10		
Maternal Education	0.15	0.02	0.95		
<u>Step 3</u>				0.08	2.31
Childhood Aggression	0.27	0.07	1.95		
Childhood Withdrawal	0.05	0.00	0.32		
Maternal Education	0.08	0.00	0.49		
Child Age	-0.21	0.03	-1.35		
Child Gender	-0.27	0.07	-1.92		
<u>Step 4</u>				0.11*	7.14*
Childhood Aggression	0.01	0.00	0.09		
Childhood Withdrawal	-0.00	0.00	-0.01		
Maternal Education	0.04	0.00	0.24		
Child Age	-0.22	0.04	-1.50		
Child Gender	-0.22	0.04	-1.64		
Childhood Aggression x Withdrawal	0.42	0.11	2.67*		
	R = .51		R ² _{Adj} = .17		*F = 2.78

$p^* < .05$

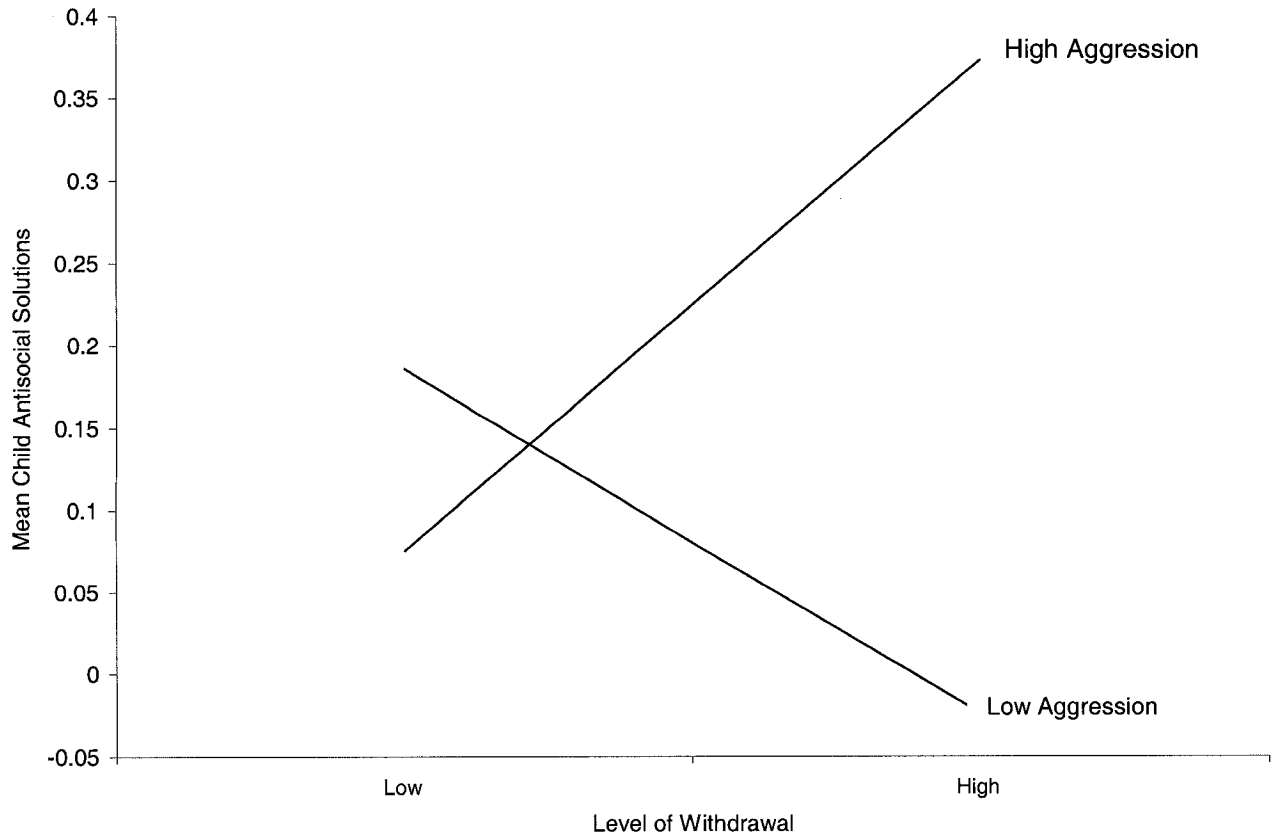


Figure 2. Mean Number of Antisocial Solutions Generated by Children as a Function of Maternal Risk

Table 14

Maternal Childhood Levels of Aggression and Social Withdrawal and Mothers' Antisocial Solutions (N=57)

Variables	Beta	sr ²	t	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.04	1.09
Childhood Aggression	-0.11	0.01	-0.79		
Childhood Withdrawal	-0.18	0.03	-1.29		
<u>Step 2</u>				0.11*	6.20*
Childhood Aggression	-0.03	0.00	-0.20		
Childhood Withdrawal	-0.02	0.00	-0.15		
Maternal Education	0.37	0.11	2.49*		
<u>Step 3</u>				0.11*	3.42*
Childhood Aggression	-0.07	0.00	-0.54		
Childhood Withdrawal	0.12	0.01	0.79		
Maternal Education	0.51	0.18	3.37*		
Child Age	0.37	0.10	2.59*		
Child Gender	0.12	0.01	0.88		
<u>Step 4</u>				0.00	0.21
Childhood Aggression	-0.11	0.01	-0.70		
Childhood Withdrawal	0.11	0.01	0.72		
Maternal Education	0.51	0.17	3.27*		
Child Age	0.37	0.10	2.56*		
Child Gender	0.12	0.01	0.93		
Childhood Aggression x Withdrawal	0.07	0.00	0.46		
	R = .51		R ² _{Adj} = .16		F = 2.70

**p* < 0.05

Similarly, at Step 3, Child Age emerged as a significant predictor, explaining 10.4% of the variance. Thus, mothers were more likely to suggest Antisocial Solutions when their children were older ($Beta = .37, t = 2.59, p < .05$). These solutions were those that included direct confrontation or punishment only.

Maternal Risk Status Predicting Sophistication of Solutions

A separate multiple regression was conducted for Poor and Very Good sophistication ratings for both mother and child solutions.

In the regression examining Poor solutions generated by mothers, the hierarchical regression accounted for 17.8% (7.3% adjusted) of the total variance (Table 15). At Step 4, Child Gender emerged as a significant predictor, explaining 7.6% of the variance. Mothers were more likely to generate less sophisticated solutions when they interacted with daughters than sons ($Beta = .29, t = 2.08, p < .05$). Also at Step 4, the interaction term of maternal Aggression and Withdrawal emerged as a trend, explaining 6.9% of the variance. As shown in Figure 3, mothers who were high on both Aggression and Withdrawal in childhood tended to generate more poorly sophisticated solutions to their children when resolving their conflict ($Beta = .33, t = 1.98, p = .054$). Poor solutions included those that were unrealistic or extremely vague.

In the regression examining children's Poor solutions, the hierarchical regression accounted for 19.3% (9% adjusted) of the total variance (Table 16). At Step 4, Gender emerged as a significant predictor, explaining 7.2% of the variance. The interaction term of Aggression and Withdrawal also emerged as a predictor at Step 4, though as a trend, accounting for 5.3% of the variance. Girls generated more Poor solutions. As shown in

Table 15

*Maternal Childhood Levels of Aggression and Social Withdrawal and Mothers' Poor Solutions
(N=57)*

Variables	Beta	sr ²	T	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.03	0.84
Childhood Aggression	0.14	0.02	0.98		
Childhood Withdrawal	0.13	0.02	0.90		
<u>Step 2</u>				0.00	0.06
Childhood Aggression	0.14	0.02	1.01		
Childhood Withdrawal	0.14	0.02	0.92		
Maternal Education	0.04	0.00	0.25		
<u>Step 3</u>				0.08	2.05
Childhood Aggression	0.11	0.01	0.81		
Childhood Withdrawal	0.26	0.05	1.57		
Maternal Education	0.11	0.01	0.64		
Child Age	0.21	0.03	1.33		
Child Gender	0.25	0.06	1.77		
<u>Step 4</u>				0.07 ^t	3.92 ^t
Childhood Aggression	-0.09	0.00	-0.50		
Childhood Withdrawal	0.22	0.03	1.35		
Maternal Education	0.07	0.00	0.46		
Child Age	0.20	0.03	1.32		
Child Gender	0.29	0.08	2.08*		
Childhood Aggression x Withdrawal	0.33	0.07	1.98 ^t		
	R = .42		R ² _{Adj} = .07		*F = 1.69

* $p < .05$ ^t $p = 0.054$

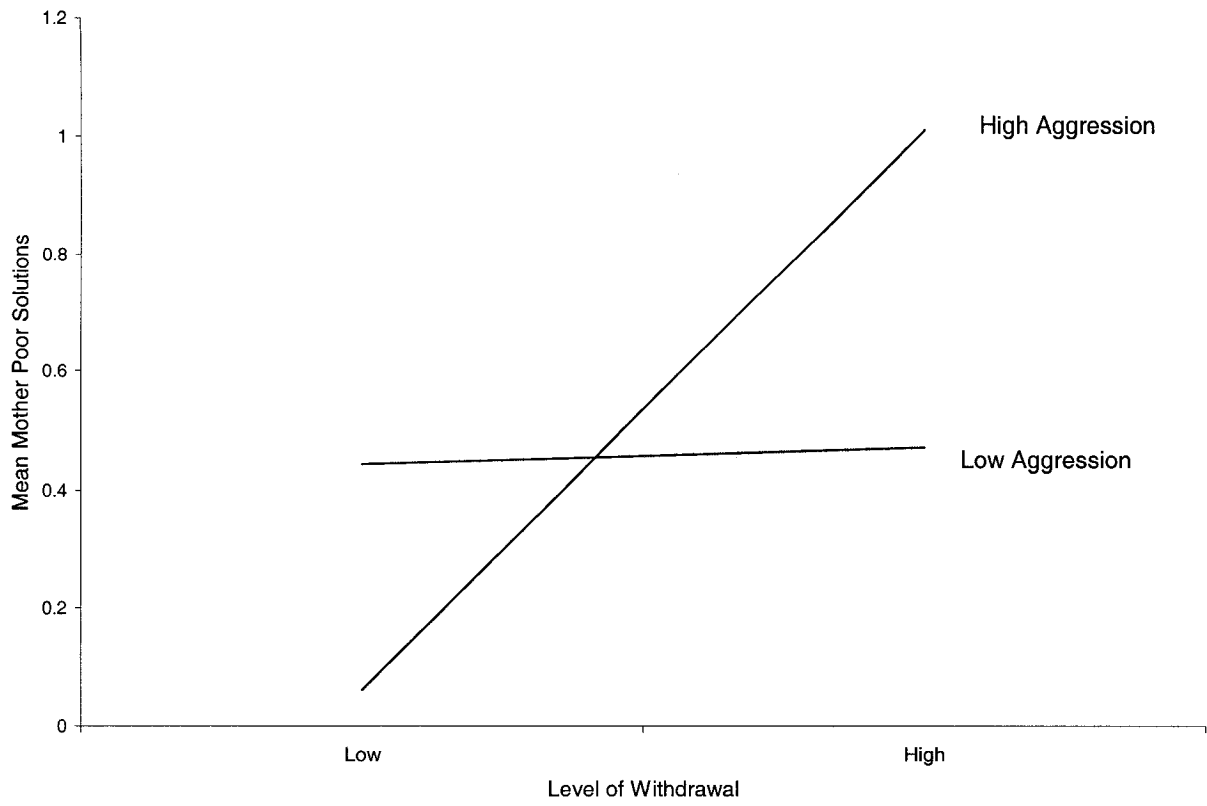


Figure 3. Mean Number of Poor Solutions Generated by Mothers as a Function of Maternal Risk.

