

Socioeconomically disadvantaged fathers' presence and parenting and the trajectories of
their children's social, cognitive, and behavioural development

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A Thesis in the
Department of Psychology

Presented in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy (Psychology)
at Concordia University
Montréal, Quebec, Canada

December, 2011

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DOCTOR OF PHILOSOPHY (Psychology)

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General Abstract

Fathers' presence and parenting and the intergenerational trajectory of child development in a sample at high socioeconomic risk

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Previous investigations of the developmental outcomes of fathering have primarily focused on English-speaking families and utilized cross-sectional methodologies. The present studies used intergenerational and longitudinal methods to illustrate the roles that high risk Francophone fathers play in their children's social, cognitive, and behavioural development. Three key questions were examined: (1) What were the direct and indirect pathways between fathers' absence in one generation and fathers' absence in the next generation? (2) To what extent did fathers' presence and parenting predict children's later cognitive and behavioural functioning? (3) To what extent did fathers' presence and parenting differentially affect the development of sons and daughters? Data from the Concordia Longitudinal Risk Project were employed to address these questions. Results indicated that there was a direct pathway from fathers' absence in one generation to fathers' absence in the next generation for both males and females that was not reduced by taking socioeconomic and mental health factors into consideration. Fathers' presence in middle childhood predicted fewer internalizing problems in pre-adolescence, especially for girls, and fathers' parenting, specifically positive parental control, predicted higher Performance IQ scores and fewer internalizing problems over six years later. Gender differences were illustrated in the current data. Specifically, males and females demonstrated different indirect pathways between fathers' absence in two

generations through childhood aggression, neighborhood risk, educational attainment, and substance abuse. Moreover, fathers' presence predicted fewer internalizing problems for girls only. Together, these findings add to the increasing body of literature suggesting that fathers make important contributions to their children's development, and highlight the advantages of developing policies and affordable programs that promote positive fathering and encourage socioeconomically disadvantaged fathers to spend time with their children.

Acknowledgements

I would very much like to thank my supervisor, Dr. Lisa Serbin, for her invaluable guidance and teaching. I will always be grateful for her encouragement and trust, and the many ways in which she helped me to grow as a researcher and a psychologist. Lisa, I am so happy to consider you a friend as well as a supervisor.

I would also like to thank Dr. Dale Stack and Dr. Alex Schwartzman for their insightful comments and direction on the projects included in this dissertation. Many thanks are also extended to my internal committee members, Dr. Bill Bukowski and Dr. Diane Poulin-Dubois. I greatly appreciate the guidance, support, and wonderful ideas that you both have given me throughout this process. Furthermore, I owe a great debt to Claude Senneville and his invaluable Concordia Longitudinal Risk Project expertise, Guang Hui Li for providing me with the data I needed for my dissertation projects, and all of the volunteers who work so hard to keep the Concordia Project running.

To my lab sisters Paula, Alexa, Lisa, Michele and Caroline, I so enjoyed our time together, and you all have inspired me in so many ways. Your support helped me to face and overcome many challenges, both personal and professional, and I am truly grateful to have you in my life. I have made many other friends throughout my time at Concordia, and each has supported, inspired, and guided me in unique ways. Special thanks to Lina, whose enthusiasm for statistics and yoga kept me balanced and well-informed, to Amelie, who always provided an open ear and mind whether in the classroom, at the gym, or on a mountain, and to Julie, who invited a newcomer to Montréal into her life and who continues to inspire me with her honest and persevering nature.

Everything I have done for the past six years would not have been possible without the support of my family. To Ilana and Alisse, my amazing sisters, your love, humour, and unconditional support have provided me with so much comfort throughout this process. I am so proud of everything you have accomplished and I cannot wait to experience the coming years with you. Mom, you are such an inspiration to me. You taught me how to be a woman in this world, including the importance of being fulfilled through both family and work. And Dad, I became interested in researching fathers because you were and continue to be such an amazing one. Whether it was advising me about grad school, spending time with me while playing tennis, skiing, or hiking, or modeling a healthy work-life balance, you were always there when I needed you. Mom and Dad, I love you so much and I will forever be grateful for everything that you have done for me. I am also grateful to my Montréal family, especially Auntie Anita, my late Uncle Budgie, Auntie Phyllis, and Uncle Morris, as well as my Toronto family, especially Grandma Shyrna, Bubby Nellie, all my aunts and uncles there, and Sam and Mel, who are family in spirit if not in name. My eastern-Canadian family provided me with many fun times, a lot of support, and countless delicious meals. Thanks also to my lifelong Edmonton friends, and especially Torrie, for helping me become who I am.

I dedicate this dissertation to my husband. Anthony, your love has meant everything to me. Your thoughtful, analytical, and determined nature continuously inspires me to do and be better, both personally and professionally. More than anybody, you saw me at my best and my worst throughout this process, and your constant support, encouragement, and thoughtfulness is what helped me succeed. You are truly my rock, and you will always have my love and support in return.

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Contributions of the Authors

Erin Pougnet developed the research questions, designed, performed, and interpreted the statistical analyses, and wrote and edited all chapters included in the current thesis. Dr. Lisa Serbin and Dr. Dale Stack provided commentary on these manuscripts. As well, Dr. Alex Schwartzman and Dr. Jane Ledingham were responsible for the original design and data collection. Finally, Dr. Schwartzman, Dr. Serbin, Dr. Stack and Dr. Sheilagh Hodgins designed the wave of data collection from which some of the outcomes examined in this thesis were drawn.

General Introduction

All children have two parents. While some might argue that the previous statement is false or exaggerated, nobody can deny that aside from artificial insemination, it takes both a man and a woman to create a new life. Once that new life is created, women generally become mothers, while men vary on their degree of subsequent fatherhood. One man might remain with the child's mother and help raise his child, while another might separate from the child's mother while still helping to raise his child. Still another man might be absent from the child's life altogether, and another man might raise the child without the child's biological mother. Fathers, like mothers, also vary to the degree that they demonstrate positive parenting skills with their children. Nevertheless, any of these fathers, through their parenting as well as their presence or absence, are likely to influence their children's social, emotional, and cognitive development in ways that are similar to mothers, as well as in ways that differ from mothers (Cabrera, Shannon, & Tamis-LeMonda, 2007; Goeke-Morey & Cummings, 2007). However, the vast majority of research involving parents focuses primarily on associations between mothers' parenting and child development (Phares, 1992; Roy & Kwon, 2007). A minority of existing research investigates the associations between fatherhood, both in terms of being present in the child's home and of being a good parent, and child development (Amato, 1996; Amato & Keith, 1991; Bronte-Tinkew, Carrano, Horowitz, & Kinukawa, 2008; Cabrera, Shannon, & Tamis-LeMonda, 2007; Carlson, 2006; Chen, Liu, & Li, 2000; Demuth & Brown, 2004; Fagan & Iglesias, 1999; Flouri, 2007; Griffin, Botvin, Scheier, Diaz, & Miller, 2000; Lamb, 2010; Levine Coley, 2003; Pfiffner,

McBurnett, & Rathouz, 2001; Ryan, Martin, & Brooks-Gunn, 2006; Teachman, Day, Paasch, Carver, & Call, 1998).

The roles that fathers play in their children's development might be especially significant in Québec, a demographically and culturally unique province in Canada. Notably, individuals with children in Québec are approximately five times more likely to be in a common-law relationship (i.e., living with a romantic partner without being legally married) than individuals with children in other Canadian provinces (Statistics Canada, 2007b). Further, common-law unions are more easily and more often dissolved than marriages (Andersson, 2002; Kamp Dush & Amato, 2005; Statistics Canada, 2006), frequently resulting in single mother families that are more socioeconomically disadvantaged than two-parent families (Ricciuti, 2004; Statistics Canada, 2009). Because socioeconomic status is closely related to parental absence and has also been shown to predict indicators of success in adolescents in Québec (Gouvernement du Québec, 2008), it is important to examine the roles that fathers in Québec play in their children's lives. Therefore, the current thesis addressed the roles that socioeconomically disadvantaged fathers in Québec play in their children's development. Specifically, it used longitudinal, prospective, and intergenerational methods to examine the ways in which fathers' presence in their children's homes and their parenting styles predict social, cognitive, and behavioural outcomes in their children.

The following introduction includes a brief discussion of the intergenerational transfer of psychosocial risk, as well as an outline of various proposed theoretical frameworks of fatherhood. Subsequently, the limitations in the existing body of research

with fathers are reviewed, and the general questions focused on by both studies are summarized.

Intergenerational transfer of risk

In the intergenerational model of risk transmission (Caspi & Elder, 1988), problematic behaviour patterns manifested during childhood persist into adulthood, creating family dysfunction. Later, family dysfunction links the parents' childhood history of problem behaviours to the subsequent problems of their offspring, establishing an intergenerational cycle. The uniqueness of this approach lies in the “developmental intersection of two or more generations and their ongoing interaction, affecting the future growth trajectories of all members of the family” (Serbin & Karp, 2004, p. 337).

The intergenerational transfer of risk, due to its transactional and progressive nature, is perhaps most appropriately studied using longitudinal research methods (Serbin & Karp, 2003; Serbin & Stack, 1998). Repeatedly exploring the lives of individuals over time allows the continuities and discontinuities of risk, as well as the potential mediators, moderators, and protective factors of social and psychological difficulties in children, to be determined. Indeed, by examining families in such a way, patterns of interactions that continue over time and across generations can be uncovered, and discontinuities of behaviours and the factors that protect children from replicating the high risk lives of their parents can be revealed.

Longitudinal studies have indicated that children who display aggressive, antisocial, and withdrawn tendencies are likely to demonstrate continuity in their behaviours throughout adolescence and young adulthood, leading to such outcomes as school drop-out and early parenthood (Fagot, Pears, Capaldi, Crosby, & Leve, 1998;

Serbin et al., 1991, 1998; Tremblay, 2000). Furthermore, problematic behaviours as a child can result in negative parenting circumstances later on, resulting in the continuity of physical, psychosocial, and behavioural problems in the next generation (Huesmann, Eron, Lefkowitz, & Walder, 1984; Kaplan & Liu, 1999; Serbin & Karp, 2004). In addition to behaviour problems, socioeconomic disadvantage can be transferred from parents to children, creating an intergenerational cycle of socioeconomic risk.

Specifically, individuals who experience poverty as children are more likely than other individuals to drop out of school, become parents at an early age, and develop substance abuse problems, typically leading to their own children experiencing poverty (Antel, 1992; Chase-Lansdale & Brooks-Gunn, 1995; Corcoran, 1995). The intergenerational transfer of psychosocial and socioeconomic risk has been demonstrated to occur in different populations, including socioeconomically disadvantaged rural families, families who live in inner cities, and racial minorities (Fagot et al., 1998; Furstenberg, Levine, & Brooks-Gunn, 1990; Hardy, Astone, Brooks-Gunn, Shapiro, & Miller, 1998; Serbin et al., 1998).

One important tenet of the intergenerational transfer of risk is that child development is a process that occurs within a social context (Gauvain & Perez, 2007). It is thought that the social milieu contributes to child development by establishing how children think and the relationship patterns they develop over the life course, as well as by providing children with a system to learn about their environments. Parents are arguably children's most important resource for socialization, as they provide both direct socialization through teaching, modeling, and structuring interactions, as well as indirect socialization through links to the larger community and providing extracurricular

activities in which their children can participate (Gauvain & Perez, 2005). Indeed, studies have indicated that parenting is one of the primary mechanisms involved in the intergenerational transfer of risk (for review, see Serbin & Karp, 2004). While child development is also influenced by biological and individual factors, it is perhaps best viewed within a context of socialization, notably involving parents.

Theoretical frameworks of fatherhood

An extensive body of research has indicated that parenting is important in predicting social, behavioural, and cognitive developmental outcomes in children (e.g., Maccoby, 1992; Magill-Evans & Harrison, 2001; Serbin & Karp, 2003; van IJzendoorn, Dijkstra, & Bus, 1995). However, how and why might fathers in particular influence their children's development? A recent paper by Pleck (2007) outlined various theoretical frameworks for the association between fathers' involvement and children's development. To begin, he illustrated modern attachment theory (Bretherton, 1985), according to which secure parent-child attachment provides a basis for children to explore their surroundings, and thus develop a positive internal working model of the self in relation to others; this serves to promote cognitive, social, and emotional development in children. Research has indicated that fathers build attachment relationships with their children (Belsky, Youngblade, Rovine, & Volling, 1991), and these attachment relationships are qualitatively different than mother-child attachment relationships (van IJzendoorn & Bakermans-Kranenburg, 1996). Furthermore, some studies have demonstrated a significant association between father-child attachment and children's socioemotional and behavioural development (Suess, Grossmann, & Sroufe, 1992; Verschueren & Marcoen, 1999).

In contrast with the father-child attachment relationship, Paquette (2004) proposed a father-child activation relationship; he explained that fathers surprise and excite their children, encourage them to take risks, and momentarily destabilize them while providing them with security to explore the world around them. The author argued that the activation relationship, which is primarily developed through physical play between fathers and their children, serves to enhance children's cognitive and social skills, and is a qualitatively different construct from the attachment relationship, which is designed to provide children with comfort in stressful situations. Indeed, researchers have proposed that the types of play that occur between fathers and their children, including rough-and-tumble play, serve to stimulate children's emotional regulation (Carson, Burks, & Parke, 1993; Parke, 2002) as well as their cognitive development (Labrell, 1996). Moreover, Grossmann, Grossmann, Fremmer-Bombik, Kindler, Scheuerer-Englisch, & Zimmermann (2002) indicated that fathers' sensitivity during play with their preschool-aged children was a better predictor of the children's internal working models of attachment in adolescence than the security of the early father-child attachment relationship.

An additional perspective outlined by Pleck (2007) is derived from Bronfenbrenner's ecological theory (1986), which describes different and interrelated levels at which development occurs, such as the microsystem (i.e., the individual relationships in which children participate), and the macrosystem (i.e., social policies and cultural factors that influence development). Within this model of development, Bronfenbrenner described the concept of proximal process as development that occurs through dynamic, reciprocal relations between an individual and the other people,

objects, and representations across ecological levels. According to this perspective, fathers serve as additional and unique microsystem partners with whom children can experience positive development through proximal process; therefore, fathers have an additive effect by providing children with more microsystem partners that can stimulate cognitive, social, and emotional development through unique proximal process.

Finally, Pleck (2007) summarized social capital theory (Coleman, 1988), which proposes that parents provide two types of capital for their children: financial capital (i.e., resources such as food, shelter, and education) and social capital (i.e., socialization through both parenting and providing links to the larger community). In this framework, fathers contribute to their children's development primarily through providing financial capital, as men typically earn higher salaries than women, while mothers contribute to their children's development primarily through providing social capital, as women are typically children's primary caregivers. However, research is required to support this perspective in the twenty first century when many families include working mothers, the wage gap is diminishing, and fathers' roles within families with two working parents might be changing.

The previous models describe mechanisms behind the proposed association between fatherhood and child development. However, there are additional perspectives regarding this association, and the theoretical basis behind it is continuously developing; for example, Cabrera, Fitzgerald, Bradley, and Roggman (2007) have proposed a model that associates father characteristics (e.g., age, educational attainment, physical and/or mental health) and father involvement (i.e., engagement with, responsibility for, and availability to the child), along with family characteristics and contextual factors, with

child characteristics. This model is developmental, and examines the indirect as well as the direct effects of father involvement on child development. This type of model integrates different aspects of other existing theoretical frameworks; for example, it incorporates fathers' financial contributions that are significant in social capital theory, it acknowledges many of the systems involved in ecological theory, and it focuses on the father-child relationships that are central in attachment and activation theories. With each of these perspectives in mind, as well as an awareness of the developing nature of theoretical frameworks involving fathers and their potential for integration, the following section will examine some of the methodological limitations of the existing research regarding fathers and their children's development.

Methodological limitations

Although research exists regarding the association between fathers and their children's development, many of the studies that have been conducted involve various methodological limitations. Primarily, researchers rarely agree on issues such as the definition of fatherhood and the most effective way to measure the contribution of fathers to their children's development (Cabrera et al., 2007; Pleck, 2007). For example, many studies examine father involvement, some illustrate the constructs of paternal sensitivity and intrusiveness, some conceptualize fatherhood using an attachment framework, and still others look at fathers' presence in the home as an indicator of fatherhood. In addition, some studies focus on resident biological fathers, some include nonresident fathers, and others examine stepfathers and other resident nonbiological fathers in relation to developmental outcomes of children (Berger, Carlson, Bzostek, & Osborne, 2008; Fagan & Palkovitz, 2007; Hawkins, Amato, & King, 2007). Therefore, when

examining fathering, the current literature is examining many different roles and constructs. The situation becomes even more complicated when considering the many different types of parental relationship statuses that occur, including marriage, separation, divorce, never-married, and common-law relationships; fathers who are married to or divorced from their children's mothers are most commonly included in psychological research, whereas less is known about never-married fathers and their children (Sigle-Rushton & McLanahan, 2002). In order to fully understand the roles played by fathers in their children's development, it is necessary for researchers to clarify who fathers are and how fathering is most adequately measured (West, 2007).

A second limitation that often occurs in research relating to fathers is in reporting methods: mothers who participate in studies with their children are often asked to report on the parenting characteristics of the fathers (Roy & Kwon, 2007). However, research has demonstrated that reports of father involvement differ between mothers and fathers (Mikelson, 2008). Ideally, studies that report on the parenting characteristics of fathers should include interviews and questionnaires completed by the fathers themselves, or observed interactions between fathers and their children. This becomes complicated when considering the parenting characteristics of fathers who do not live with their children, as well as fathers who are not involved in their children's day-to-day lives, both situations that are more likely to occur in populations at high socioeconomic risk (Roy & Kwon, 2007). Nevertheless, research that includes fathers is more reliable and valid if it obtains fathers' own perspectives, rather than relying on mothers to report on the parenting of fathers.

A third limitation in the research is that the association between fathers and children's development is often examined in Caucasian, middle-class, American, English-speaking samples (Roy & Kwon, 2007; for a notable exception see Boller, Bradley, Cabrera, Raikes, Pan, Shears et al., 2006). It is difficult to entice fathers to participate in psychological research, especially fathers at high socioeconomic risk; they are more likely to be young, unemployed, or nonresident fathers (Cabrera, Shannon, West, & Brooks-Gunn, 2006). In addition, longitudinal studies examining socioeconomically disadvantaged fathers often have high attrition rates due to fathers' higher mobility, difficulty in obtaining accurate contact information, and incarceration (Groves & Couper, 1998). Due to these difficulties in having socioeconomically disadvantaged fathers participate in research, this is a population that has been historically understudied (Coley & Coltrane, 2007; Mitchell, See, Tarkow, Cabrera, McFadden, & Shannon, 2007). However, research has demonstrated that socioeconomic status is associated with both fathers' parenting skills and developmental outcomes in children (Cabrera, Shannon, & Tamis-LeMonda, 2007; Nord, Brimhall, & West, 1997; Pleck, 1997). Studies that not only control for family socioeconomic status but that go further and examine its role in the association between fathers and child development are required. Indeed, more attention to socioeconomically disadvantaged fathers in various cultural contexts is required to generalize results to diverse populations (Bronte-Tinkew et al., 2008).

Finally, the majority of studies measure fatherhood and child development concurrently; few longitudinal or intergenerational studies exist in this area that aim to determine the trajectories of children's social, cognitive, and emotional development, and

how they are affected by fathers, both over the course of childhood and into the next generation (Cabrera et al., 2007; Coley & Coltrane, 2007; Roy & Kwon, 2007). In addition, the longitudinal studies that exist often examine the relation between fathers and development over the preschool years, between the ages of approximately 2 and 5 years (e.g., Boller et al., 2006; Cabrera, Shannon, & Tamis-Lemonda, 2007). Studies that examine the trajectories of social, cognitive, and emotional development in children from preschool to adolescence, and how these trajectories are affected by factors such as father's presence, parenting style, and family socioeconomic status, would allow for a greater understanding of both fatherhood and child development.

The current thesis

The current thesis addresses some of these limitations by using longitudinal and intergenerational methods to investigate the roles that socioeconomically disadvantaged Francophone fathers play in their children's social, cognitive, and behavioural development. Examining the relation between fathers' presence and parenting skills and various facets of children's development in a culturally and demographically unique population should both add to the existing body of literature regarding fathers and suggest prevention and intervention strategies to help curb the intergenerational transfer of psychosocial risk.

Three key questions were examined in the current thesis: (1) What are the direct and indirect pathways between fathers' absence in one generation and fathers' absence in the next generation? (2) To what extent do fathers' presence and parenting predict children's later cognitive and behavioural functioning? (3) To what extent do fathers' presence and parenting differentially affect the development of sons and daughters? To

address the first question, it was anticipated, based on previous research, that fathers' absence in one generation would directly predict both fathers' absence and increased socioeconomic risk in the next generation. Furthermore, indirect paths from fathers' absence in one generation to fathers' absence in their children through socioeconomic, neighborhood, temperament, and mental health factors were expected to be illustrated. Regarding the second question, it was hypothesized that children who live with their fathers in middle childhood or whose fathers demonstrated positive early parenting abilities would have increased levels of cognitive ability and lower levels of behaviour problems in pre-adolescence than other children. Finally, it was anticipated that child gender might moderate the relations between fathers' parenting and presence and the cognitive ability, behaviour problems, and relationship patterns of their offspring.