Table 16

*Maternal Childhood Levels of Aggression and Social Withdrawal and Children's Poor Solutions
(N=57)*

Variables	Beta	sr ²	t	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.08	2.25
Childhood Aggression	0.26	0.07	1.97		
Childhood Withdrawal	0.12	0.02	0.92		
<u>Step 2</u>				0.00	0.11
Childhood Aggression	0.28	0.07	1.97		
Childhood Withdrawal	0.15	0.02	0.97		
Maternal Education	0.05	0.00	0.33		
<u>Step 3</u>				0.06	1.58
Childhood Aggression	0.26	0.06	1.88		
Childhood Withdrawal	0.21	0.03	1.32		
Maternal Education	0.06	0.00	0.35		
Child Age	0.06	0.00	1.37		
Child Gender	0.25	0.06	1.78		
<u>Step 4</u>				0.05 ^t	3.11 ^t
Childhood Aggression	0.09	0.00	0.50		
Childhood Withdrawal	0.18	0.02	1.11		
Maternal Education	0.03	0.00	0.17		
Child Age	0.05	0.00	1.34		
Child Gender	0.28	0.07	2.04*		
Childhood Aggression x Withdrawal	0.29	0.05	1.76 ^t		
	R = .44		R ² _{Adj} = .09		F = 1.87

* $p < .05$ ^t $p < 0.10$

Figure 4, children of mothers who were high on Aggression and Withdrawal tended to do the same (*Beta's* = .28, and .29, *t's* = 2.04 and 1.76, *p* <.05, .084, respectively). These findings suggest that dyads with daughters as well as those with Aggressive and Withdrawn mothers displayed less sophisticated strategies in resolving their conflict. In the regression examining children's Very Good solutions, the hierarchical regression accounted for 17.4% (6.9% adjusted) of the total variance (Table 17). At Step 2, Maternal Education emerged as a significant predictor, explaining 8% of the variance, indicating that children of more educated mothers generated more Very Good solutions. However, Maternal Education became a trend once Child Age, Gender and the interaction term were entered in the third and fourth step. At Step 4, Maternal Education accounted for 6.1% of the variance (*Beta* = .32, *t* = 2.12, *p* <.05). Nonetheless, this finding suggests that children of more educated mothers tended to demonstrate sophisticated thinking when generating solutions.

Hypothesis 3: Maternal Risk Status Predicting Decision-Making

A separate multiple regression was conducted for each resolution status (Resolved Specified, Resolved Unspecified, Unresolved with Conflict, Unresolved without Conflict) and the manner of Resolution (Dyadic Resolution, Agreement, Child Submission).

In the regression examining Resolved Unspecified, the hierarchical regression accounted for 24.1% (14.4% adjusted) of the total variance (Table 18). At Step 1, maternal Withdrawal emerged a significant predictor, explaining 14.4% of the variance. Therefore, while dyads with mothers who were Socially Withdrawn in childhood



Figure 4. Mean Number of Poor Solutions Generated by Children as a Function of Maternal Risk.

Table 17

Maternal Childhood Levels of Aggression and Social Withdrawal and Children's Very Good Sophisticated Solutions (N = 57)

Variables	Beta	sr ²	t	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.04	1.00
Childhood Aggression	-0.19	0.04	-1.41		
Childhood Withdrawal	0.01	0.00	0.07		
<u>Step 2</u>				0.08*	4.50*
Childhood Aggression	-0.12	0.01	-0.90		
Childhood Withdrawal	0.14	0.02	-0.98		
Maternal Education	0.32	0.08	2.12*		
<u>Step 3</u>				0.06	1.65
Childhood Aggression	-0.13	0.02	-0.96		
Childhood Withdrawal	0.19	0.03	1.23		
Maternal Education	0.30	0.06	1.90 ^t		
Child Age	0.01	0.00	0.04		
Child Gender	0.25	0.05	1.79		
<u>Step 4</u>				0.00	0.00
Childhood Aggression	-0.14	0.01	-0.80		
Childhood Withdrawal	0.19	0.03	1.20		
Maternal Education	0.30	0.06	1.86 ^t		
Child Age	0.01	0.00	0.04		
Child Gender	0.25	0.05	1.76		
Childhood Aggression x Withdrawal	0.01	0.00	0.05		
	R = .42		R ² _{Adj} = .07		F = 1.65

* $p < 0.05$ ^t $p < 0.10$

Table 18

Maternal Childhood Levels of Aggression and Social Withdrawal and Resolved Unspecified (N=57)

Variables	Beta	sr ²	t	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.16*	4.70*
Childhood Aggression	0.13	0.02	1.03		
Childhood Withdrawal	0.38	0.14	2.95**		
<u>Step 2</u>				0.01	0.35
Childhood Aggression	0.15	0.02	1.13		
Childhood Withdrawal	0.42	0.14	2.90**		
Maternal Education	0.09	0.01	0.59		
<u>Step 3</u>				0.02	0.69
Childhood Aggression	0.13	0.02	0.98		
Childhood Withdrawal	0.49	0.16	3.10**		
Maternal Education	0.14	0.01	0.86		
Child Age	0.14	0.02	0.95		
Child Gender	0.12	0.01	0.98		
<u>Step 4</u>				0.06 [†]	3.49 [†]
Childhood Aggression	-0.05	0.00	-0.30		
Childhood Withdrawal	0.45	0.14	2.92**		
Maternal Education	0.11	0.01	0.69		
Child Age	0.13	0.01	0.93		
Child Gender	0.16	0.02	1.15		
Childhood Aggression x Withdrawal	0.30	0.06	1.87 [†]		
	R = .49		R ² _{Adj} = .14		F = 2.49*

* $p < 0.05$ ** $p < 0.01$ [†] $p < 0.10$

resolved their conflicts, they were more likely failed to specify which solution they would implement ($Beta = .38, t = 2.95, p < .05$). That is, they appeared confident that the conflict had been resolved, but were vague in expressing their strategy. At step 4, a trend for the interaction term was revealed, accounting for 5.6% of the variance. As illustrated in Figure 5, dyads with mothers who were both high on Aggression and Withdrawal were also more likely to resolve their conflicts by failing to specify which solution they would implement ($Beta = .30, t = 1.87, p = .068$). Maternal risk status did not predict the manner of resolution. However, resolution strategies were predicted by Maternal Education. In the regression examining Dyadic Resolution, the hierarchical regression accounted for 19.1% (8.8% adjusted) of the total variance (Table 19). At Step 2, Maternal Education emerged as a significant predictor, accounting for 7.8% of the variance. Dyads with mothers who were more highly educated were more likely to resolve their conflicts by participating together in the decision-making process ($Beta = .32, t = 2.10, p < .05$).

Discussion

The present study was designed to investigate the contribution of maternal childhood risk status to the prediction of mother-child social problem-solving strategies across three stages of problem-solving: Problem Definition, Solution Generation, and Decision-Making. The results partially supported the hypotheses and highlighted distinct patterns of responding to mother-child interpersonal conflicts for mothers with childhood histories of social withdrawal and those with both histories of aggression and withdrawal. Furthermore, findings from the present study indicate that maternal risk does not impair mother-child problem-solving skills uniformly across the three stages of problem-solving that were investigated. Rather, it appears that, particularly in children, certain problem-

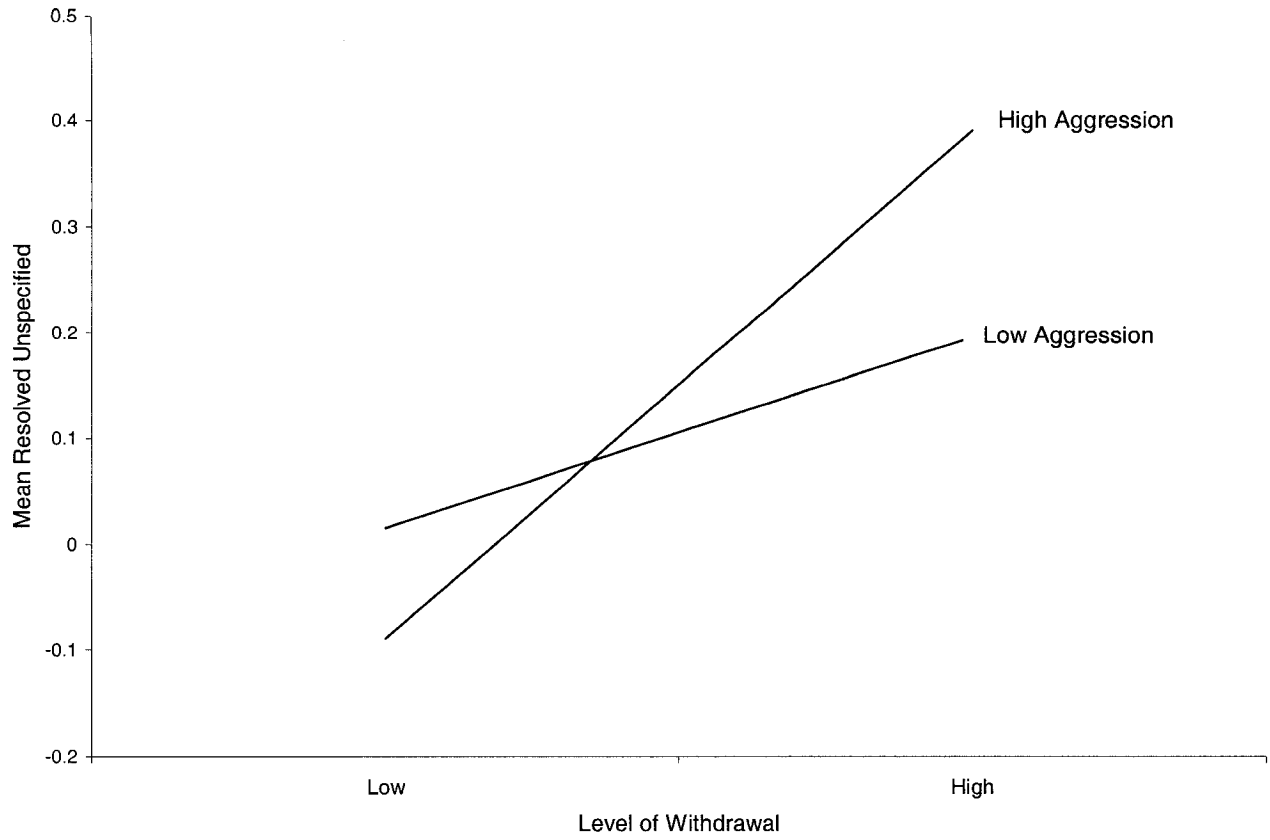


Figure 5. Mean Number of Resolved Unspecified as a Function of Maternal Risk

Table 19

Maternal Childhood Levels of Aggression and Social Withdrawal and Dyadic Resolution (N=57)

Variables	Beta	sr ²	T	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.04	1.12
Childhood Aggression	0.19	0.03	1.37		
Childhood Withdrawal	0.10	0.01	0.70		
<u>Step 2</u>				0.08*	4.43*
Childhood Aggression	0.26	0.06	1.88 [†]		
Childhood Withdrawal	0.23	0.04	1.56		
Maternal Education	0.32	0.08	2.10*		
<u>Step 3</u>				0.04	1.22
Childhood Aggression	0.24	0.05	1.71 [†]		
Childhood Withdrawal	0.31	0.07	1.98		
Maternal Education	0.36	0.09	2.25*		
Child Age	0.15	0.02	0.98		
Child Gender	0.19	0.03	1.39		
<u>Step 4</u>				0.03	1.67
Childhood Aggression	0.11	0.01	0.63		
Childhood Withdrawal	0.29	0.06	1.81		
Maternal Education	0.34	0.08	2.12*		
Child Age	0.14	0.02	0.95		
Child Gender	0.22	0.04	1.568		
Childhood Aggression x Withdrawal	0.21	0.03	1.29		
	R = .44		R ² _{Adj} = .09		F = 1.85

* $p < .05$, [†] $p < 0.10$

solving skills are impaired while others seem adequate. For example, contrary to what was predicted, maternal histories of aggression and social withdrawal did not negatively affect the depth to which mothers or their children described the nature of their conflict, as determined by the total number of factual descriptions, personal concerns, goals or causes stated. It may be that given their explicit instruction to 'discuss' their conflict, mother-child dyads were prompted to define their problem in more depth than in real-life situations. However, it may also be that mothers who were either socially withdrawn, aggressive, or both in childhood, as well as their children, are capable of defining their social problem in a seemingly effective way. If so, this finding has important implications given that the ability to clearly define and understand one's interpersonal conflicts is considered to be a crucial precursor to generating effective solutions (D'Zurilla & Goldfried, 1971). Yet, both effective and ineffective problem-solving strategies emerged during the solution generation stage, indicating that, at least in this sample, one stage of problem-solving is not necessarily directly related to another.