Three primary types of outcomes were used to examine the association between fathers and child development, including demographics outcomes (i.e., fathers' presence or absence, annual family income, educational attainment, neighborhood risk), cognitive outcomes (i.e., scores from standardized tests of cognitive ability), and behavioural outcomes (i.e., reports of internalizing and externalizing behaviour problems). These outcomes were selected because they were derived from a previous literature linking them with fathers' presence and parenting abilities (Amato, 1996; Amato & DeBoer, 2001; Amato & Keith, 1991; Bronte-Tinkew et al., 2008; Cabrera, Shannon, & Tamis-LeMonda, 2007; Carlson, 2006; Demuth & Brown, 2004; Fagan & Iglesias, 1999; Flouri, 2007; Glenn & Kramer, 1987; Kulka & Weingarten, 1979; McLanahan & Bumpass, 1988; Ryan et al., 2006). Furthermore, these three categories of outcomes were also chosen for the current thesis because they all are associated with individuals' health and

well being throughout the lifecourse (Amato & Booth, 1991; Masten, Best, & Garmezy, 1990; Masten, Roisman, Long, Burt, Obradovic, Riley, et al., 2005; Reynolds, Temple, Ou, Robertson, Mersky, Topitzes, & Niles, 2007; Luo & Waite, 2005).

The first study investigates the pathways between fathers' absence in one generation and the subsequent experience of fathers' absence by the next generation. This association has been explored in previous sociological studies relating to divorce; findings generally indicated that children whose parents divorced were more likely to have their own relationships end in divorce as adults (Amato, 1996; Amato & DeBoer, 2001; Kulka & Weingarten, 1979; McLanahan & Bumpass, 1988). In addition, the links between fathers' absence, childhood aggression, and subsequent fathers' absence during the childhood of the participants' offspring are explored in this study. Therefore, the current study expands on previous research by focusing on fathers' absence as a predictor and an outcome outside the context of divorce, allowing families in which the dissolution of a non-marital relationship has occurred to be included. It also extends previous research by investigating the role of children's behaviour problems in the intergenerational transfer of both fathers' absence and other types of psychosocial risk.

The second study explores the prospective relations between fathers' presence and parenting and children's subsequent cognitive and behavioural development. Fathers' presence and the positive use of parenting skills have previously been examined as predictors of increased cognitive ability and decreased levels of behaviour problems, primarily in preschool-aged children (e.g., Cabrera, Shannon, & Tamis-LeMonda, 2007; Ryan et al., 2006). However, some studies have indicated that fathers' presence and parenting do not predict cognitive and behavioural outcomes in children after controlling

for socioeconomic factors (Carlson & Corcoran, 2001; Crockett, Eggebeen, & Hawkins, 1993; DeBell, 2008; Entwisle & Alexander, 1996; McMunn, Nazroo, Marmot, Boreham, & Goodman, 2001). This study was designed to examine the ways in which fathers' presence and parenting styles are related to their children's later cognitive and behavioural development while shedding light on the possible mediating effects of socioeconomic factors.

Study 1: The Intergenerational Continuity of Fathers' Absence in a Socioeconomically
Disadvantaged Sample

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Second revision submitted to the *Journal of Marriage and Family* (October, 2011)

Abstract

Fathers' absence is a widespread phenomenon showing intergenerational continuity, notably within disadvantaged populations. The process whereby this pattern is repeated across generations is not well understood. Using data from the Concordia Longitudinal Risk Project, pathways between fathers' absence in one generation and the subsequent experience of fathers' absence by their children were investigated. The current sample included 386 socioeconomically at-risk individuals across two waves of data collection: when they were children and when they were adults with their own children. Using structural equation modeling, men whose fathers were absent when they were children were more likely to become absent fathers, and women whose fathers were absent when they were children were more likely to have children with absent partners. Indirect pathways between fathers' absence in two generations were illustrated for men and women. These findings add to the literature suggesting that fathers' absence during childhood has intergenerational family effects.

As the frequency of divorce increased in the 1970s and 1980s in North America, research emerged examining the short and long term effects of divorce on children's wellbeing (see Amato, 2010 for review). One common line of investigation involved the marriages of individuals whose parents were divorced when they were children. Studies that examined large national samples in the United States have found modest to moderate effects indicating that children who experienced their parents' divorce were likely to later on experience divorce themselves (Amato, 1996, 1999; Amato & DeBoer, 2001; Teachman, 2002; Wolfinger, 1999).

Fathers' absence (i.e., fathers not living in their children's homes on a full time basis) can be conceptually separated from divorce. Specifically, the absence of a father does not necessarily imply that the child has experienced the loss of the father from the home, in cases where parents were never married and never cohabited. Children's stress due to fathers' absence per se might be different from stress due to the experience of parental separation, which might include factors such as exposure to marital conflict, changes in living arrangements, and economic decline (for a review of the Divorce-Stress-Adjustment Perspective, see Amato, 2000). Therefore, divorce and fathers' absence are distinct, and each might be important.

The continuity of fathers' absence between generations, whether as a result of divorce or the dissolution of cohabitating relationships, has not been widely examined in a Canadian context in which cohabitation is relatively common. The issue of cohabitation (i.e., living with a romantic partner without being legally married) is particularly relevant in Québec, as the rate of cohabitating relationships is much higher than in the rest of North America. In 2006, approximately 25% of families in Québec included two

biological parents in cohabitating relationships, whereas 5.5% of Canadian families outside of Québec and 3.5% of American families included both biological parents in cohabitating relationships (Statistics Canada, 2007a; U.S. Census Bureau, 2009). Moreover, because dissolutions of cohabitating relationships do not typically involve costly and emotionally difficult legal proceedings, cohabitating relationships are more likely to be dissolved than marriages (Andersson, 2002; Kamp Dush & Amato, 2005). Indeed, 68% of relationship dissolutions in Québec were cohabitation separations, whereas 32% were divorces (Statistics Canada, 2006). Similarly in the United States, some minority groups are more likely to enter into non-premarital cohabitating relationships that have been found to have a higher likelihood of dissolution than marriages or premarital cohabitating relationships (Bumpass & Lu, 2001).

Whether the dissolution is that of a marriage or a cohabitating relationship, when children are involved they typically live with their mothers and have varying degrees of contact with their fathers. In 2006, 80% of single parent families in Canada and 78% of single parent families in Québec were single mother families (Statistics Canada, 2007b). Fathers make many important contributions to their children's lives, and greatly influence their children's socioeconomic, cognitive, and behavioural development (Allen & Daly, 2002; Demuth & Brown, 2004; Pougnet, Serbin, Stack, & Schwartzman, 2011; Ricciuti, 2004). The intergenerational continuity of fathers' absence (i.e., children who do not live with their fathers on a full time basis subsequently having children who also do not live with their fathers on a full time basis) has not been widely examined in a cultural context such as Québec in which cohabitating relationships are relatively common. Because relatively little research focuses on fathers' absence rather than divorce, the following

literature review will conceptualize issues related to fathers' absence utilizing the existing research on divorce.

As previously mentioned, a direct pathway has been illustrated between divorce in one generation and divorce in the next generation even after accounting for socioeconomic, demographic, parenting, and mental health factors (e.g., Amato & DeBoer, 2001). The direct pathway between fathers' absence in two generations might be assumed to follow the same pattern. One potential explanation of such a direct pathway is genetic, such that temperamental characteristics that lead to fathers' absence might be genetically transmitted from parent to child. Recent research has utilized twin and adoption studies to investigate the genetic continuity of divorce (e.g., D'Onofrio, Turkheimer, Emery, Harden, Slutske, Heath, et al., 2007); results generally indicated that whereas traits that lead to divorce such as antisocial behaviour and internalizing problems are at least partially genetically transmitted, most of the variance in the intergenerational transmission of divorce is environmental rather than genetic (for review, see Amato, 2010).

The intergenerational transfer of psychosocial risk is an additional model that helps to explain the continuity in fathers' absence across generations. In this model, undesired patterns of behaviour that develop and are manifested during childhood persist into adolescence and adulthood; the resulting family dysfunction links the parents' problematic childhood history to the subsequent problems of their own children (Caspi & Elder, 1988). According to this model, socioeconomically disadvantaged children of absent fathers might display behaviour patterns such as aggression, possibly leading to premarital cohabitation, young age at marriage, and negative interpersonal relationships,

resulting in continuity in the cycle of fathers' absence. All of these factors have been found to increase the likelihood that individuals whose parents divorced will themselves divorce (Amato, 1996; Amato & Rogers, 1997). Consequently, the direct effect of fathers' absence across generations is important to consider alongside the behaviour patterns and life circumstances that both result from and lead to fathers' absence.

SES can be considered to include individual factors, such as income and education level, as well as contextual factors, such as neighborhood quality. Both the individual and contextual aspects of SES are intimately connected with both relationship dissolution and parental absence, as financial difficulties have been found to lead to relationship dissolution (Rodrigues, Hall, & Fincham, 2006) and families with one parent absent typically have lower income levels and a lower standard of living than two parent families (Ricciuti, 2004); this is especially true for families headed by a single mother (Amato, 2000). The socioeconomic effects of parental absence can be enduring. Indeed, studies have indicated that individuals who experienced fathers' absence as children were subsequently more likely to drop out of high school, marry or become parents at a young age, and have lower status jobs and incomes later on than other individuals (Amato, 1999; Astone & McLanahan, 1991). Fathers' absence has also been found to be associated with children living in riskier neighborhoods with higher rates of unemployment and crime (Ellis, Bates, Dodge, Fergusson, Horwood, Pettit, & Woodward, 2003).

Further, adults' individual and contextual SES has been found to account for variance in predicting parental absence in their children. Indeed, individuals with fewer years of educational attainment and lower incomes have been found to be more likely to

have their relationships dissolve (Amato, 1996; Orbuch, Veroff, Hassan, & Horrocks, 2002), frequently resulting in fathers' absence. In addition, neighborhood-level economic disadvantage has been linked to lower levels of warmth during marital interactions (Cutrona, Russell, Abraham, Gardner, Melby, Bryant, & Conger, 2003); this is another possible predictor of relationship dissolution and fathers' absence. Moreover, one study indicated that fathers who had lower incomes and who were unemployed for more months were likely to live only some or none of the time with their children (Jaffee, Caspi, Moffitt, Taylor, & Dickson, 2001). Taken together, SES variables such as education, income, and neighborhood quality are likely intermediate factors in the intergenerational continuity of fathers' absence. The mechanisms behind these pathways are unclear, however, lower SES has been linked to increased alcohol and drug use, early parenthood, as well as jealousy and stress within relationships, all of which are associated with relationship dissolution (Amato & Rogers, 1997; Serbin et al., 2010).

Another factor to consider in the relation between fathers' absence in one generation and fathers' absence in the next generation involves individuals' early behaviour patterns. Specifically, individuals who experienced divorce as children have been found to demonstrate more childhood externalizing behaviours, hyperactivity, interpersonal aggression, delinquency, and conduct problems, and were more likely to be expelled from school than individuals whose parents did not divorce (DeBell, 2008; Griffin et al., 2000; Mott, Kowaleski-Jones, & Menaghan, 1997). As studies have shown that children often display externalizing behaviours several years before their parents separate (Amato & Booth, 1996; Cherlin, Furstenberg, Chase-Lansdale, Kiernan, Robins,

Morrison, & Teitler, 1991), it is likely that parental or family conflict influences both fathers' absence and childhood aggression (Amato, 2000).

In addition, aggressive individuals have been found to be more likely to experience divorce, leading to fathers' absence in their children. For example, Jaffee and colleagues (2001) found that men who had a history of conduct problems in adolescence spent less time living with their children later on than other men. Moreover, Serbin and colleagues (2010) indicated that aggressive boys were more likely to become absent fathers and aggressive girls were more likely to become single mothers than boys and girls who were not aggressive. It appears as if childhood aggression is a mediator in the intergenerational transfer of fathers' absence, possibly due to the genetic transmission of aggressive or antisocial traits that have been found to both predict relationship dissolution in parents and result from relationship dissolution in children (D'Onofrio, Turkheimer, Emery, Slutske, Heath, Madden, et al., 2005, 2006).

Finally, substance abuse has been found to be related to both previous fathers' absence and fathers' absence in the next generation. Some studies have indicated that individuals who experienced divorce and parental absence as children are likely to go on to demonstrate substance abuse (Butters, 2002). For example, boys who experienced fathers' absence have been found to be more likely than other children to use cigarettes, marijuana, and alcohol (Griffin et al., 2000; Mandara & Murray, 2006). Interestingly, Hoffman and Johnson (1998) indicated that although youth who lived with both biological parents were at the lowest risk of displaying problem drug use later on, those who lived with single mothers, single fathers, or fathers and stepmothers were at the

highest risk of developing a substance use problem, complicating the association between fathers' absence and substance abuse in offspring.

Results from additional studies indicate that individuals who demonstrate substance abuse or dependence are more likely to experience relationship dissolution. For example, Jaffee and colleagues (2001) illustrated that after accounting for marital status, men who lived only some of the time or none of the time with their children reported more marijuana and alcohol dependency and spent more months disabled by a drug problem than men who lived with their children full time. Substance abuse affects individuals and families in many ways, as substance abusers are more likely to have lower income and education levels, live in riskier neighborhoods, have aggressive or antisocial temperaments, and experience relationship dissolution (Flewelling & Bauman, 1990; Petraitis, Flay, & Miller, 1995; Rodrigues et al., 2006). Furthermore, substance abuse has been found to be genetically transmitted to some extent (Kendler, Prescott, Myers, & Neale, 2003) indicating that like divorce, substance abuse is cyclical across generations. Therefore, substance abuse is important to consider in order to understand the intergenerational transmission of fathers' absence.

In addition to SES, aggression, and substance abuse being examined as both predictors and outcomes of divorce, gender has also been considered as a possible moderator in the intergenerational transfer of divorce. Results on gender's effect, however, have been mixed, and its effects are often modest. Some studies have indicated that girls whose parents divorced were more likely to themselves experience divorce as adults, but the same was not true for boys (Amato, 1996; Teachman, 2002). Conversely, other studies demonstrated that boys whose parents were divorced were more likely than

girls who experienced divorce to display externalizing behaviours (Mott et al., 1997), to use more drugs (Mandara & Murray, 2006), and to encounter a greater post-separation decline in the home environment (Mott, 1994), all of which are predictors of divorce in the next generation. Still other studies have found that gender does not moderate the relation between divorce in one generation and divorce in the next generation (Amato & DeBoer, 2001).

The absence of a reliably illustrated gender difference in the transmission of divorce might be explained by social learning theory, which suggests that children of both genders repeat the relationship roles that they observe from their parents. Specifically, men whose fathers are absent from their homes as children lack a model of what it is to be a present father, thus reproducing the cycle by becoming absent fathers themselves (see Edwards, 1987 for review), and women whose fathers are absent from their homes as children hold less traditional gender-based family role attitudes due to being raised by single mothers, resulting in a greater likelihood of having children with an absent father (McHale, Crouter, & Whiteman, 2003). Because different and sometimes opposing effects have been illustrated, and because the majority of the literature focuses on divorce rather than fathers' absence, it is unclear what role gender plays in the intergenerational transfer of fathers' absence. It is possible, however, that gender interacts with individual and environmental factors such as educational attainment, substance abuse, and aggressive behaviour, to predict fathers' absence in different ways for men and women.

The Current Study

The purpose of the current study was to examine the pathways from fathers' absence in one generation to fathers' absence in the next generation in a sample of socioeconomically at-risk families. As the associations between childhood risk factors and later family outcomes are complex, and as suggested by the theoretical framework provided by the intergenerational transfer of psychosocial risk, both direct and indirect paths from fathers' absence, childhood aggression, and neighborhood risk through later educational attainment, family income, and substance use disorders, to fathers' absence in the next generation were included in the conceptual model (see Figure 1). Models for male and female participants were examined separately in order to determine the similarities and differences between genders in the pathways of risk across generations.

Based on the model of intergenerational transfer of psychosocial risk as well as previous literature demonstrating a direct pathway between divorce in two generations, fathers' absence during a boy's childhood was expected to predict becoming an absent father in adulthood, and fathers' absence during a girl's childhood was expected to predict being a mother with an absent partner later on. This pattern would also be predicted by social learning theory where gender is concerned, because of individuals' past experiences with gender relationship attitudes in their families of origin. Second, the childhood experience of fathers' absence was expected to predict increased neighborhood risk, decreased educational attainment and income, and increased likelihood of being diagnosed with a substance use disorder in adolescence and adulthood, which were themselves expected to predict either being an absent father (among the men) or having children with an absent father (among the women). Additionally, it was hypothesized that the childhood experience of fathers' absence would be associated with concurrent

childhood aggression. In turn, childhood aggression was expected to predict being an absent father or having children with an absent father in adulthood directly, and also via indirect paths leading from childhood aggression through educational attainment and family income to father absence in adulthood. Finally, it was anticipated that gender would interact with individual and environmental variables such as fathers' absence, childhood aggression, educational attainment, income level, neighborhood risk, and substance abuse in predicting fathers' absence in the next generation.

Method

Participants

Identification of the original Concordia Longitudinal Risk Project sample. The Concordia Longitudinal Risk Project (Schwartzman, Ledingham, & Serbin, 1985) began in the 1976-1977 and 1977-1978 school years when researchers administered a screening questionnaire to 4,109 francophone students in grades 1, 4 and 7 enrolled at schools in inner city areas of Montréal, Québec, Canada. Participation in the screening was voluntary, and over 95% of the students consented to participate. Subsequently, researchers followed up with 1,770 students who were selected to participate in the longitudinal study based on their scores on the questionnaire. Approximately equal numbers of boys and girls were selected from each grade (see below for a detailed description of the screening measure and selection criteria).

Description of the sample included in the current study. Nine hundred and eighty three individuals who were original participants of the Concordia Longitudinal Risk Project at Time 1 (T1) and who had children at Time 2 (T2), the time of the update of project records that occurred between 2001 and 2003, were interviewed during this phase

of data collection, representing 53% of the original participants. The current sample included 386 individuals (240 women and 146 men) identified from among the 938 participants and who had updated family structure and demographics information available. Therefore, the current sample of 386 participants represents a 59% attrition rate from the T2 follow-up sample ($n = 938$) and a 78% attrition rate from the T1 original sample ($n = 1,770$). The participants in the original sample ($n = 1,770$) and those in the current sample ($n = 386$) did not differ significantly from each other in regards to childhood aggression scores ($z = -1.32$; n.s.) or the SES of their families of origin measured by the quality of the neighborhood in which they lived ($z = -.49$; n.s.), indicating that the current sample is representative of the original sample. Fifty-five percent of the participants in the current sample ($n = 212$) had aggression scores below the mean, indicating that this is not an unusually aggressive sample. There were proportionally more female participants (56.1%) than male participants (49.7%) who remained in the study ($\chi^2 = 7.29, p < .01$), and the individuals who remained in the study were slightly younger (36.1 years old, standard deviation (SD) = 2.66) than the individuals who did not remain in the study (36.3 years old, $SD = 2.62$; $z = -2.29$; $p < .05$). The sample was ethnically homogenously Caucasian.

At T1, when the original participants were school-age children, 22% (83) of the sample did not live with their fathers. Data regarding the reason for fathers' absence at T1 (i.e., divorce vs. dissolution of a common-law relationship vs. never present) were not available for the current participants. At T2, when the participants were adults with children of their own, 41% (150) of participants had children who did not live with their biological fathers. This is higher than the 21% rate of single motherhood for children of

all ages in the general population of Québec in 2001 (Statistics Canada, 2003). There was no gender difference in the rate of fathers' absence at T2, as 42% of the female participants had children with absent biological fathers, and 41% of the male participants were themselves absent from their children's homes. At T2, 168 participants were in a cohabitating relationship (43.5%), 139 participants were married (36%), 33 participants were single (8.5%), 32 participants were separated (8.3%), 13 participants were divorced (3.4%), and one participant was widowed (0.3%).

At T2, the participating sample had a mean age of 34.09 years ($SD = 2.75$). Female participants had a mean age of 33.83 years ($SD = 2.76$), and male participants had a mean age of 34.53 years ($SD = 2.67$). The participating sample at T2 had a mean of 12.16 years of education ($SD = 2.42$). Female participants had a mean of 12.16 years of education ($SD = 2.51$), and male participants had a mean of 12.17 years of education ($SD = 2.26$). Finally, the current sample had a mean family income at T2 of \$45,801.50 ($SD = 29,049.92$). This is well below both the Canadian mean family income at T2 of \$80,500 (Statistics Canada, 2009) and the Québec mean family income at T2 of \$60,118 (Institut de la Statistique Québec, 2009). Female participants had a mean family income of \$43,351.74 ($SD = 28,716.73$), and male participants had a mean family income of \$49,828.51 ($SD = 29,243.47$).