Specifically, contrary to what was hypothesized, effective problem-solving abilities were displayed by children of mothers with histories of social withdrawal as well as those with both aggression and social withdrawal; these children generated more solutions overall. Many studies have shown a positive relationship between the ability to generate numerous and varied solutions and social competence (Mize & Cox, 2001; Shure & Spivack, 1972, 1979). However, findings are mixed, with some studies reporting equal facility in the skill of generating solutions between children with poor social competence and comparison groups (Fischler & Kendall, 1988; Guerra & Slaby, 1989).

Similarly, findings from the current investigation further call into question the relevance of examining the quantity of solutions, particularly within a high-risk intergenerational framework. Thirty years after mothers were identified as being highly aggressive and/or socially withdrawn, their ability to generate numerous and varied solutions, as well as their children's, does not appear to be impaired when resolving mother-child conflicts. Yet, the present findings underscored the importance of examining the quality of solutions in two important ways. Firstly, children of mothers rated as highly aggressive and socially withdrawn in childhood, as well as the mothers themselves, were more likely to generate unsophisticated solutions. These solutions were those that lacked clarity, elaborations, consequential thinking, foresight, and/or were unrealistic. Secondly, children of mothers with childhood histories of both aggression and social withdrawal were more likely to generate Antisocial solutions. These solutions included: 1) emotionally aggressive and unassertive strategies (i.e. socially excluding others or oneself from the situation), as well as 2) punishments or aggressive, direct confrontation. As the problem-solving literature is largely focused on aggressive children, and not those who also displayed social withdrawal, comparisons to other studies are limited to this population. However, these findings are strongly consistent with previous findings which indicate that children with behavioural difficulties generate solutions that are less effective and appropriate as well as cognitively less sophisticated (Mott & Krane, 1994; Shure, & Spivack, 1972). Moreover, children who are aggressive or display externalizing problems have repeatedly been shown to generate more antisocial or aggressive solutions (Dodge, Pettit, & Bates, 1994; Root & Jenkins, 2005; Winsler et al., 1999), as was found in the current investigation. Some have argued that, although the

ability to generate a variety of solutions may provide an important repertoire from which to choose from, a child who generates mainly poorly sophisticated and/or antisocial solutions will likely choose an ineffective and less pro-social response (Dodge, 1980; Slaby & Guerra, 1988; Youngstrom, et al., 2000). Thus, findings from the current investigation support the argument that the quality of solutions is important and relates to social competence.

Given the importance of the quality of solutions to effective social problem-solving, the results from the current study are especially revealing as they may suggest a possible pathway to the transfer of risk from parent to child for children of mothers who were aggressive and socially withdrawn in childhood. In particular, these children appeared to mirror their mothers in two ways. Firstly, both mothers who were aggressive and withdrawn mothers and their children generated more poorly sophisticated solutions. Secondly, these children proposed solutions that closely resembled their mothers' childhood passive-aggressive tendencies. Caspi and Elder's (1988) model of "direct" transmission argues that children emulate their parents when interacting with them. Given that mothers with childhood histories of aggression and withdrawal likely have faced numerous negative psychosocial outcomes (e.g., lower intelligence and poor peer relations; Serbin, Stack, & Schwartzman, 2000), it is not surprising that their ability to develop sophisticated thinking when generating solutions may have been hindered. That their children also tended to generate unsophisticated solutions suggests that problem-solving deficiencies persist into adulthood, and are mirrored in offspring. Furthermore, it may be that children of mothers who were both aggressive and socially withdrawn in childhood view aggression and withdrawal as appropriate means to resolve conflicts,

particularly when problem-solving with their own mothers who may still exhibit these behaviours.

Notably, only mothers who were both aggressive and withdrawn in childhood and their children demonstrated poor quality in their solutions. This finding indicates that the interaction of *both* aggression and social withdrawal in childhood predicts ineffective problem-solving abilities during the Solution Generation stage. This is surprising given that mothers with childhood histories of aggression have previously been found to be less cognitively stimulating when interacting with their children, and their children in turn have been reported to have lower intelligence scores (Saltaris, 2004). In addition, mothers with childhood histories of social withdrawal have demonstrated less responsiveness towards their children in the Concordia study (Serbin, Stack, & Schwartzman, 2000), possibly suggesting less stimulation during mother-child interactions. As a result of these earlier findings, it was expected that mothers who were aggressive or withdrawn in childhood, as well as their children, would generate fewer and less sophisticated solutions, as well as more antisocial ones, particularly in dyads with aggressive mothers. However, previous research from the Concordia study has also demonstrated that the combination of both aggression and withdrawal leads to worst outcomes for mothers and the chances of negative outcomes for children are increased (Serbin, Stack, & Schwartzman, 2000; Serbin et al., 2004; Root & Jenkins, 2005). Mothers who were both highly aggressive and socially withdrawn towards their peers may have experienced negative social interactions and peer rejection more frequently than mothers who were either aggressive or withdrawn. As such, their capacity to learn competent problem-solving skills may have been impaired more so than mothers who were either aggressive

or socially withdrawn in childhood. The findings from the present study appear to support this possibility.

Despite demonstrating effective solution generating skills, evidence for 'direct' transmission may have also been found for children of mothers with childhood histories of social withdrawal. As anticipated, these children generated more autonomous solutions, demonstrating a desire to resolve their social conflicts in a solitary fashion. Continuity in social withdrawal into adulthood has been previously demonstrated in the Concordia study. For example, mothers who were withdrawn in childhood have manifested more ignoring as well as less responsive and supporting behaviours towards their children when interacting with them (Serbin, et al., 2002). It is possible therefore that through this disengaged maternal style mothers encouraged their children to expect little maternal assistance when resolving mother-child interpersonal conflicts.

A disengaged or less active problem-solving style was found in dyads with socially withdrawn mothers during decision-making, and a similar tendency was also found in dyads with aggressive and withdrawn mothers, providing more evidence for continuity. Although they were more likely to end the task without resolving their conflict, socially withdrawn mothers as well as both aggressive and withdrawn mothers and their children more often failed to specify which solution to implement. That is, these dyads were vague and only demonstrated a 'sense' of resolution rather than solving their conflict by applying concrete strategies. These findings suggest that maternal childhood withdrawal, and to a lesser extent, maternal childhood aggression and withdrawal, predicts less structure and guidance during decision-making, making it less likely for effective resolution to actually occur.

It is puzzling however that maternal aggression did not predict any of the dependent variables. Given the large body of research indicating that aggressive children generate fewer and less sophisticated solutions (Evans & Short, 1991; Lochman & Lampron, 1986; Mize & Cox, 2001; Shure & Spivack, 1972), as well as the finding that aggression is a stable trait (Keltikangas-Jarvinen, 2001; Patterson, 1982), it was expected that mothers who were aggressive as children would also display ineffective problem-solving with their children. The current results indicate that the presence of childhood histories of maternal social withdrawal either exhibited on its own or in combination with histories of aggression is necessary for poor problem-solving strategies to emerge in either mothers or their children. It may be that social withdrawal acts as a way of restricting the number of social interactions a child engages in, and as such, greatly diminishes opportunities to improve social skills. This may be particularly true of mothers who were both aggressive and withdrawn, as these two combined may have elicited even more peer rejection. Another possibility is that, despite efforts to code problem-solving strategies in a sufficiently descriptive and valid manner, the coding scheme used in the present study did not capture all relevant behaviors.

Embedded within this high-risk sample were mothers who were more educated than others. These more highly educated mothers discussed the nature of their conflict in more depth with their children overall, providing them with greater insight into the mothers' subjective understanding of the conflict. In the following problem-solving stage, their children tended to generate many solutions as well as more sophisticated ones, demonstrating strong problem-solving abilities. During the decision-making process, dyads with more educated mothers more often resolved their conflict dyadically; they

participated collaboratively in choosing which solution to implement. These findings support a well established finding in the literature that maternal education can be a significant protective factor against negative outcomes in high-risk samples (Jones, Rickel, & Smith, 1980; Nilholm & Saljo, 1996). Interestingly, educated mothers were more likely to propose Overt Antisocial solutions to their children. Although these solutions included direct confrontation with varying degrees of hostility, most dyads referred to punishments. Consequently, the finding may suggest a greater use of punishment by educated mothers, or a more assertive resolution style.

In addition to maternal risk and education, child age and gender also contributed to mother-child social problem-solving. Mothers with older children, older children themselves as well as girls, discussed the nature of their conflict in more depth, suggesting a desire for their subjective view to be expressed and understood. Furthermore, mothers were more likely to propose Overt Antisocial solutions when their children were older. This finding may indicate greater levels of conflict in dyads with children who are more closely approaching adolescence. This is consistent with previous studies (Riesch et al., 2000). Interestingly, although girls described their conflict in greater length than boys, they were more likely to generate poor solutions. Thus, they appeared to have difficulties proposing clear and realistic solutions with elaborations. Overall, these results are indicative of potential gender differences in the social problem-solving abilities of children in middle childhood; however, further research is warranted. Furthermore, the findings underscore how cognitive skills and social competence increase with age.

Although several key findings were revealed, certain limitations should be considered. Firstly, the context used in the present study to examine mother-child social problem-solving abilities (i.e. mother and child responses to a conflict questionnaire), while much more valid and less biased than self-report data, nonetheless cannot be equated to in vivo mother-child conflict problem-solving. In particular, dyads were asked to discuss their conflicts while being videotaped and, most likely, in a somewhat relaxed manner. Consequently, dyads may have understated their problem or responded more positively and with more depth than in real-life situations. Secondly, with the exception of the decision-making stage, mother-child problem-solving strategies were analyzed separately. Therefore, the results could not address causality, making it impossible to infer with certainty that children's type and sophistication of their solutions were directly related to their mothers' strategies. Nevertheless, the present investigation provided unique contributions to the social problem-solving literature and high-risk populations. In particular, distinct problem-solving patterns as a function of histories of maternal risk were highlighted. Children of withdrawn mothers displayed adequate problem-solving strategies in the first two stages, as shown by their ability to communicate their subjective understanding of their conflict in a seemingly effective manner, as well as generate numerous solutions. However, they were less effective during the decision-making stage due to their indecisiveness over which solution to implement, suggesting difficulties in problem resolution. In contrast, although their children generated many solutions, mothers with histories of aggression and withdrawal and their children displayed poor problem-solving abilities by generating more unsophisticated solutions as well as more antisocial ones. Given the negative relationship that has been shown between generating

less effective and hostile solutions and social competence (Fischler & Kendall, 1988; Guerra & Slaby, 1989), the findings seem to indicate that children of aggressive and withdrawn mothers may be particularly at risk for later behavioural difficulties.

Moreover, they also tended to be vague when selecting the solution to implement during the Decision-Making stage. Thus, dyads with aggressive and withdrawn mothers displayed poor problem-solving skills in two of the three stages investigated.

Surprisingly, maternal childhood histories of aggression was not a significant predictor, suggesting that aggression alone may not be sufficient in impairing mother-child social problem-solving skills, at least in the manner investigated in the current study.

Moreover, the findings may provide evidence for 'direct' transmission.

Specifically, children of withdrawn mothers generated more solitary solutions, thereby displaying similar tendencies as their mothers did in childhood. Likewise, children of aggressive and withdrawn mothers generated more passive-aggressive solutions. These findings suggest that children may emulate their mothers' childhood behavioural problems reflected in their problem-solving strategies and use them when resolving interpersonal conflicts. Although more longitudinal studies need to be conducted to confirm this possibility, the findings are important because problem-solving deficiencies are correlated with poor social competence, aggression, academic difficulties, as well as delinquency (Dodge, 1993; Lochman & Lampron, 1986; Shure & Spivack, 1982).

Findings from the present study also underscore the importance of maternal education in potentially mediating the effects of negative psychosocial outcomes in high-risk populations, revealing itself once again to be a crucial protective factor. Moreover, given that middle-childhood has been largely neglected in the literature, the knowledge gained

from this study has added to our understanding of the socio-cognitive abilities and problem-solving skills of children aged 9-13. Middle childhood is a developmental period fraught with its own challenges, such as transition to high school, and should be investigated more thoroughly.

Evidently, there are numerous directions that future research could take as the relation between mother-child social problem-solving abilities and socio-emotional and cognitive development has yet to be fully understood. The results from the current study suggest that social learning and parental modeling may be one of the processes underlying the intergenerational transfer of poor problem-solving skills and social difficulties. One direction for future research would be to explore the bi-directional nature of mother-child social problem-solving using sequential analyses. Doing so would enable inferring causality with more certainty and tease apart the ways in which mothers and children influence each other and co-construct their problem-solving strategies to achieve problem resolution. It would also be interesting to directly compare mother-child social problem-solving across different tasks, such as solving hypothetical problems versus personal conflicts, as well as across social contexts, such as with peers or siblings. These comparisons would explore consistencies and variations in dyadic problem-solving abilities as well as examine how social relationships impact each other. This would be particularly worthwhile if methods similar to those used in the current study were employed, namely direct observations and comprehensive problem-solving coding schemes.

Although many research questions still need to be addressed, findings from the current study expanded our theoretical and empirical knowledge, and have important

applied implications. That is, the results lend support to the development and implementation of social skills training programs that emphasize the *quality* of solutions generated by children who are at-risk for behavioural difficulties. Furthermore, the findings draw attention to the importance of addressing the process of problem-solving. For example, it may be important to coach socially withdrawn children to be more decisive during problem resolution, and help aggressive and socially withdrawn children to improve the level of sophistication of their solutions, encourage them to generate more prosocial solutions, as well as display slightly more decisiveness during decision-making. High-risk children differed in their problem-solving deficiencies as a function of their mothers' histories of behavioural problems; as a consequence, the current study highlights the importance of taking into account contextual and familial factors when training children to develop better social skills. Similarly, as children in the present study appeared to model many of their mothers' behaviours, the findings demonstrate the need for parenting programs to help high-risk parents develop better problem-solving skills.

Overall, these findings indicate that maternal childhood histories of social withdrawal as well as both aggression and withdrawal are inextricably linked to social problem-solving. In particular, they lend support to the continuity of risk whereby mothers with histories of social withdrawal as well as both aggression and social withdrawal display less sophisticated problem-solving strategies. These less skillful strategies are then modeled by their children, highlighting the potential for a direct pathway to the transmission of risk.

References

- Arsenio, W., & Cooperman, S. (1996). Children's conflict-related emotions: Implications for morality and autonomy. In Killen, M. (Ed.), *Children's autonomy, social competence, and interactions with adults and other children: Exploring connections and consequences* (pp. 25-39). San Francisco, CA, US: Jossey-Bass.
- Baumrind, D. (1989) Rearing competent children. In W. Damon (Ed.), *Child development today and tomorrow* (pp. 349-178). San Francisco, CA, USA: Jossey-Bass.
- Bloomquist, M. L., August, G. J., & Brombach, A. M. (1996). Maternal facilitation of children's problem solving: Relation to disruptive child behavior and maternal characteristics. *Journal of Clinical Child Psychology, 25*(3), 308-316.
- Cairns, R. B., Cairns, B. D., & Xie, H. (1998) Paths across generations: Academic competence and aggressive behaviors in young mothers and their children. *Developmental Psychology, 34*(6), 1162-1174.
- Capaldi, D. M., & Clark, S. (1998). Prospective family predictors of aggression toward female partners for at-risk young men. *Developmental Psychology, 34*(6), 1175-1188.
- Caspi, A. & Elder, G. H. Jr. (1988). Childhood precursors of the life course: Early personality and life disorganization. In E. M. Hetherington, R. M. Lerner, M. Perlmutter (Eds.), *Child development in life-span perspective* (pp. 115-142). Hillsdale, NJ, England: Lawrence Erlbaum Associates, Inc.
- Chang, E. C., Downey, C. A., & Salata, J. L. (2004). Social Problem Solving and Positive Psychological Functioning: Looking at the Positive Side of Problem Solving. In E.

- C. Chang, T. J. D'Zurilla, & L. J. Sanna (Eds.), *Social problem solving: Theory, research, and training* (pp. 99-116). Washington, DC: American Psychological Association.
- Cooperman, J. M. (1996). *Maternal aggression and withdrawal in childhood: Continuity and intergenerational risk transmission*. Unpublished Master's thesis, Concordia University, Montreal, Quebec, Canada.
- Coyl, D. D., Roggman, L. A., & Newland, L. A. (2002). Stress, maternal depression, and negative mother-infant interactions in relation to infant attachment. *Infant Mental Health Journal: Special issue: Early Head Start*, 23(1-2), 145-163.
- Dix T., & Branca, S. H. (2003). Parenting as a goal-regulation process. In L. Kuczynski (Ed.), *Handbook of Dynamics in Parent-Child Relations*. (pp.167-187). Twin Oaks, Ca: Sage.
- Dodge, K. A. (1980). Social cognition and children's aggressive behavior. *Child Development*, 51(1), 162-170.
- Dodge, K. A. (1993). Social-cognitive mechanisms in the development of conduct disorder and depression. *Annual Review of Psychology*, 44, 559-584.
- Dodge, K. A., Pettit, G. S., & Bates, J. E. (1994) Socialization mediators of the relation between socioeconomic status and child conduct problems. *Child Development: Special issue: Children and poverty*, 65(2), 649-665.
- D'Zurilla, T. J., & Goldfried, M. R. (1971). Problem solving and behavior modification. *Journal of Abnormal Psychology*, 78(1), 107-126.
- Edelstein, B. A., Couture, E., Cray, M., Dickens, P., & Lusebrink, N. (1980). Group training of problem-solving with psychiatric patients. In D. Upper & S. M. Ross

- (Eds.), *Behavioral group therapy, 1980: An annual review* (pp. 85 -102).
Champaign, IL: Research Press.
- Erikson, E. H. (1964). *Childhood and society*. Oxford, England: W. W. Norton.
- Evans, S. W., & Short, E. J. (1991). A qualitative and serial analysis of social problem solving in aggressive boys. *Journal of Abnormal Child Psychology, 19*(3), 331-340.
- Fischler, G. L., & Kendall, P. C. (1989). Social cognitive problem solving and childhood adjustment: Qualitative and topological analyses. *Cognitive Therapy and Research, 12*(2), 133-153.
- Freund, L. S. (1990). Maternal regulation of children's problem-solving behavior and its impact on children's performance. *Child Development, 61*(1), 113-126.
- Grunzeweig, N. (2003). *Influences of context and age on maternal request strategies and child compliance and noncompliance in a high-risk intergenerational sample*.
Unpublished Master's thesis, Concordia University, Montreal, Quebec, Canada.
- Guerra, N. G., & Slaby, R. G. (1989). Evaluative factors in social problem solving by aggressive boys. *Journal of Abnormal Child Psychology, 17*(3), 277-289.
- Guerra, N. G., & Slaby, R.G. (1990). Cognitive mediators of aggression in adolescent offenders: II. Intervention. *Developmental Psychology, 26*(2), 269-277.
- Haskett, M. E. (1990). Social problem-solving skills of young physically abused children. *Child Psychiatry & Human Development, 21*(2), 109-118.
- Hussian, R.A., & Lawrence, P.S. (1981). Social reinforcement of activity and problem-solving-training in the treatment of depressed institutionalized elderly patients. *Cognitive Therapy and Research, 5*, 57-69.

- Jones, D. C., Rickel, A. U., & Smith, R. L. (1980). Maternal child-rearing practices and social problem-solving strategies among preschoolers. *Developmental Psychology*, *16*(3), 241-242.
- Keltikangas-Järvinen, L. (2001). Aggressive behaviour and social problem-solving strategies: A review of the findings of a seven-year follow-up from childhood to late adolescence. *Criminal Behaviour and Mental Health: Special issue: Social Problem Solving and Offenders*, *11*(4), 236-250.
- Ledingham, J. E. (1981). Developmental patterns of aggressive and withdrawn behavior in childhood: A possible method for identifying preschizophrenics. *Journal of Abnormal Child Psychology*, *9*(1), 1-22.
- Leseman, P. P. M., & Sijtsling, F. F. (1996). Cooperation and instruction in practical problem solving: Differences in interaction styles of mother-child dyads as related to socio-economic background and cognitive development. *Learning and Instruction*, *6*(4), 307-323.
- Lochman, J. E, & Lampron, L. B. (1986). Situational social problem-solving skills and self-esteem of aggressive and nonaggressive boys. *Journal of Abnormal Child Psychology*, *14*(4), 605-617.
- Miller, S. R., Murry, V. M., & Brody, G. H. (2005). Parents' problem solving with preadolescents and its association with social withdrawal at school: Considering parents' stress and child gender. *Fathering*, *3*(2), 147-163.
- Mize, J. & Cox., R.A. (2001). Social knowledge and social competence: Number and quality of strategies as predictors of peer behavior. *The Journal of Genetic Psychology*, *151*(1), 117-127.

- Mott, P., & Krane, A. (1994). Interpersonal cognitive problem-solving and childhood social competence. *Cognitive Therapy and Research, 18*(2), 127-141.
- Nastasi, B. K., & Clements, D. H. (1991). Research on cooperative learning: Implications for practice. *School Psychology Review, 20*(1), 110-131.
- Nilholm, C., & Säljö, R. (1996). Co-action, situation definitions and socio-cultural experience: An empirical study of problem-solving in mother-child interaction. *Learning and Instruction, 6*(4), 325-344.
- Olson, S. L., Bates, J. E., & Bayles, K. (1990). Early antecedents of childhood impulsivity: The role of parent-child interaction, cognitive competence, and temperament. *Journal of Abnormal Child Psychology, 18*(3), 317-334.
- Patterson, G. R. (1982). *Coercive family process*. Eugene, OR: Castalia.
- Pekarik, E. G., Prinz, R. J., Liebert, D. E., Weintraub, S., & Neale, J. M. (1976). The Pupil Evaluation Inventory: A sociometric technique for assessing children's social behavior. *Journal of Abnormal Child Psychology, 4*, 83-97.
- Pianta, R. C., & Harbers, K. L. (1996). Observing mother and child behavior in a problem-solving situation at school entry: Relations with academic achievement. *Journal of School Psychology, 34*(3), 307-322.
- Portes, P. R. (1991). Assessing children's cognitive environment through parent-child interactions. *Journal of Research & Development in Education, 24*(3), 30-37.
- Richard, B. A., Dodge, K. A. (1982). Social maladjustment and problem solving in school-aged children. *Journal of Consulting and Clinical Psychology, 50*(2), 226-233.

- Riesch, S. K., Bush, L., & Nelson, C. J. (2000). Topics of conflict between parents and young adolescents. *Journal of the Society of Pediatric Nurses, 5*(1), 27-40.
- Root, C. A., & Jenkins, J. M. (2005). Maternal appraisal styles, family risk status and anger biases of children. *Journal of Abnormal Child Psychology, 33*(2), 193-204.
- Rotheram, M. J. (2001). Children's social and academic competence. *Journal of Educational Research, 80*(4), 206-211.
- Saltaris, C., Serbin, L. A., & Stack, D. M. (2004). Nurturing cognitive competence in preschoolers: A longitudinal study of intergenerational continuity and risk. *International Journal of Behavioral Development, 28*(2), 105-115.
- Schwartzman, A. E., Ledingham, J. E., & Serbin, L. A. (1985). Identification of children at risk for adult schizophrenia: A longitudinal study. *International Review of Applied Psychology, 34*(3), 363-380.
- Serbin, L. A., Cooperman, J. M., & Peters, P. L. (1998). Intergenerational transfer of psychosocial risk in women with childhood histories of aggression, withdrawal, or aggression and withdrawal. *Developmental Psychology, 34*(6), 1246-1262.
- Serbin, L., Stack, D. M., De Genna, N., Grunzeweig, N., Temcheff, C. E., Schwartzman, A. E., & Ledingham, J. (2004). When aggressive girls become mothers: Problems in parenting, health, and development across two generations. In M. Putallaz, & Bierman, K. (Ed.), *Aggression, antisocial behavior, and violence among girls: A developmental perspective*. New York, NY: Guilford Press.
- Serbin, L. A., Stack, D. M., & Schwartzman, A. E. (2000). *Identification and prediction of risk and resiliency in high-risk preschoolers: An intergenerational study*. (Final

Report #6070-10-5/9515): Child, Youth, and Family Health Unit, Child and Youth Division, Health Canada.