Procedure

Initiation of the study (T1). Within each classroom between 1976 and 1977, boys and girls were rated in separate administrations by their peers on a questionnaire measuring aggression, withdrawal, and likeability. Children were provided with their class list and asked to nominate up to 4 boys and 4 girls in their class who best matched

each item on the questionnaire. In order to create a subsample that represented the full sample ($n = 4,109$) and also oversampled the upper tails of aggression and withdrawal to produce a large enough group of aggressive and withdrawn children to examine, researchers selected for follow-up those students who were at or above the 75th percentile of aggression and withdrawal for their gender and grade according to their peers, as well as students matched for age and gender who were in the average range on both Aggression and Withdrawal. For a more extensive description of the methodology, see Schwartzman and colleagues (1985).

Information regarding whether or not participants lived with their biological fathers at T1 was obtained in a subsequent update of project records that occurred over the telephone between 1987 and 1990. At this time, participants were asked with whom they lived in 1977.

Procedures for follow-up (T2). Participants were contacted and interviewed over the telephone between 2001 and 2003 to obtain additional information for the current study, including demographic and family structure information such as annual family income, years of education, and whether their children currently lived with their biological fathers. In addition, information regarding the risk level of the neighborhoods in which participants lived when they were adolescents was obtained using 1986 census records. Finally, trained clinical psychologists administered the SCID during in-person interviews with participants in order to gain information regarding lifetime diagnoses of clinical disorders including substance abuse and dependence.

Measures

Childhood aggression. The childhood aggression of the 386 individuals in the current study was rated at T1 using the Pupil Evaluation Inventory (PEI; Pekarik, Prinz, Liebert, Weintraub, & Neale, 1976), a peer nomination instrument that had previously been translated into French. The PEI includes 34 items that assess the reaction of peers towards the child as well as the child's behaviour, and that load onto three factors: Aggression (20 items), Withdrawal (9 items), and Likeability (5 items). PEI scale scores have been shown to be reliable, and items within each scale show high intercorrelations (Pekarik et al., 1976; Schwartzman et al., 1985).

Fathers' absence. Whether or not the 386 individuals in the original sample lived with their biological fathers at T1 was determined retrospectively between 1987 and 1990 by asking participants over the telephone: "With whom were you living in 1977?" Responses were coded as 0 when participants lived with their biological fathers, and 1 when it was indicated that participants lived only with their mothers or other adults and siblings. Whether or not the male participants lived with their biological children or the female participants had children who lived with their biological fathers at T2 was determined by asking 386 participants between 2001 and 2003: "With whom does your child currently live?" Responses were coded as 0 when the participants' children lived with their biological fathers, and 1 when it was indicated that the participants' children lived only with their mothers or other adults and siblings. Data for T2 fathers' absence were missing for 23 participants.

Family demographics. Neighborhood risk level when participants were in their late teens to early twenties (average age was approximately 19 years) was determined

retrospectively at T2 by using the first three digits of each of the 386 participants' postal code to obtain demographic information for each neighborhood according to the 1986 census. Four neighborhood indices were used to calculate neighborhood risk based on the percentage of each variable within a given census tract: single parenthood, annual family income lower than \$10,000, high school dropout, and adult unemployment. Lower neighborhood risk scores represent lower risk neighborhoods. Also at T2, the 386 participants' current annual family income and years of educational attainment were determined on the basis of their responses to demographics questionnaires administered at T2.

Substance abuse. At T2, all 386 participants were interviewed using the Structured Clinical Interview for DSM-III-R (SCID: Spitzer, Williams, Gibbons, & First, 1994), a structured interview tool that is commonly employed to make Axis I diagnoses. The SCID includes a Substance Use Disorder module that identifies lifetime diagnoses as well as diagnoses in the past 30 days for alcohol and other drugs. For the purposes of the current study, only lifetime diagnoses were considered. The SCID has been shown to have good interrater and test-retest reliability for substance use disorders (Williams et al., 1992), as well as good predictive and concurrent validity (Kidorf, Brooner, King, Chutuape, & Stitzer, 1996; Kidorf, Brooner, King, Stoller, & Wertz, 1998). In the current study, participants were coded as 1 if they had never been diagnosed with a substance use disorder, 2 if they had been diagnosed with substance abuse in their lifetime, and 3 if they had been diagnosed with substance dependence in their lifetime.

Plan for Analysis

The plan for analysis was to test the conceptual path model, shown in Figure 1, using Structural Equation Modeling (SEM) as provided by the computational analysis program of EQS 6.1 (Bentler, 2004; Kline, 2010). Due to the dichotomous nature of the primary outcome variable, EQS 6.1 employed arbitrary generalized least squares estimation (Kline, 2010; Lee, Poon, & Bentler, 1995). Of particular interest was the comparison between the female and male models and identifying differences in significant pathways between the two models. Therefore, correlation matrices to investigate differences in the correlations between the variables of interest for male participants and female participants were examined in preliminary analyses. Subsequently, structural equation models were created for male and female participants, and pathways were constrained to examine the differences in significant pathways between the two models. Pathways were considered predictive when one variable temporally preceded the other (e.g., T1 fathers' absence and T2 fathers' absence), and they were considered correlational when variables were measured at the same time point (e.g., T2 fathers' absence and T2 income). Because 23 participants were missing data on one variable (i.e., T2 fathers' absence), listwise deletion was used during SEM to account for missing data. Logistic regression analysis was used to compute the variance accounted for by each predictor variable on T2 fathers' absence.

Results

Point biserial correlation analyses indicated that T1 fathers' absence was significantly related to T2 fathers' absence for both male participants ($r = .23, p < .01$) and female participants ($r = .25, p < .01$; see Table 1). T1 fathers' absence and childhood

aggression were significantly associated with each other only for female participants ($r = .21, p < .01$). As expected, there were multiple significant point biserial and Pearson correlations between fathers' absence, childhood aggression, and neighborhood risk at T1 and family income, educational attainment, substance abuse, and fathers' absence at T2, as well as among the T2 variables for both male and female participants.

SEM was subsequently used to test the conceptual model described in Figure 1. Because the strength of correlations between variables of interest frequently differed between female and male models, and based on previous research (Serbin et al., 2010), it was hypothesized that the path coefficients for the conceptual model would be different for female and male participants. Consequently, the conceptual path model was tested separately for female participants ($n = 240$) and male participants ($n = 146$). In order to determine whether the female and male path models were significantly different, a multigroup analysis was performed by constraining coefficients for the female model to equal those of the male model. The two models were considered significantly different from each other ($\chi^2(21) = 59.43, p < .01$); therefore, female and male models were analyzed separately. Subsequently, individual pathways were constrained in order to determine whether they differed between the female and male models. The following is a description of the statistics for each model, including the comparative fit index (CFI) as well as the root mean square error of approximation (RMSEA), both methods of evaluating the adequacy of a model, as well as the similarities and differences in individual pathways between the female and male models.

The fit of the female overall model was good ($\chi^2 = 5.95, p = .43$; CFI = 1.00; RMSEA = 0.00), supporting the intergenerational transfer of risk in female participants

through the hypothesized pathways (see Figure 2). Together, the predictors explained a total of 11% of the variance in T2 fathers' absence in the female model.

In this model, female participants whose fathers were absent during childhood were at increased risk for subsequently raising children in the absence of the child's father ($\beta = .21, p < .01$). Female participants whose fathers were absent at T1 also had completed significantly fewer years of education by T2 ($\beta = -.49, p < .01$), and were more likely to have been diagnosed with a substance use disorder by T2 ($\beta = .20, p < .01$), both of which demonstrated subsequent pathways to T2 fathers' absence ($\beta = .10, p < .01$ for education; $r = -.08, p < .01$ for substance abuse), resulting in indirect pathways between T1 and T2 fathers' absence through educational attainment and substance abuse. Further, T1 fathers' absence was a predictor of neighborhood risk in young adulthood ($\beta = .42, p < .01$), which was itself a significant predictor of T2 educational attainment in female participants ($\beta = -.42, p < .01$). The latter pathway was not significant for male participants, and is one of four statistically significant differences between the male and female models when individually constraining the paths ($\chi^2 = 17.64, p < .05$).

Fathers' absence at T1 was also significantly correlated with increased childhood aggression in female participants ($r = .09, p < .01$). This correlational pathway was not significant for male participants, and constitutes the second difference between the male and female models when constraining individual pathways ($\chi^2 = 12.93, p < .10$). Finally, T1 childhood aggression in female participants marginally predicted T2 fathers' absence ($\beta = .06, p < .10$), as well as fewer years of educational attainment ($\beta = -.13, p < .01$) and decreased annual family income at T2 ($\beta = -.13, p < .01$) in female participants. The latter pathway was not statistically significant for male participants, and constitutes the third

difference between the male and female models when constraining individual pathways ($\chi^2 = 11.85, p < .10$). Both socioeconomic variables were subsequently related to T2 fathers' absence ($\beta = .10, p < .01$ for education; $r = .11, p < .01$ for income), illustrating indirect links between T1 childhood aggression and T2 fathers' absence through educational attainment and family income.

Logistic regression analysis was performed in order to determine the amount of variance accounted for by each predictor on T2 fathers' absence in the female sample. Fathers' absence at T1 accounted for a statistically significant amount of variance in T2 fathers' absence ($\chi^2(1, 240) = 13.22, p < .01$). When each additional predictor was added to the model in a separate step, results indicated that T1 aggression ($\chi^2(1, 240) = 6.82, p < .01$), T2 education ($\chi^2(1, 240) = 7.17, p < .01$), T2 family income ($\chi^2(1, 240) = 18.43, p < .01$), and T2 substance abuse ($\chi^2(2, 240) = 10.04, p < .01$) also accounted for statistically significant amounts of variance on T2 fathers' absence. The addition of these mediators in the model increased the amount of variance in T2 fathers' absence accounted for; specifically, T1 fathers' absence alone accounted for 8% of the variance in T2 fathers' absence, whereas all of the predictors together accounted for 29% of the variance in T2 fathers' absence. However, adding the mediators into the model did not statistically significantly reduce the variance in T2 fathers' absence accounted for by T1 fathers' absence, indicating that the female participants' childhood aggression, education, income, and history of substance abuse partially mediated the relation between T1 and T2 fathers' absence.

The fit of the male overall model was good ($\chi^2 = 3.10, p = .80$; CFI = 1.00; RMSEA = 0.00), supporting the prediction of the intergenerational transfer of risk (see

Figure 3). Together, the predictors explained 15% of the variance in T2 fathers' absence in the male model.