- Serbin, L. A., Stack, D. M., & Schwartzman, A. E., Cooperman, J., Bentley, V., Saltaris, C. & Ledingham, J. E. (2002). A longitudinal study of aggressive and withdrawn children into adulthood: Patterns of parenting and risk to offspring. In R. Peters and R. McManon (Eds.), *The effects of parental dysfunction on children* (pp. 43-69). New York: Kluwer Academic/Plenum Publishers.
- Shure, M. B., & Spivack, G. (1972). Means-ends thinking, adjustment, and social class among elementary-school-aged children. *Journal of Consulting and Clinical Psychology, 38*(3), 348-353.
- Shure, M. B., & Spivack, G. (1979). Interpersonal cognitive problem solving and primary prevention: Programming for preschool and kindergarten children. *Journal of Clinical Child Psychology, 8*(2), 89-94.
- Shure, M. B., & Spivack, G. (1982). Interpersonal problem-solving in young children: A cognitive approach to prevention. *American Journal of Community Psychology, 10*(3), 341-356.
- Slaby, R. G., & Guerra, N. G. (1988). Cognitive mediators of aggression in adolescent offenders: I. Assessment. *Developmental Psychology, 24*(4), 580-588.
- Stack, D. M., Serbin, L. A., & Schwartzman, A. E. (2005). Girls' Aggression Across the Life Course: Long-Term Outcomes and Intergenerational Risk. In D. J. Pepler, K. C. Madsen, C. Webster, & K. S. Levene, Mahwah (Eds.), *The development and treatment of girlhood aggression. NJ, US: Lawrence Erlbaum Associates Publishers, 253-283.*

- Tisdelle, D. A., & St. Lawrence, J. S. (1986). Interpersonal problem-solving competency: Review and critique of the literature. *Clinical Psychology Review, 6(4)*, 337-356.
- Winsler, A., Diaz, R. M., & McCarthy, E. M. (1999). Mother-child interaction, private speech, and task performance in preschool children with behavior problems. *Journal of Child Psychology and Psychiatry, 40(6)*, 891-904.
- Youngstrom, E., Wolpaw, Jennifer, M., & Kogos, J. L. (2000). Interpersonal problem solving in preschool and first grade: Developmental change and ecological validity. *Journal of Clinical Child Psychology, 29(4)*, 589-602.

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
Consent Form

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

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

-Dale M. Stack, Ph.D.

Numéro d'identification:

Formulaire de consentement

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

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

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

Nom: _____
EN LETTRES MOULÉES

Date:

Signature:

Nom de l'enseignant/e:

Année:

Nom du directeur/de la directrice:

Nom de l'école:

Numéro de téléphone: (_____)
code régional

Adresse:

rue

_____ ville

_____ code postal

Appendix C

Full Protocol

1)Health Questionnaire Interview

Cortisol questionnaire

CORTISOL 1

Mere: blue

Enfant: red

- 1) Sors le de l'emballage en plastique et mets-le dans ta bouche (n'enlèves pas la mince couche de plastique qui le recouvre)
- 2) Mâche le pendant 30-45 secondes. Assure-toi qu'il est bien couvert de salive
- 3) Remplis le formulaire
- 4) Quand tu es sûr qu'il est remplie de salive, sors-le de ta bouche et remets le dans l'emballage en plastique en essayant de ne pas trop le toucher avec tes doigts.

2) Complétion du questionnaire sur les conflits : 5 à 7 minutes

- Voici une liste de thème à propos desquels les enfants et leurs parents sont souvent en désaccord ou en chicane. Nous voulons connaître jusqu'à quel point vous (mère et enfant) êtes en désaccord sur les sujets à la maison. Veuillez indiquer sur une échelle de 1 à 5 chacun des items de la liste où 1 = *Nous sommes toujours d'accord* et 5 = *Nous sommes toujours en désaccord*.

3)Jenga : 4 minutes

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

4)Interaction task: as long as they need and time it!

- Ce que nous allons faire maintenant est différent de ce que nous venons de faire
- _____ (nom de l'enfant) devra lire une courte histoire. Après l'histoire _____ (nom de l'enfant) devra répondre à quelques questions de discussion qui se trouvent sur les cartes qui suivent. Ensuite, votre but est de discuter de l'histoire et d'élaborer ensemble avec lui/elle le plus possible sur ses réponses. Soyez certains de bien répondre à chaque question avant de continuer à la prochaine.

CORTISOL 2 : après 6 minutes

5)Conflict resolution task : 6 minutes

- Choisir le sujet qui possède le plus élevé et ou les scores qui, chez la mère et l'enfant, sont très semblable.

- Je t'ai demandé tout à l'heure de remplir un questionnaire afin d'identifier certains thèmes qui peuvent causer des problèmes dans votre famille. Après avoir regardé chacune de vos réponses, j'ai choisi un sujet qui semble être l'objet d'une mésentente entre vous et qui ferait l'objet d'une discussion intéressante.
- Le sujet que vous avez identifié est _____. J'aimerais que vous preniez les 6 prochaines minutes pour discuter ensemble ce sujet. Il est important que vous participiez tous les deux.
- Je vais maintenant vous laisser seul est je vais revenir dans 6 minutes.
- Avez-vous des questions?
- Vous pouvez commencer.

CORTISOL 3 : après 6 minutes

6) Harter & PDI

CORTISOL 4 : après 10 minutes

7) SSRS, PEI, SSS-II, Service Questionnaire

CORTISOL 5 : après 10 minutes

HOME

Appendix D

Mother Conflict Questionnaire

Questionnaire sur les conflits
(parent)

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

1. Tâches ménagères / aide à la maison.	1	2	3	4	5
2. Travail à l'école / devoirs, notes ou mauvaise conduite à l'école.	1	2	3	4	5
3. Inimitié / être capable de garder certaines choses pour lui/elle-même.	1	2	3	4	5
4. Écouter / respecter les demandes et les conseils de ses parents.	1	2	3	4	5
5. L'heure à laquelle l'enfant doit être à la maison le soir.	1	2	3	4	5
6. Apparence physique / façon dont il/elle s'habille.	1	2	3	4	5
7. L'heure du coucher.	1	2	3	4	5
8. Passer du temps ensemble en temps que famille.	1	2	3	4	5
9. Les ami(e)s de mon enfant / les gens avec qui il/elle se tient.	1	2	3	4	5
10. S'entendre avec son/ses frère(s) et sa/ses soeur(s).	1	2	3	4	5
11. L'argent.	1	2	3	4	5
12. Parler au téléphone / regarder la télévision.	1	2	3	4	5
13. Garder sa chambre en ordre.	1	2	3	4	5
14. Prendre un bain / une douche.	1	2	3	4	5
15. _____	1	2	3	4	5
16. _____	1	2	3	4	5
17. _____	1	2	3	4	5
18. _____	1	2	3	4	5

Appendix E

Child Conflict Questionnaire

Numéro D'identification: _____

Questionnaire sur les conflits
(Enfant)

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

1. Mes tâches ménagères / aide à la maison.	1	2	3	4	5
2. Mon travail à l'école / devoirs, notes ou mauvaise conduite à l'école.	1	2	3	4	5
3. Mon inimitié / être capable de garder certaines choses pour moi.	1	2	3	4	5
4. Écouter / respecter les demandes et les conseils de mes parents.	1	2	3	4	5
5. L'heure à laquelle je dois être à la maison le soir.	1	2	3	4	5
6. Mon apparence physique / la façon dont je m'habille.	1	2	3	4	5
7. L'heure à laquelle je dois me coucher.	1	2	3	4	5
8. Passer du temps ensemble en temps que famille.	1	2	3	4	5
9. Mes ami(e)s / les gens avec qui je me tiens	1	2	3	4	5
10. M'entendre avec mon/mes frère(s) et ma/mes soeur(s).	1	2	3	4	5
11. L'argent.	1	2	3	4	5
12. Parler au téléphone / regarder la télévision.	1	2	3	4	5
13. Garder ma chambre en ordre.	1	2	3	4	5
14. Prendre un bain / une douche.	1	2	3	4	5
15. _____	1	2	3	4	5
16. _____	1	2	3	4	5
17. _____	1	2	3	4	5
18. _____	1	2	3	4	5

Appendix F

The Mother-Child Social Problem-Solving Coding Scheme

**The Mother-Child Social Problem-Solving Coding Scheme
(MCSPSCS):
A coding scheme for rating mother-child social
problem-solving strategies**

© Julie Martin, 2007

This coding system is designed to study the problem solving process of 9-12 year-old children and their mothers during two problem solving tasks of varying degrees of structure, and observe the sophistication and content of their strategies.

The two interaction contexts include: (1) an indefinite problem-solving task in which dyads respond to hypothetical social problems from vignettes, and (2) a six minute conflict task in which dyads discuss a personal social problem. For the purpose of the present study, only the six minute conflict task was coded.

Problem Solving Process

This scheme is divided into three sections based on three problem-solving stages. The three stages include: 1) Problem Definition, 2) Solution Generation, and 3) Decision-Making. The stages do not have to be in a particular order. Therefore, participants may begin by generating solutions before defining the problem. However, Decision-Making always occurs at the end of the task. In each section, the coder must identify who initiated the step as well as the contribution of each participant by way of verbal statements. Furthermore, each statement made by either participant related to one of the problem-solving stages is rated for sophistication and content.

It is recommended that the tapes be watched at maximum volume on a video monitor with high resolution (not a regular TV).

What not to code

Probes, such as *questions that encourage the participation of the other are not included, except when considering initiation. For example, 'as-tu fait ta chambre ce matin?', 'qu'est ce que t'en penses?' Also, talking about the question on the cards or what they mean are not to be coded. For instance, "toi tu ferais quoi?" or "la question te demande..." Furthermore, anything read from the vignette cards are not coded. Statements that have already been made by either participant (i.e. repeats) are ignored if they are repetitions. However, important elaborations on previous statements are included and coded as such (see below). Statements that are unrelated to the main conflict topic are to be ignored, unless a link has been made by a participant between one theme and another, and the unrelated discussion is used to explain the main theme. For example, if the topic in the conflict task is 'cleaning one's room' and the dyad begins to

discuss other chores as an example of what else is problematic, code the statements. However, the link must regard the child. Consequently, if a statement is made about another family member's habits, do not code them unless the child makes that link. For instance, a child says 'toi ta chambre est toujours défectueuse' (issue), and mother says 'parce que papa dort durant la journée'. Do not code the latter statement because it is unrelated to the child. Instead, the mother's answer would be coded as a reaction, specifically, 'Agree'. If there is no link whatsoever or reason to be discussing other topics do not code and ignore them. Any statement made to the experimenter are ignored. Decision-making statements such as 'on va faire ça' are relevant in the last step and not the first two. Cleaning one's room and house chores are 2 different topics. Only conflicts that have at least 3 statements are to be coded. Questions that contain more than one argument/thought are ignored, such as 't'aimerais-tu faire ___ ou ___?' Ignore sarcastic questions. For instance, 'tu garde toujours ta chambre en ordre?', or 'tu dis que je te demande jamais de faire ta chambre?' when it is obvious that the participant is in complete disagreement, and is teasing the other.

***Questions:** Certain questions do more than simply elicit the participant of the other. If a participant states an argument or opinion in the form of a question, code it as a statement. For instance, questions that have the following structures are included:

- Veux-tu avoir _____? (do you want) – usually goal
- T'aimerais _____? (would you like) – usually issue
- Préfèrais-tu _____? (would you prefer) – usually issue
- Est ce que tu fait _____? (do you do this) – usually descriptive
- Est ce que tu es comme _____? (are you like this) – usually descriptive
- Est-ce que tu trouves _____? (do you find) – issue

For example, 'tu trouves que ta soeur te manque du respect?' (an issue), or 't'aimerais te coucher à 11:30?' (a goal). Ignore any questions that contain vague references, such as 'ça' or 'le' (fais-tu ça, est ce que tu le fais avec tes amis?). Furthermore, if a question is followed by a full answer given by the other participant (more than a yes or no answer), code the answer rather than the probe. For instance, 'tu trouves que ta soeur te manque de respect?' mom asks, and child answers, 'oui, elle est toujours en train de me taquiner'. While the mother probed an issue, child answered fully with a description. In such cases, code the answer only as description. However, if a participant asks 't'aimerais te coucher à 11:30?' and the only answer is 'oui', code the question as a goal, and the reaction as agreed.

Statements: A *statement* is defined as an opinion, comment, or idea conveyed directly by verbal means in one or more phrases by a participant. For each statement uttered, the coder must examine if the content is related to one of the three steps. Repeats are ignored within each section, but are coded across the three steps. For instance, a participant says the same causal statement twice in the Problem Definition step, and then again in reference to a solution. The causal statement would be coded once for Problem Definition, and once as an attachment to the solution (to show elaboration for the sophistication of their solution).

* If a participant makes many statements at the same time that contain different codes, then each is coded separately. For example, *'ta chambre est sale parce que tu ranges pas assez'*. The statement *'ta chambre est sale'* is descriptive, while *'parce que tu range pas assez'* is a cause. Consequently, both statements would be coded separately. If a participant says a string of statements that are all the same code, then code them separately if they consist of different thoughts. For example, a child says all at once *"j'étais en train de jouer, mon amie est sorti, et elle a piler sur mon projet"*. While these are three descriptive codes, they are different in content and must be coded separately. However, if a child says *'j'étais en train de jouer, je jouais dans ma chambre, mon amie est sortie'* these would be coded as two statements (both descriptive) because the second is simply an elaboration on the first. This rule applies also to emotion appraisals whereby if a participant mentions different types of emotions (je serais fâché et triste), they must be coded separately.

Defining statements: Each statement is numbered. However, elaborations on statements that have already been suggested are given lettered bullets indicating that they are elaborations (1a, 2b...). The number indicates which statement they are based on (initial solution #2 for example), and the letter indicates which elaboration (a being the first elaboration). Elaboration must have significant and important added details, such as time or causal reference, explanations, or more descriptive data that is *different* from what has already been said. Elaborations are always given the same statement code of the original statement they are based on (i.e. descriptive, cause, issue, goal). *However, if the added statement is so different as to be a different code, code it separately.* For example, *'quand tu me dis d'aller me coucher, j'y vais pas'* and then the mother says *'parce que t'écoutes pas'*, code the two statements separately because the first is descriptive and the second causal. Also, if a participant says anything that contradicts the core statement, such as correcting oneself or disagreeing, than it must be coded separately.

1. Problem definition

Problem defined/ recognized: A dyad has identified an aspect of the problem when one or both participants have stated a problematic issue related to either the story from the vignettes or the conflict topic provided by the examiner, depending on the task. A coder must always ask whether the statement that is about to be coded explains an aspect of the problem in a way that will enable the coder to better understand the problem discussed. If a statement is mostly regarding the conversation, and not the conflict as it occurs in real life (or the vignette story), disregard.

Initiation: Coder must identify who initiated the problem definition step by identifying the participant who first began describing the problem, raising an issue, or discussing possible causes. For example, *"son ami a pilé sur son projet"*, *"ma chambre est sale"*. Also included are probes that elicit the beginning of the problem defining step, such as *'qu'est ce que est arrivé'*, *'pourquoi tu fais ces choses là'*. However, these probes are not coded, but simply used to determine initiation. Initiation does not simply entail who first

spoke, but rather who began discussing the following statements or asked a question that probed the other participant to begin speaking about this step.

Problem defining statements:

Descriptive: A factual statement that explicitly describes the problem or an aspect of the problem. For instance, what happens prior or during the problematic situation, or what might happen in the future (without being a goal). Any descriptions unrelated to the problem are not included, such as the cleanliness of another's room. However, if a link has been made between the main problem and another to illustrate a point, it is coded (see section 'What not to code' above). Examples of descriptive statements are : 'l'ami à brisé le projet', 'ma soeur crie', 'ta chambre est pas rangée', 'quand j'étais petite je faisais ça', 'j'ai beaucoup de cochonneries'. These statements are a factual description of the problem. They must not include causes. However, if a statement contains both a descriptive part as well as a cause, they are coded separately. For instance, 'ma chambre est sale, parce que j'ai pas le temps de ranger'. The first part is descriptive, and the second is causal.

Sophistication per statement

Poor: In the Problem Solving task, participant has made a mistake concerning the story such as altering the story or is extremely vague in their description. For instance, 'c'est moi et mes amis qui l'ont fait ce projet là' (mistake – child only), 'c'est le projet qui se brise' (project did not break on its own, what project ?), 'y'a un ami qui à marché sur un devoir' (what friend, what project ?). In the Conflict task, the descriptive statement is unspecific and/or vague, such as "she teases me or doesn't respect me", or "you were exaggerating", or 'je niase'. Also, chores that are vague in description, such as cleaning the stairs or cleaning the living room.

Good: Clear and specific, but some elaboration is missing. In the Problem Solving task, participant has made a correct and specific statement describing the story in the vignette, however is still missing some elaboration or added explanations. For instance, 'un projet d'école se brise', 'un ami est sortie', 'mon ami a pilé sur mon projet'. In the case of the Conflict task, participant makes specific statements that are clear, yet are still missing some detail for full understanding of the situation, or some elaboration or explanation. For instance, 'she said ___ to me', 'elle essaie toujours d'avoir le dernier mot', or naming certain chores around the house that the child does that are clear when stated, such as doing the bed, cleaning the bedroom, or washing the dishes.

Very good: Specific and clear with elaboration/detail, or very developed thinking (abstract, causal...). For instance, 'elle a pilé sur ton projet *en sortant de la sale de bain*', and 'un projet scolaire *pour lequel j'avais travaillé très fort*'. In the Conflict task, participant makes a detailed statement about the problem such as 'tu es dans ta chambre et ta soeur rentre donc vous commencer à vous chicaner pour rien', or provides addition explanation or elaboration including the 'Good' core description.

Issues / Emotions: A statement about how something makes the situation problematic without giving factual descriptions, how something bothers them about the problem, or an aspect of the problem that *concerns* them. Furthermore, any statement about what will

happen if the situation worsens in the future. It is not as factual as in Description, and has a qualitative adjective or emotion appraisal attached to the statement. For example, 'je sais pas quoi ranger', 'mon ami se sentirait triste', 'j'ai travaillé fort dessus', 'on a pas le choix, c'est la vie', or 'si ça continue il va avoir des bibittes'. Also included are emotion appraisals, such as 'je suis triste, fâché, tannée...', and 'ça c'est ben fatigant'. Also, any statement saying that something is 'plate', 'fatigant', or 'ça m'énerve'. For instance, 'c'est plate parce qu'on perd notre temps' is an issue statement. If a participant qualifies the problem in some way *and* provides an explanation, code the entire statement together as one issue.

* see the section on overlapping Causes and Issues below.

Sophistication per statement :

Poor: Participant provides a vague emotion appraisal, such as 'pas très content', 'c'est fatigant' or 'je me sentirais mal'. Also, elaborations are superficial and based on evident information or circular reasoning, such as 'je serais fâché parce qu'il a brisé mon projet', or 'il serait triste parce que je suis fâché'. Furthermore, concerns are not realistic and/or vague such as 'tu devrais tout faire ici'. Comparing one's own problem with another (such as 'you're worse at that than me') is also poor. Also, saying that something is boring without giving explanation is poor ('c'est plate').

Good: Participant provides specific emotion appraisals (anger, happiness, sadness, disappointment, and also 'mal à l'aise'), and the elaborations are clear but lack detail. Also, participant states how others might feel or be affected by the problem without giving much detail or elaboration. For instance, 'triste parce que j'ai travaillé fort', 'il m'aurait chicaner', and 'il serait gêné d'avoir brisé tes choses', 'déçu parce que j'aurais remarqué que j'ai pilé dessus', or 'pour lequel elle avait travaillé fort dessus', 'je peux pas tout faire ici', 'je travaille, j'ai pas le temps de faire ta chambre', or 'j'aime pas faire ma chambre parce que c'est plate...'

Very good: Participant provides specific emotions as well as elaborations that have more detailed explanations, or long-term thinking. For instance, 'triste parce que j'aurais peut-être une mauvaise note', 'triste parce qu'il faudrait tout recommencer' or an idea relating to an abstract concept, such as friendship. Similarly in the Conflict task, 'si ta chambre est sale, ça va attirer des bibittes et ça va être très désagréable', or 'quand tu marches la nuit, tu pourrais te faire mal parce qu'il y a trop de choses à terre'. Also, any statement whereby the participant states how others are affected by the problem (other than the two participants in the task) with detail and/or elaboration. For instance, 'elle ne doit pas aimer ça que ma chambre soit en désordre'.

Goal setting: Desires, wishes or expectations concerning a participant's behavior or situation without saying how one would get to the end point. The end point or what the dyad believes would be a good conclusion to their conflict. The end towards which effort is directed. Any statement that resembles or is very close to the desired situation is a goal, even though it may resemble a solution, or the participant believes it is a solution. Almost all statements that begin with 'arrête de....' are goals and not solutions. In other words, statements demanding the problematic behavior to stop are goals. For example, 'j'aimerais que tu fasses la vaisselle', or 'arrête de mettre tes affaires en dessous du lit',

and 'arrêter de crier'. Also included are orders or commands regarding the end point, such as 'il faut que tu fasses la vaisselle'. Goals that are extremely vague, such as 'many things would change' are also included. However, they are to be regarded as unsophisticated. Any goal stated by a participant must be related to the overall conflict topic. Consequently, if the conflict topic is getting the room cleaned, and the mother says 'arrête de crier avec ton frère', this statement is to be ignored completely. Therefore, it is always important to remember what the main topic is, or what the question on the vignette card is asking, in order to determine whether the goal is relevant.

* If a participant lists *expected* chores, these are to be considered Goals. If a participant lists chores that are being done already, these are to be considered Descriptive.

Sophistication per statement:

Poor: Goals which are unrealistic or extremely vague. For example, 'il faut faire chacun notre bout', 'plusieurs choses vont changer', 'il faut que tu m'aides', 'je vais essayer', 'faut faire un effort'...

Good: Goals which are realistic and specific, although a bit short and lacking detail. For example, 'je veux que ta chambre soit propre', 'arrête de crier', 'tout ce qui vient de ta chambre doit rester dans ta chambre', 'il y aura plus de bibittes', 'il va falloir que tu sois organiser'...

Very good: Goals which are realistic, specific, and have elaborations, explanations, or explain why they are important. For instance, 'tu dois avoir une chambre propre comme ça tu vas trouver ça beau', 'à un moment donné ça va être fait en 5 minutes et ça va être vite fait'.

***Whenever a participant says 'if you do ____, this will happen' and the latter part of the statement is a goal for the problem, code the first part as a solution and the second as a goal. However, also include the goal in the solution section for elaboration. For instance, 'si tu change ta personnalité, des choses vont changer, or 'si tu es plus gentil avec ton frère, lui aussi il serait plus gentil'.**

*** *Goals that resemble solutions: Goals are broader or can be abstract, whereas solutions are more specific and have some mention of method. Even vague mention of method are solutions. For instance, 'on va essayer' is a goal, whereas, 'on va essayer de se rammasser' is a solution (although poor) because the idea is to pick up after one self *regularly*. Goals often have the structure of 'Je veux, j'aimerais____', il faut ____, or arrête de ____.**

Causes: Statements about why the problem occurs or has occurred. Causes must explain the overall problem or an important aspect of the problem. For instance, 'c'est accidentel', 'ma soeur fait exprès pour me tanner' or 'ça me tente pas'. Most statements with 'parce que' are causes. Also, statements suggesting a cause and effect are included. For instance, a mother says 'quand il y a quelque chose qui fonctionne pas, tu cries et tu gueules.' In other words, the sentence follows 'when...., this happens' which of course must relate to the main problem. Any answer to the question 'why does this happen' is included as a cause, *no matter the format*. If a cause statement also includes a descriptive

statement (such as ‘ma chambre sale *parce que je sais pas comment la ranger*’), code the statement in two parts according to their respective codes unless they are repeats.