In this model, and similar to the female model, male participants whose fathers were absent at T1 were at increased risk for themselves being absent fathers at T2 ($\beta = .27, p < .01$). Furthermore, male participants who experienced fathers' absence during childhood had completed marginally fewer years of education by T2 ($\beta = -.34, p < .10$), which itself led to a marginally higher likelihood of T2 fathers' absence ($\beta = .09, p < .10$), resulting in an indirect pathway between T1 and T2 fathers' absence through educational attainment. Increased neighborhood risk during young adulthood significantly predicted T2 fathers' absence in male participants ($\beta = .08, p < .05$). This pathway was not significant for female participants, and constitutes the fourth difference between the male and female models when constraining individual pathways ($\chi^2 = 17.87, p < .05$).

Moreover, when male participants displayed increased childhood aggression, they were more likely to be absent from their children's homes at T2 ($\beta = .09, p < .05$), and to have completed fewer years of educational attainment by T2 ($\beta = -.26, p < .001$), which was itself a significant predictor of annual family income at T2 ($\beta = .35, p < .001$). The latter was marginally associated with T2 fathers' absence ($r = .07, p < .10$), resulting in an indirect link between T1 childhood aggression and T2 fathers' absence through education and income level.

Logistic regression analysis was performed in order to determine the amount of variance accounted for by each predictor on T2 fathers' absence in the male sample. Fathers' absence at T1 accounted for a statistically significant amount of variance in T2

fathers' absence ($\chi^2(1, 146) = 8.24, p < .01$). When each additional predictor was added to the model in a separate step, results indicated that T1 aggression ($\chi^2(1, 146) = 5.90, p < .05$), neighborhood risk ($\chi^2(1, 146) = 4.39, p < .05$), and T2 annual family income ($\chi^2(1, 146) = 4.00, p < .05$) accounted for statistically significant amounts of variance on T2 fathers' absence after adding T1 fathers' absence to the model. The addition of these mediators in the model increased the amount of variance in T2 fathers' absence accounted for; specifically, T1 fathers' absence alone accounted for 8% of the variance in T2 fathers' absence, whereas all of the predictors together accounted for 25% of the variance in T2 fathers' absence. However, adding the mediators into the model did not statistically significantly reduce the variance in T2 fathers' absence accounted for by T1 fathers' absence, indicating that the male participants' childhood aggression, neighborhood risk status, and income partially mediated the relation between T1 and T2 fathers' absence.

Taken together, there was a direct pathway from fathers' absence in one generation to fathers' absence in the next generation for both male and female participants that was not significantly reduced by taking socioeconomic variables into consideration. Female participants who experienced fathers' absence during childhood were also at increased risk of being rated as aggressive by their peers, living in higher risk neighborhoods as young adults, completing fewer years of education, and being diagnosed with a lifetime substance use disorder; some of these factors served as indirect links between fathers' absence in two generations. Furthermore, male participants who experienced fathers' absence during childhood and who were aggressive as children were

also at increased risk of completing fewer years of education, which was itself an important predictor of becoming an absent father.

Discussion

The aim of the current study was to illustrate the intergenerational continuity of fathers' absence in a socioeconomically disadvantaged and culturally unique sample. This pattern is especially significant in such a socioeconomically disadvantaged population because of the well-established and previously described associations between fathers' absence from the home and socioeconomic disadvantage for mothers and children. Overall, results indicated a direct pathway between childhood fathers' absence and either becoming an absent father or having children with an absent father after accounting for childhood aggression, neighborhood risk, educational attainment, family income, and substance abuse. This was true for both male and female participants, suggesting that girls who did not live with their fathers as children were more likely to later live apart from their children's fathers, and boys who did not live with their fathers as children were more likely to later live apart from their own children. The fact that none of the other predictors in the male and female models reduced the direct effect of fathers' absence in one's family of origin on either being an absent father or having children with an absent partner indicates that although these temperament, demographic, socioeconomic, and mental health variables might play roles in the intergenerational continuity in fathers' absence, the direct pathway remains important in and of itself.

Although a genetic explanation for the direct pathway in the intergenerational transfer of fathers' absence cannot be ruled out by these data, previous research in the area of divorce has indicated that environmental factors are more important in the

continuity of divorce than genetic effects (D'Onofrio et al., 2007). Indeed, Amato (1996) identified problematic interpersonal behaviour as explaining a significant amount of variance in the association between divorce in one generation and divorce in the next generation, such that children whose parents divorced were more likely to display behaviours within their own relationships (e.g., anger, jealousy, criticism) that decreased the quality of the relationship and increased the likelihood of relationship dissolution. It is possible that the intergenerational continuity in fathers' absence can be similarly explained by life course, attitude, and interpersonal behaviour factors that were not all measured in the current study.

The current results are consistent with those of Amato and DeBoer (2001), who did not find significant differences between male and female participants in the intergenerational continuity of divorce. This supports social learning theory, which maintains that the roles that men and women take within romantic relationships are influenced by the roles played by their parents within their relationships. In other words, due to the relationship models they learned from when they were children, men who had absent fathers as children were more likely than other men to become absent fathers themselves, and women who had absent fathers as children and were raised by their mothers were more likely than other women to have children with absent partners.

Results from the current study, however, indicated different indirect pathways between fathers' absence in two generations for male and female participants. Specifically, fathers' absence was significantly correlated with concurrent childhood aggression scores for female participants, but not for male participants. Although the relation between fathers' absence and childhood aggression is consistent with previous

research in the area of divorce (e.g., Griffin et al., 2000), the fact that it is only true for female participants is contrary to some previous research (e.g., Mott et al., 1997). This might be explained by the gender makeup of the sample (i.e., more female than male participants), or by the socioeconomically disadvantaged nature of the current sample. Perhaps in low SES families, girls who do not live with their fathers act more aggressively around their peers, whereas boys display aggressive behaviour regardless of whether they live with their fathers. This is consistent with results indicating that children from low SES families display more aggressive behaviour than children from high SES families, and that this relation is stronger for boys than for girls (Guerra, Huesmann, Tolan, Van Acker, & Eron, 1995).

Conversely, in the current study, male participants who were rated as aggressive by their peers were likely to later become absent fathers, whereas there was only a marginally significant pathway between childhood aggression in female participants and later having children with an absent father. A great deal of research has illustrated the continuity of aggression from childhood to adolescence and even well into adulthood, especially in men (Huesmann & Moise, 1999; Loeber & Hay, 1997; Nagin & Tremblay, 1999). Early aggressive behaviour has also been associated with later delinquency and crime (Nagin & Tremblay, 1999), decreased educational attainment (French & Conrad, 2001; Janosz, LeBlanc, Roulerice, & Tremblay, 1999), couple violence (Temcheff, Serbin, Martin-Storey, Stack, Hodgins, Ledingham, & Schwartzman, 2008), and teenage parenthood (Dearden, Hale, & Woolley, 1995) in both men and women (Pepler & Craig, 2005; Wangby, Bergman, & Magnusson, 1999). These factors might negatively affect the

quality of romantic relationships, leading to relationship dissolution and, quite often, fathers living apart from their children.

One variable that displayed differential pathways in the intergenerational transfer of fathers' absence for male and female participants was neighborhood risk. Specifically, male participants who lived in high risk neighborhoods in young adulthood were more likely than other young men to subsequently be absent from their children's homes in the current study; the same was not true for the partners of female participants. It appears as if a direct relation between neighborhood risk and being an absent father exists for men, whereas educational attainment in women might mediate this relation for their children's fathers. Perhaps young men who live in lower quality neighborhoods with a higher rate of school dropout and unemployment are likely to engage in risky behaviours such as gang activities that lead directly to young parenthood and becoming an absent father. On the other hand, young women in the same neighborhoods are likely to miss out on completing high school or pursuing higher education due to factors such as young parenthood, thus decreasing their future earning potential and increasing the likelihood that their children will experience the absence of their fathers. In other words, the context in which men live directly influences the likelihood that they will become absent fathers, whereas the context in which women live influences the individual opportunities they encounter, such as education.

Indeed, an additional indirect pathway in the continuity of fathers' absence across generations was found to include education. Notably, both men and women whose fathers were absent as children were likely to complete fewer years of education, resulting in women being more likely to have children with absent partners and men being marginally

more likely to become absent fathers. Given the socioeconomically disadvantaged nature of the current sample, as well as the well-established protective effect of education as a method of breaking the cycle of socioeconomic disadvantage, especially in young women (Serbin et al., 1998; Teachman, 2002), this finding has important implications.

Specifically, programs and policies that promote continuing education and are targeted towards children who do not live with their fathers might result in the discontinuity of fathers' absence across generations.

Finally, female participants whose fathers were absent in childhood were more likely to be diagnosed with a substance use disorder later on than female participants whose fathers were present. This pathway might be explained by the genetic transmission of substance abuse (Kendler, Prescott, Myers, & Neale, 2003), which was not measured directly in the current study. Specifically, some fathers might have been substance abusers leading to them being absent from their daughters' homes, and also influencing their daughters' susceptibility to substance use difficulties of their own. The current results, however, are inconsistent with studies that have illustrated the association between paternal absence and problematic alcohol, tobacco, and cannabis use in men only (Griffin et al., 2000; Mandara & Murray, 2006). Similar to the pathway between fathers' absence and childhood aggression, it is possible that the pathway between fathers' absence and substance abuse was not significant for male participants because men are more likely to display problematic substance use than women (Butters, 2002; Mandara & Murray, 2006). That is, paternal absence accounted for more variance in female participants' substance abuse than in that of male participants. Further inquiry is required to examine this hypothesis, especially because female participants who were

diagnosed with a substance use disorder in the current study were more likely to concurrently have children with an absent father, whereas male participants who were diagnosed with a substance use disorder were not more likely to be absent fathers. The indirect pathway in female participants from fathers' absence in childhood to later substance abuse and finally to relationship dissolution and fathers' absence for their own children is worth further exploration in future research.

Fathers' absence was assessed nearly thirty years before most of the outcomes were measured; therefore, this study design permits the exploration of trajectories of fathers' absence and childhood aggression across time. In addition, the current study design allows for the illustration of the intergenerational transfer of psychosocial risk (Caspi & Elder, 1988). Because fathers' absence in one generation predicted fathers' absence in the next generation both directly and indirectly through childhood behaviour, adult socioeconomic, and mental health factors, the current results can be considered to be demonstrative of the intergenerational transfer of fathers' absence. Therefore, the current research contributes to previous research in the area of intergenerational transmission of risk (Chase-Lansdale & Brooks-Gunn, 1995; Serbin et al., 1998; Serbin & Karp, 2004) by extending the definition of psychosocial risk to more explicitly include fathers' absence.