Sophistication per statement:

Poor: Causes are vague (such as ‘par exprès, c’est niaseux’), simple (such as just saying accidental or on purpose, or ‘elle a pas voulu le faire’), or unrealistic. Furthermore, elaborations are also lacking, such as ‘par exprès parce que sinon elle aurait pas pilé dessus’. Furthermore, causes are based on personality traits only (laziness) or putting responsibility on another for one’s own fault (ex: why do it when you’re there, or it’s my friends’ fault that my room is dirty). In the case of sibling conflict however, putting responsibility on the sibling is not Poor. Also, stating ‘I don’t know how to do it’ or ‘I don’t feel like it’, is also a poor cause.

Good: Causes are specific without giving reasons why. For instance, ‘not seeing the project’ or stating how it could have been done, such as ‘en accrochant’. Also, ‘I don’t have time’, ‘tu fais exprès pour taquiner ta soeur’...

Very good: In the Problem Solving task, elaborations contain a hypothetical scenario that was not written on the cards, such as ‘maybe there was so much stuff on the floor’, or ‘the project was behind the door’, or giving an explanation as to why the friend did not see the project, such as she was running to the bathroom, or walking too fast. In the conflict task, causes are given explanations or are detailed.

Overlapping categories and ambiguities:

Statements may sometimes resemble several categories at the same time, depending on the context of the dyad’s conversation, or what seems to be implied. In order to maintain stability across codes and objectivity, certain rules apply to determine which category an ambiguous statement belongs to.

1st: If a statement resembles a description as well as an issue, always code it as a Description statement, *unless the participant explicitly says it bothers them*. For instance, while ‘tu m’écoutes pas’ may sound like a concern, it is a Description because there is nothing stating that it bothers them. However, if the participant says ‘j’aime pas ça quand tu m’écoutes pas’, the statement becomes an issue because a concern has been expressed. In other words, an emotion has been included.

2nd: If a statement resembles a description and a cause, always code as a Description unless the participant begins their statement with ‘parce que’ (and the remainder of their sentences are causes to the problem), and a cause an effect is suggested. Also, always code a descriptive statement as a cause if one of the participants just asked ‘why does this occur’ and an answer is given to this question immediately afterwards. For example, mother asks ‘pourquoi il y a la chicane?’, and the child says ‘ma sœur est tanante’. That answer would be coded as a cause.

3rd: If a statement resembles an issue and a cause, always code as a Cause. For instance, mom says “(je veux pas que tu te perces les oreilles) à cause de l’image rebelle que ça projet’. While this is an issue for the mother, it also causes her to forbid her daughter to get her ears pierced. However, if a participant says only one appraisal on its own (such

as c'est plate, je m'ennuie, ça me fatigue), without starting with 'parce que' it is to remain an issue.

2. Solution Generation

Solution: A solution consists of any verbal statement made by either participant that is directly related to the problem and is a process that might enable them to achieve their main goal. If 'A' is the problem, and 'C' is the end goal, 'B' is the solution that would get them to 'C'. If the topic is cleaning the room, how would one achieve that end goal? Included are any statements in which the future is implied and some method is suggested. Simply stating that one must clean the room is not a solution (it is a goal). However, if a participant implies the future, such as 'tu pourrais faire ta chambre le matin' is a solution because it is future tense and includes the method of time. Other examples include 'si maman te montrait', 'tu pourrais me donner la vaisselle et moi je rangerais' because there is a mention of 'how'. Communication may also be a solution if a participant mentions that he or she would talk to the person (ex: 'je lui dirais...'). The content of the communication cannot be broken down into several solutions if it is said in one thought. Statements that start with 'il faut', such as saying "il faut faire ça" are goal setting, not solutions. If a participant repeats the same solution, it does not count as another solution, and must be dismissed. However, elaborations that provide qualitatively different information from the original solution are coded (see below).

* Solutions generated by the dyad that have been implemented in the past but did not work, or are not discussed in the present tense to suggest that it will be implemented again, are not to be coded in the solution generation section, but rather in the Problem Definition section in the form of a descriptive statement.

Initiation: The participant who first began generating solutions such as mother says 'on pourrait faire ça...' Also included are questions that probe the other to generate solutions, such as "alors qu'est ce qu'on va faire pour résoudre ça". However, if a participant probes in this way, and the subject is changed right afterwards, or the dyad has decided not to generate solutions following the probe, it is to be ignored.

* # *Solutions:* Each solution is numbered. However, elaborations on solutions that have already been suggested are given lettered bullets indicating that they are elaborations (1a, 2b...). The number indicates which solution they are based on (initial solution #2 for example), and the letter indicates which elaboration (a being the first elaboration). Elaboration solutions must have significant and important added details, such as time or causal reference, explanations, or more descriptive data that is quite different from what has already been said. Elaborations on solutions, such as why they are good must be included. For instance, 'si tu fais ça, tu pourras être mieux reposer' (not a goal because it does not directly address chores, but rather elaboration on solution). Elaborations on solutions that resemble goals are only included in the Problem Defining step when they are specific to the problem discussed. Elaborations on solutions that contradict the previous solution statement must be coded separately and can no longer be an elaboration.

Solution Content

Autonomous / Solitary: Solutions that concern tasks that are usually meant to be done on one's own, such as making one's bed in the morning, doing one's homework or a particular household chore. Also, giving money to do something on one's own is also included.

Social: Any solutions that involve cooperation with others (inc. parent), working with others, as well as getting help from others. For example, working on the broken project with a friend, asking the teacher for help, or asking the parent for help. In addition, mom may say 'je pourrais t'aider' or 'tu pourrais le faire avec ta soeur'. These are also social because they suggest working or cooperating with someone, such as the mother, sibling or friend. Furthermore, asking for an apology is also social, because its intent is to resolve the problem in a friendly way. Family schedules are also included.

Anti-social: Solutions that involve harming another, punishing another with intent or doing something that is against resolving a social conflict. Sarcastic solutions are not included if the participant is obviously joking, or says that it is not true afterwards. There are two types of anti-social solutions:

- **Overt:** Direct confrontation of an aggressive nature (ex: physically power assertion, name calling, giving orders without considering the other, *telling* a sibling to stay out of the room, *telling* a friend to leave or that they are no longer their friend). As well, any punishment (ex: privilege removal).
- **Covert:** Social exclusion and emotionally aggression (ex. 'I will ignore my sister). Also, socially withdrawing oneself from the situation, such as walking away and crying in the corner. These differ from autonomous solutions because they involve constructive solutions that are based on doing a task on one's own, whereas here, participants choose to withdraw themselves in an anti-social manner.

No solution: Neither participant has provided any solution or statement about what could be done to ameliorate the problematic situation. If so, coder must write 'No Solution' next to the heading '2. solution' on coding sheet.

Sophistication of solutions: For each solution generated, coder must determine their quality and how effective they would be if carried out.

Poor: Unrealistic solutions, such as changing one's personality or a facet of reality that can not be changed (such as removing siblings, not going to school...). Also, solutions that are extremely vague (ex: "tu pourrais faire des compromis"), or those that do not include specific steps (first you can do this, than that...), causal thinking (why this solution would work), or mention of time (when to carry out the solution). Vague time references are also poor, such 'tu pourrais commencer tantôt' or 'tu pourrais m'aider plus souvent').

Good: Somewhat specific solutions without including causal thinking or time references. If there is causal thinking, it is still very vague, such as ‘going to see the teacher to make things better’. Very direct solutions, such as ‘seeing the teacher’, ‘doing activities together’, or ‘asking for an apology’.

Very Good: Specific solutions that are time specific, that include causal thinking, or have some elaboration or explanation as to why this may be a good/adequate solution, or how it could work. For example, ‘on pourrait faire ta chambre *chaque dimanche*’ (mention of time), ‘je le dirais au prof *pour qu’il punisse...*’ (causal thinking), ‘me dire quelque chose, *pour s’excuser*’, ‘tu le sors du tiroir et tu le remets après’ (elaborations on how).

3. Decision-making

A decision has been made when one or both participants have verbally stated that a solution will be implemented or that the problematic issue is no longer problematic. For example, ‘on va faire ça’, or ‘on va choisir cette décision’. An exception exists for “Resolved Unspecified” (read below). Also, if the dyad is answering ‘which solution would you choose’ on the vignette card, and they provide an answer, that answer is the decision. There can be more than one decision made during a mother-child interaction (for example, if the dyad says ‘on va faire ça’ for more than one solution). For each decision, coder must observe who initiated the decision, which solution they chose (if applicable), as well as the manner the dyad came to their decision.

Initiation: The person who first begins the decision making step. For example, participant may say ‘ok, c’est ça qu’on va faire’ or “on s’entend la dessus” or “tu parlerais au professeur” (as in this is the solution you would choose).

1. Resolved specified: A decision has been made between mother and child when one or both has verbally stated that a particular solution would be implemented (in the case of the vignette, the dyad chooses a solution for the hypothetical story), or will be implemented (in the case of the conflict task whereby the problem solving is with a real issue). For example, the dyad may say, “je choisirais cette solution”, or mom says “ok, tu vas faire ça”. The solution selected is clear, has been verbally stated, or has been repeatedly emphasized in during the interaction.

2. Resolved unspecified: Dyad has agreed on more than half of the solutions generated, although they have not specified which one they prefer or which they will or would choose. Also, mother may say “ok, on s’entend l’a dessus?” without referring to a particular solution, and the child says yes. Or, dyad has agreed on one or several goals and has explicitly said ‘ok, on va faire ça’ or has confirmed that the goal will be achieved. However, if the dyad seems stressed or upset at the end, then no matter how many solutions were agreed upon, it must be coded as Unresolved Conflict.

3. **Unresolved:** Dyad has disagreed or has been ambiguous on at least half of the solutions generated and have not specified if any will be implemented or chosen. Or, no solutions were generated during the task.
4. **Unresolved conflict:** The task ends without a decision being made, and the dyad is in dispute and cannot decide which solution to implement. For example, mother and child talk about various solutions and one or both participants are *angry* or *upset**. Furthermore, dyad tells examiner the task is finished, although neither has verbally chosen one of the solutions discussed.

*Dyad is in dispute if any of the following occur:

- *Anger/distress/upset:* Showing disgust, anger, disappointment, annoyance, or sadness.
- *Laughing at the other:* Laughing that is meant to ridicule or belittle the other partner with the intention of being aggressive, such as sarcasm.
- *Yelling:* Verbal statements made by either partner that is beyond the normal level of hearing directed towards the other and is marked with negative facial expression, such as frowning
- Pushing / hitting, grabbing an object out of the other's hands to get attention or redirect attention
- *Critical statements:* Verbal statements made by either partner that is punitive or insulting to the other. For example, a mother or child can (i) negatively describe the other's behaviour or verbal statements "*tu ne m'écoutes jamais*", "*c'est pas bon ce que tu dis*", or (ii) insult the partner "*tu es méchant (e)*". Other critical statements include expressions such as "*Voyons donc!*" or "*Awaye là!*"
- *Quickening the end of the task because of discomfort.*

If resolved, how is decision reached?

These codes are global, and examine the process of decision making. The entire decision making step must be observed as a whole in order to see the manner it was done after everything has been coded. Consequently, the coder must observe the moment one of the participants generated the solution, until one of them decides they are finished. For instance, prior to a decision, mother and child were negotiating each other's terms and elaborating on each other's ideas. In this case, the coder must examine how the solution was discussed and how decision making began to determine the following *global codes*. If there was both a collaborative effort as well as some compromises, always emphasize the compromise and code it as such. If there is some discomfort during some of the interaction during the solution phase, but not throughout, examine the decision making step specifically to determine whether the code is Submission. For instance, if a child shows discomfort and reluctance when the solution is first discussed, but then when the mother says 'on va faire ça?' and the child says 'yes' without reluctance, do not code as Submission.