Results from the current study add to the body of research regarding fathering as it utilized prospective methods to ascertain the longitudinal pathways involved in the continuity of fathers' absence across generations. The socioeconomically at-risk nature of the sample as well as the cultural context of the participants also added uniqueness to this research, as it is important to recognize the long term psychosocial outcomes of fathers'

absence in a population in which cohabitating relationships are relatively more common and more likely to result in fathers' absence from their children's homes. The current study, however, had a number of limitations. Although the cultural uniqueness of the current sample is a strength of the study, it is also a limitation as it restricts the extent to which the current findings can be generalized to different populations. Moreover, the sample size was relatively small, which limited the power of the analyses as well as the number of intervening variables that could be included in the path models. Further, measures of maternal and paternal parenting were not included in the current analyses. An interesting line of future inquiry would involve determining whether positive parenting, whether by single mothers or absent fathers, mediates or moderates the risk of either being an absent father or having children with an absent father. An additional limitation is the lack of differentiation between fathers' absence from their children's homes and fathers' absence from their children's lives, as individuals from both generations who did not live with their biological fathers likely lived with them some of the time or had regular contact with their fathers. Finally, although the participants in the current study live in a cultural context in which cohabitation is relatively common, the current study was unable to differentiate between fathers' absence due to marital divorce and fathers' absence due to the dissolution of cohabitating relationships. Further examination in this area would help to clarify the long term intergenerational effects of parental separation outside the context of divorce.

In conclusion, fathers' absence in one generation's childhood predicted fathers' absence for their children over twenty years later in a culturally and linguistically unique North American population. This association was not significantly reduced by taking

behavioural, socioeconomic, and mental health factors into account, although male and female participants displayed different pathways between fathers' absence in one generation and fathers' absence in the next generation and interesting indirect pathways in the intergenerational continuity of fathers' absence were illustrated. Given current social trends in which many children who do not live with their fathers on a full time basis would never have experienced the divorce of their parents, notably in the Canadian province of Québec and in American socioeconomically disadvantaged populations, such findings related to fathers' absence per se might be more relevant than those related to divorce. The current research suggests that implementing initiatives, such as affordable programs that support couples within their relationships, in socioeconomically disadvantage communities and those in which cohabitation relationships are relatively common could help to minimize the continuity of fathers' absence across generations.

Study 2: Fathers' Influence on Children's Cognitive and Behavioural Functioning:
A Longitudinal Study of Canadian Families

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Published in the *Canadian Journal of Behavioural Science*, 2011, 43(3), 173-182

Abstract

An emerging body of research illustrates the connections between fathers and their children's development. This topic is particularly relevant in Québec, a demographically and culturally unique province in which female single parenthood is relatively common; this pattern is related to socioeconomic disadvantages that predict negative cognitive and behavioural outcomes in youth. Using data from the Concordia Longitudinal Risk Project, an intergenerational longitudinal data set collected in inner city areas of Montréal, the current study investigated the prospective relations between fathers' presence and parenting, and children's subsequent cognitive and behavioural functioning. The current sample included 138 families from lower to middle income backgrounds who participated in two waves of data collection: when children were in middle childhood and subsequently 3 to 5 years later in pre-adolescence. The results indicated that for girls only, fathers' presence in middle childhood predicted fewer internalizing problems in pre-adolescence. For both boys and girls, fathers' positive parental control predicted higher Performance IQ and fewer internalizing problems over six years later. These findings add to the increasing body of literature suggesting that fathers make important contributions to their children's cognitive and behavioural functioning, and point to the benefits of developing policies that encourage fathers to spend time with their children (i.e., parental leave for men) and promote positive fathering and involvement through parenting courses.

One type of family that is becoming increasingly common in North America is the family headed by a single mother. In 2006, approximately 13% of Canadian families and 22% of families in Québec included biological fathers who lived apart from their children (Statistics Canada, 2007a). Families with one parent who does not live at home typically have lower income levels than two-parent families (Ricciuti, 2004). In 2006, 7.7% of Canadian children and youth in two-parent families fell below the low income cutoff, compared with 32.3% of children and youth in female single-parent families (Statistics Canada, 2009). The developmental outcomes of parental absence and low socioeconomic status (SES), including income level and educational attainment, are important to take into account in Québec, as research has indicated that Québec students who attend public schools in non-disadvantaged areas are one and a half times more likely to graduate high school than students attending schools in economically disadvantaged areas (Gouvernement du Québec, 2008). SES is related to indicators of success in adolescence, and one factor that is related to lower family SES is the absence of a parent from the home.

Most of the research involving families and child outcomes focuses on associations between mothers' parenting and child development (Roy & Kwon, 2007). A growing body of existing research illustrates the associations between fathers' presence; specifically, fathers living full-time in their biological children's homes, and child development. However, many researchers argue that fathers' presence is not a detailed enough variable to understand children's experiences (Flouri, 2007); thus, fathers' parenting is often measured in conjunction with fathers' presence in their children's homes. In order to more closely examine the role of fathers in children's development,

the current study investigated the prospective associations between fathers' presence and parenting and children's cognitive and behavioural functioning in an urban French-Canadian context.

In general, studies outside of Canada have demonstrated that fathers' presence in their children's homes and parenting are positively associated with children's cognitive outcomes across time after controlling for various demographic and socioeconomic factors (for review, see Allen & Daly, 2002). The majority of the recent fathering research has been conducted with preschool-aged children. For example, a study conducted in the United States by Ryan and colleagues (2006) found that children who lived with two highly supportive parents at 2 years of age had higher Bayley Scales of Infant Development-II (Bayley, 1993) Mental Development Index scores (reflecting cognitive and language development) at 3 years of age than children who lived with one or no supportive parents after controlling for SES. Studies conducted with older offspring of absent fathers have supported these findings. For example, a study conducted in the United States indicated that children whose fathers lived with them full-time had higher scores on reading and math tests than children whose fathers did not live with them (Teachman et al., 1998). Moreover, paternal parenting has been shown to be positively associated with children's cognitive outcomes for different age groups (Bronte-Tinkew et al., 2008; Fagan & Iglesias, 1999). For example, one study found that fathers' supportiveness when children were 2-years-old was associated with children's intellectual functioning scores at 2 and 3 years of age (Cabrera, Shannon, & Tamis-LeMonda, 2007). Another study found that paternal warmth when children were 12-

years-old was a predictor of school achievement two years later; this remained true after controlling for the effect of maternal warmth (Chen et al., 2000).

In addition to examining fathers and children's cognitive functioning, the association between fathers' presence in the home and children's behavioural functioning has been considered (for review, see Allen & Daly, 2002). In general, research has indicated that children who experience fathers' absence from the home at various points during childhood are more likely than other children to display internalizing problems, such as sadness, social withdrawal, and anxiety, as well as externalizing problems, such as aggression, impulsivity, and hyperactivity (Amato & Gilbreth, 1999; Carlson, 2006; Demuth & Brown, 2004). For example, one study that was conducted in the United States found that children with absent fathers displayed more antisocial behaviour than children whose fathers were present in their home, even after controlling for the effects of paternal antisocial behaviour, SES, and presence of stepfathers (Piffner et al., 2001).

Additional research exists illustrating the relation between paternal parenting and behaviour problems in offspring (Carlson, 2006; Chen et al., 2000; Flouri, 2007; Griffin et al., 2000; Levine Coley, 2003). Notably, research has indicated that fathers' use of parental control accounts for some variance in predicting child outcomes such as aggression (Chen et al., 2000). Studies have illustrated that parental control can result in both appropriate behaviour (Maccoby & Martin, 1983) as well as defiant behaviour (Baumrind, 1971) in children; the direction of the outcome most likely depends on the nature of the control employed by parents, as restrictive and authoritarian forms of control have been found to result in more negative outcomes than nonrestrictive and authoritative forms of control (Becker, 1964; Pettit, Laird, Dodge, Bates, & Criss, 2001).

Whereas the previously described studies all indicate that fathers' presence in their children's homes and parenting predict child cognitive and behavioural outcomes, some other studies have found that this is not the case after controlling for socioeconomic factors (Carlson & Corcoran, 2001; Crockett et al., 1993; DeBell, 2008; Entwisle & Alexander, 1996). Fathers' presence is intimately connected to family SES, as families with two working parents generally have higher incomes than single income families. Studies also indicate that higher SES families include fathers who display more positive parenting (Cabrera et al., 2007; Pleck, 1997). Additional studies illustrate a direct pathway between SES and child cognitive and behavioural outcomes (Cabrera et al., 2007). Socioeconomic indicators must be considered when examining outcomes related to fathers' presence and parenting.

Additional factors that are often considered when examining the relation between fathers and child outcomes include the quality of the home environment and the occurrence of conflict within the couple relationship. Regarding the former, previous research has demonstrated that living in a chaotic and unstimulating home environment is related to children's cognitive functioning and behaviour problems at school (Bradley & Rock, 1985; Carlson & Corcoran, 2001; Hetherington, 1989). Regarding the latter, studies indicate that children are more likely to develop difficulties including depression, anxiety, social withdrawal, and school absence if they are regularly exposed to displays of aggression between their parents (Flouri, 2007; Grych & Fincham, 2001). Measuring the quality of the home environment typically involves the measurement of SES, parental absence, and parenting quality, and couple conflict has been shown to be associated with each of these factors (Fergusson & Horwood, 1998; Kaczynski, Lindahl, Malik, &

Laurenceau, 2006; Sturge-Apple, Davies, & Cummings, 2006). Therefore, the home environment and couple conflict are both important to control for when predicting child developmental outcomes.

Finally, a factor that is often considered when conducting research in this area is child gender, as research indicates a moderating effect of gender in the relation between fathers and offspring development. Specifically, some studies demonstrate that fathers predict development in sons more than daughters because they serve as male role models for their sons (Biller & Kampton, 1997; Bronte-Tinkew et al., 2008; Mott et al., 1997). However, a smaller body of research has illustrated that fathers are more important for their daughters' development than that of their sons (Levine Coley, 1998), particularly regarding nonverbal cognitive abilities (Hetherington, Camara, & Featherman, 1983; Sandqvist, 1995). As different and sometimes opposing effects have been illustrated, it is unclear how child gender moderates the association between fathers' presence and children's outcomes.