Collaboration: A proposed agreement that was reached after *both* participants actively participated in finding the solution by elaborating on each other's ideas. Neither

participant changes the other's suggestions or ideas, but rather adapts it to improve it or match it to reality (children may suggest solutions that are not contingent on what is possible). For example, child says "j'aimerais faire la vaisselle", mom responds "on lave pas beaucoup la vaisselle...on a un lave vaisselle, mais tu pourrais *vider* le lave vaisselle" and child agrees. This is different from compromise because mother did not change the child's idea, only elaborated on it so that it matched the reality of the home (having a dish washer). This code is dyadic only.

Agreement: A proposed agreement whereby one participant suggests a solution and the other agrees right away. There is no debate, discussion or negotiating during the solution phase. It may be that a mother tells her child what could be done, and she dominates the conversation and the child simply nods her head or says yes repeatedly. Alternatively, a child may say "J'irais parler au professeur", and the mom says "ok". Other participant does not indicate disapproval and consents right away. This code is individual only.

Compromise: A proposed agreement whereby both participants accept a solution that is an *important* variation of what either originally sought. For example, a mother says "Tu vas ranger ta chambre chaque dimanche matin" and the child says "non, le soir". If the mother agrees, then this would be coded as a compromise. This is different from collaboration because in this code, one of the participants changed in an important way what or how the solution could be implemented. In the aforementioned example, the child changed the *time* of the solution. This code is dyadic only.

Submission: An agreement whereby one participant suggests a decision, and the other, while exhibiting reluctance and disapproval, consents anyway. A participant is reluctant when he or she has an unsure tone when agreeing (hmmm, okay...said slowly), or when nonverbal behavior indicates disagreement (such as looking down rather than mutual eye gaze and consenting with a low or squeamish voice). For example, mother says "tu vas ranger ta chambre chaque matin", and the child is in disbelief, or has his eyes to the floor seeming upset, but still says yes, the child has submitted to his or her mother's decision. Also, dyad has agreed on a particular solution or goal at the end of the task, but the agreement was coded as ambiguous for one of the participants. While both participants may have contributed to the solution, *it is clear* that one of the participants is reluctant to choose this solution. Therefore, while the solution generating step may have been dyadic, the decision making step must be individual only.

Appendix G

Non-Significant Regression Tables

Table F - 1

Maternal Childhood Levels of Aggression and Withdrawal and Mother's Total Solutions (N = 57)

Variables	Beta	sr ²	t	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.00	0.08
Childhood Aggression	0.05	0.00	0.32		
Childhood Withdrawal	0.03	0.01	0.24		
<u>Step 2</u>				0.02	1.19
Childhood Aggression	0.08	0.01	0.58		
Childhood Withdrawal	0.11	0.01	0.69		
Maternal Education	0.17	0.02	1.09		
<u>Step 3</u>				0.01	0.19
Childhood Aggression	0.07	0.01	0.49		
Childhood Withdrawal	0.14	0.01	0.81		
Maternal Education	0.21	0.03	1.23		
Child Age	0.01	0.01	0.60		
Child Gender	-0.00	0.00	-0.02		
<u>Step 4</u>				0.02	0.75
Childhood Aggression	-0.02	0.00	-0.12		
Childhood Withdrawal	0.12	0.01	0.69		
Maternal Education	0.20	0.03	1.13		
Child Age	0.10	0.01	0.57		
Child Gender	0.02	0.00	0.11		
Childhood Aggression x Withdrawal	0.16	0.02	0.86		
	R = 0.221		R ² _{Adj} = -0.073		F = 0.40

Table F - 2

Maternal Childhood Levels of Aggression and Withdrawal and Mother's Autonomous Solutions (N = 57)

Variables	Beta	sr ²	t	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.01	0.25
Childhood Aggression	-0.01	0.01	-0.70		
Childhood Withdrawal	-0.00	0.00	-0.01		
<u>Step 2</u>				0.01	0.24
Childhood Aggression	-0.08	0.01	-0.56		
Childhood Withdrawal	0.03	0.00	0.21		
Maternal Education	0.08	0.01	0.49		
<u>Step 3</u>				0.00	0.08
Childhood Aggression	-0.08	0.01	-0.55		
Childhood Withdrawal	0.04	0.00	0.24		
Maternal Education	0.07	0.00	0.41		
Child Age	-0.01	0.00	-0.03		
Child Gender	0.06	0.00	0.38		
<u>Step 4</u>				0.00	0.09
Childhood Aggression	-0.05	0.00	-0.26		
Childhood Withdrawal	0.05	0.00	0.27		
Maternal Education	0.08	0.00	0.43		
Child Age	-0.00	0.00	-0.03		
Child Gender	0.05	0.00	0.33		
Childhood Aggression x Withdrawal	-0.05	0.00	-0.23		
	R = 0.14		R ² _{Adj} = -0.11		F = 0.15

Table F - 3

Maternal Childhood Levels of Aggression and Withdrawal and Mother's Very Good Solutions (N = 57)

Variables	Beta	Sr ²	t	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.04	1.05
Childhood Aggression	0.20	0.04	1.45		
Childhood Withdrawal	-0.01	0.00	-0.04		
<u>Step 2</u>				0.03	1.72
Childhood Aggression	0.24	0.06	1.73		
Childhood Withdrawal	0.08	0.01	0.53		
Maternal Education	0.20	0.03	1.31		
<u>Step 3</u>				0.00	0.02
Childhood Aggression	0.25	0.06	1.70		
Childhood Withdrawal	0.07	0.00	0.42		
Maternal Education	0.20	0.03	1.16		
Child Age	-0.02	0.00	-0.10		
Child Gender	-0.03	0.00	-0.20		
<u>Step 4</u>				0.0	0.06
Childhood Aggression	0.22	0.03	1.22		
Childhood Withdrawal	0.07	0.00	0.38		
Maternal Education	0.19	0.03	1.12		
Child Age	-0.02	0.00	-0.10		
Child Gender	-0.02	0.00	-0.16		
Childhood Aggression x Withdrawal	0.04	0.00	0.23		
			R = 0.27	R ² _{Adj} = -0.05	F = 0.62

Table F - 4

Maternal Childhood Levels of Aggression and Withdrawal and Resolved Specified (N = 57)

Variables	Beta	sr ²	t	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.006	0.167
Childhood Aggression	0.02	0.00	0.14		
Childhood Withdrawal	-0.08	0.01	-0.55		
<u>Step 2</u>				0.04	2.00
Childhood Aggression	0.07	0.00	0.48		
Childhood Withdrawal	0.02	0.00	0.11		
Maternal Education	0.22	0.04	1.41		
<u>Step 3</u>				0.01	0.19
Childhood Aggression	0.06	0.00	0.39		
Childhood Withdrawal	0.05	0.00	0.31		
Maternal Education	0.26	0.05	1.52		
Child Age	0.01	0.01	0.62		
Child Gender	0.02	0.00	0.15		
<u>Step 4</u>				0.014	0.68
Childhood Aggression	0.15	0.01	0.80		
Childhood Withdrawal	0.07	0.00	0.42		
Maternal Education	0.28	0.05	1.59		
Child Age	0.10	0.01	0.63		
Child Gender	0.01	0.00	0.03		
Childhood Aggression x Withdrawal	-0.15	0.01	-0.83		
			R = 0.26	R ² _{Adj} = -0.05	F = 0.55

Table F - 5

Maternal Childhood Levels of Aggression and Withdrawal and Unresolved - No Conflict (N = 57)

Variables	Beta	sr ²	t	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.04	1.03
Childhood Aggression	0.06	0.00	0.42		
Childhood Withdrawal	-0.19	0.03	-1.34		
<u>Step 2</u>				0.01	0.56
Childhood Aggression	0.03	0.00	0.22		
Childhood Withdrawal	-0.23	0.05	-1.53		
Maternal Education	-0.12	0.01	-0.75		
<u>Step 3</u>				0.01	0.16
Childhood Aggression	0.03	0.00	0.21		
Childhood Withdrawal	-0.22	0.04	-1.33		
Maternal Education	-0.13	0.01	-0.74		
Child Age	-0.01	0.00	-0.08		
Child Gender	0.08	0.01	0.53		
<u>Step 4</u>				0.00	0.02
Childhood Aggression	0.05	0.00	0.26		
Childhood Withdrawal	-0.22	0.03	-1.28		
Maternal Education	-0.12	0.01	-0.71		
Child Age	-0.01	0.00	-0.08		
Child Gender	0.08	0.01	0.50		
Childhood Aggression x Withdrawal	-0.03	0.00	-0.15		
	R = 0.24		R ² _{Adj} = -0.06		F = 0.47

Table F - 6

Maternal Childhood Levels of Aggression and Withdrawal and Unresolved - Conflict (N = 57)

Variables	Beta	Sr ²	t	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.07	2.02
Childhood Aggression	-0.23	0.05	-1.70		
Childhood Withdrawal	-0.16	0.03	-1.17		
<u>Step 2</u>				0.00	0.04
Childhood Aggression	-0.24	0.05	-1.69		
Childhood Withdrawal	-0.17	0.02	-1.14		
Maternal Education	-0.03	0.00	-0.20		
<u>Step 3</u>				0.01	0.37
Childhood Aggression	-0.25	0.06	-1.71		
Childhood Withdrawal	-0.15	0.02	-0.93		
Maternal Education	0.01	0.00	0.08		
Child Age	0.10	0.01	0.61		
Child Gender	-0.07	0.00	-0.46		
<u>Step 4</u>				0.01	0.36
Childhood Aggression	-.031	0.06	-1.72		
Childhood Withdrawal	-0.17	0.02	-0.99		
Maternal Education	0.00	0.00	0.02		
Child Age	0.09	0.01	0.59		
Child Gender	-0.06	0.00	-0.37		
Childhood Aggression x Withdrawal	0.11	0.01	0.60		
			R = 0.31	R ² _{Adj} = -0.02	F = 0.82

Table F - 7

Maternal Childhood Levels of Aggression and Withdrawal and Total Agreement Resolution (N = 57)

Variables	Beta	sr ²	t	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.01	0.37
Childhood Aggression	-0.07	0.10	-0.49		
Childhood Withdrawal	0.10	0.10	0.68		
<u>Step 2</u>				0.00	0.11
Childhood Aggression	-0.06	0.00	-0.39		
Childhood Withdrawal	0.12	0.01	0.75		
Maternal Education	0.05	0.00	0.34		
<u>Step 3</u>				0.00	0.02
Childhood Aggression	-0.06	0.00	-0.38		
Childhood Withdrawal	0.12	0.10	0.67		
Maternal Education	0.06	0.00	0.34		
Child Age	0.01	0.00	0.05		
Child Gender	-0.03	0.00	-0.18		
<u>Step 4</u>				0.02	0.88
Childhood Aggression	0.05	0.00	0.25		
Childhood Withdrawal	0.14	0.01	0.79		
Maternal Education	0.08	0.00	0.43		
Child Age	0.01	0.00	0.08		
Child Gender	-0.05	0.00	-0.31		
Childhood Aggression x Withdrawal	-0.17	0.02	-0.94		
			R = 0.19	R ² _{Adj} = -0.09	F = 0.29

Table F- 8

Maternal Childhood Levels of Aggression and Withdrawal and Total Child Submit (N = 57)

Variables	Beta	Sr ²	t	R ² _{ch}	F _{ch}
<u>Step 1</u>				0.00	0.01
Childhood Aggression	0.00	0.00	-0.00		
Childhood Withdrawal	-0.02	0.00	-0.11		
<u>Step 2</u>				0.01	0.27
Childhood Aggression	0.02	0.00	0.12		
Childhood Withdrawal	0.02	0.00	0.12		
Maternal Education	0.08	0.01	0.52		
<u>Step 3</u>				0.02	0.36
Childhood Aggression	0.01	0.00	0.05		
Childhood Withdrawal	0.05	0.00	0.28		
Maternal Education	0.13	0.01	0.77		
Child Age	0.12	0.01	0.72		
Child Gender	-0.04	0.00	-0.29		
<u>Step 4</u>				0.03	0.31
Childhood Aggression	0.07	0.00	0.37		
Childhood Withdrawal	0.06	0.00	0.35		
Maternal Education	0.14	0.01	0.81		
Child Age	0.12	0.01	0.73		
Child Gender	-0.06	0.00	-0.36		
Childhood Aggression x Withdrawal	-0.10	0.01	-0.56		
			R = 0.16	R ² _{Adj} = -0.10	F = 0.21