Many existing studies regarding the association between fathers and their children's development have methodological limitations. For example, mothers who participate in studies are often asked to report on the parenting strategies of the children's fathers (Roy & Kwon, 2007). Research has demonstrated, however, that reports of paternal parenting differ between mothers and fathers (Mikelson, 2008). Furthermore, most studies have not included participants who live in a cultural context in which English is not the primary language spoken and the majority of neighborhoods are socioeconomically disadvantaged (Roy & Kwon, 2007); notable exceptions include the Supporting Father Involvement Project (Cowan, Cowan, Pruett, & Wong, 2009) and the

Fragile Families studies (Carlson & McLanahan, 2002). Third, the majority of studies in this area measure fathers' presence and parenting and child development concurrently; few prospective studies exist that examine the roles that fathers play on the trajectory of cognitive and behavioural development over the course of childhood (Roy & Kwon, 2007). Finally, many of the prospective studies are designed to examine the relation between fathers' presence and parenting and the development of offspring between the ages of approximately 2 and 5 years of age; more research is required to understand the ways in which fathers influence the development of children in middle childhood and adolescence.

Current Study

The current study addressed some of these limitations by examining the prospective associations between fathers' presence in their children's homes and their parenting, and cognitive and behavioural outcomes in socioeconomically at-risk children beyond the preschool years. The study was carried out using data from the Concordia Longitudinal Risk Project (Schwartzman, Ledingham, & Serbin, 1985), an intergenerational study of low income Francophone families in Québec (Statistics Canada, 2007b).

Based on the existing literature regarding the relation between fathers' presence and parenting and children's cognitive and behavioural outcomes, it was hypothesized that (1) children who live with their fathers in middle childhood and whose fathers demonstrated positive early parenting abilities would have increased levels of cognitive functioning and (2) lower levels of behaviour problems in pre-adolescence than other children. It was also anticipated that (3) gender would moderate the relations between

fathers' early parenting and presence in middle childhood and cognitive functioning and behaviour problems later on in pre-adolescence. As the literature is mixed regarding the direction of the moderation, this hypothesis is exploratory.

Method

Participants

The current sample included 138 children and their families who were participants in the Concordia Longitudinal Risk Project (Schwartzman et al., 1985), a large intergenerational longitudinal research program. Participating families had been previously assessed when their children were in early childhood (ages 2 to 5 years), when they had indicated an interest and a willingness to participate in further studies. At time 1 (T1) of the present study, which occurred in the early 2000s, the children were between 6 and 10 years of age ($M = 7.69$, $SD = 1.01$). Seventy-six of the children were girls and 62 were boys. The families in the study had a median annual family income of \$41,860 (range = \$6,905.31 – \$145,600.00; $SD = \$24,918.68$), and 73% of families fell below \$60,118, which was the mean income level in Québec at the time (Institut de la Statistique du Québec, 2009). Mothers and fathers had completed an average of 12.23 and 11.77 years of education, respectively ($SD = 2.37$ and 2.14 , respectively), and 17% and 14% of the families had mothers and fathers who had not completed high school, respectively. At T1, 24.6% of the children (34 of 138) did not live with their fathers. This is comparable to the 21% rate of single motherhood for children of all ages in the general population of Québec in 2001 (Statistics Canada, 2003). Moreover, 54 (52%) of the fathers who lived with their children were married to the children's mothers, 46 (45%) of the fathers were co-habiting with the children's mothers, and 3 (3%) were separated

from the children's mothers (i.e., custodial fathers); datum regarding civic status was missing for one participant.

The second wave of data collection, or time 2 (T2), occurred in the mid 2000s between 3 and 5 years after T1 when the children were between 9 and 13 years of age ($M = 10.06$, $SD = 1.56$). Ninety-six of the 138 families from T1 participated at T2; attrition was primarily due to the families moving away. The families in the study had a median annual income at T2 of \$46,826 (range = \$7,926.10 – \$178,573.20; $SD = \$33,295.55$), and 70% of families fell below the mean income level in Québec, which at the time was \$68,452 (Institut de la Statistique Québec, 2009). The mean income at T2 of \$53,394.58 was not significantly greater than the mean income at T1 of \$44,498.88 ($t_{86} = -1.88$, N.S.). When the 8 families with annual T2 incomes of higher than \$100,000 were treated as outliers and excluded from analyses, the results were not significantly different from those of the full sample; therefore, these families were included in the current analyses. At T2, 33.7% of the children (32 of 96) did not live with their fathers, which was not significantly different than the 24.6% rate of fathers' absence at T1 ($\chi^2 = .02$, N.S.). Forty-three (57%) fathers who lived with their children were married to the children's mothers, 28 (37%) were co-habiting with the children's mothers, and 4 (6%) were separated from the children's mothers (i.e., custodial fathers).

Missing Data

As noted above, there was participant attrition between the two time points as well as missing data within the variable set for the 138 participants in the current study. It was hypothesized that these data were not missing completely at random, as families with lower occupational prestige, more children, and parental absence frequently have chaotic

home environments and less time and motivation to provide complete data. The mean level of parental occupational prestige at T2 was significantly greater than the mean prestige level at T1 ($t_{132} = -3.05, p < .01$), and the mean number of children at T2 was significantly smaller than the mean number of children at T1 ($t_{135} = -2.30, p < .05$), indicating that those families with greater levels of occupational prestige and fewer children were more likely to remain in the study between the two time points. Results from Little's MCAR test confirmed that data were not missing completely at random ($\chi^2 = 553.54, p < .05$); therefore, multiple imputation (MI) was employed in the current study in order to estimate missing data for those variables with less than 20% of its cases missing (Allison, 2001; McKnight, McKnight, Sidani, & Figueredo, 2007). The Amelia program (Honaker, King & Blackwell, 2010), set at a tolerance of .001, was used to impute 20 data sets (number of imputations ranged from 10 to 28). The imputed data were aggregated and used in all subsequent analyses.

Measures

Family demographics and fathers' presence in the home. Annual family income, maternal educational attainment, paternal educational attainment, and child age were determined by participants' responses to demographics questionnaires administered at T1 and T2. Whether or not biological fathers lived with their children was determined by asking: "With whom does your child live?" Responses were coded as 1 when biological fathers were indicated to be living with their children, and 0 when children lived only with their mothers or other adults and siblings. The current analyses focused on fathers' presence in the home at T1 when children were in middle childhood rather than earlier

when children were preschool-aged in order to achieve greater variance in fathers' presence (i.e., to reflect the fact that some fathers left between early childhood and T1).

Parental control. The Parenting Dimensions Inventory – Short Version (PDI; Power, 2002) is a 27-item self-report measure of five dimensions of parenting that had been administered to fathers 1 to 3 years prior to the current waves of data collection, when their children were between 2 and 5 years old. It was administered during this period because more fathers were present to participate in data collection when their children were preschool-aged than when their children were older, and to capture the impact that fathering children in this sensitive period has on later development. To assess the type of parental control employed with children, the Type of Control dimension of the PDI was used for the present study. This dimension employs 11 questions with a 4-point Likert scale response format to assess the mechanisms through which parents guide and shape the behaviour of their children, and includes Physical Punishment, Material or Social Consequences, Reasoning, Scolding, and Reminding scales. For the purposes of the current study, an average of the five scale scores was used in the analyses ($\alpha = .69$, 95% Confidence Interval (CI) = .55 - .79, $M = 1.29$, $SD = .53$). Higher scores indicate more positive forms of control. Alpha values for the scales that make up the Type of Control dimension have been found to range from .84 to .92 and have good validity (Power, 2002; Slater & Power, 1987).

Couple conflict. Prior to the current waves of data collection when children were preschool-aged, mothers and fathers in the sample completed the Conflict Tactics Scale (Straus, 1979), a self-report measure of intimate partner and child maltreatment. Scales measure sexual, psychological, and physical attacks committed by both partners over the

past 12 months as well as anytime in the past. Nine items that inquire about lifetime occurrences of couple conflict (e.g., *Have you ever thrown anything at your partner, or has your partner ever thrown anything at you?*) were included in the current data analyses ($\alpha = .84$, 95% $CI = .82 - .86$, $M = .11$, $SD = .01$). Item responses were coded as 1 when couple conflict was reported, and 0 when couple conflict was not reported. The complete measure has good reliability, indicated by an alpha of .88 for couple conflict, as well as good concurrent and construct validity (Straus, 1979).

Home environment. The quality of the families' home environment was assessed at T2 using the Home Observation for Measurement of the Environment – Revised Edition scale (HOME: Caldwell & Bradley, 1984). This instrument combines observations by trained researchers with structured interviews with both parents (if available) to obtain information about children's home environment. This 59-item tool is broken down into eight scales that assess parental responsiveness, physical environment, learning materials, active stimulation, encouragement of maturity, emotional climate, parental involvement, and family participation; for the purposes of the current study, an overall score was used in the analyses ($\alpha = .61$, $CI = .48 - .71$, $M = 40.66$, $SD = 5.35$). Scores range from 0 to 59, and higher scores indicate higher quality home environments. The HOME inventory is a well-standardized measure that demonstrates good reliability and validity properties (Totsika & Sylva, 2004).

Cognitive functioning. Children's cognitive functioning was assessed at two different times. Three years prior to the two waves of data collection described in the current study, the Bayley Scales of Infant Development – Second Edition (Bayley, 1993) had been administered to those children who were below 42 months of age ($n = 66$), and

the Stanford-Binet Intelligence Scale – Fourth Edition (Thorndike, Hagen, & Sattler, 1987) to those children between 42 and 72 months of age ($n = 72$). Each child had received an IQ score that was converted into a z-score and then employed in the analyses in order to control for the overall stability of IQ over time.

At T2, the Wechsler Intelligence Scale for Children – Third Edition (WISC-III: Wechsler, 1991) was administered. This commonly used measure of children's intellectual functioning provides Verbal IQ scores, which are an indication of children's skills in language and comprehension, as well as Performance IQ scores, which are an indication of children's visual-spatial and nonverbal analytical reasoning skills. The WISC-III was administered to children when they were between the ages of 9 and 13 years by individuals with master's level training or above in clinical psychology. Children's Verbal IQs ranged from 62 to 133 ($M = 98.59$, $SD = 15.82$), and their Performance IQs ranged from 72 to 140 ($M = 101.86$, $SD = 11.87$).

Behaviour Problems. Teachers assessed children's behaviour problems at school by completing the Child Behavior Checklist - Teacher Report Form (TRF: Achenbach & Rescorla, 2001) at T2 when children were between 9 and 13 years old. This commonly used measure of behavioural functioning includes 120 items for which the respondent assigns a score between 0 and 2 for each question; a score of 0 indicates an absence of the behaviour, a score of 1 indicates that the child performs the behaviour sometimes, and a score of 2 indicates that the child often performs the behaviour. Scores of externalizing and internalizing behaviours are obtained, as well as an overall problem behaviour score that encompasses both internalizing and externalizing scores. Higher scores indicate increased problem behaviours. Teachers were employed as informants of children's

behaviour problems rather than mothers, fathers, or the children because fathers' absence can result in parent conflict, maternal distress, and child distress. Teachers were assumed to be a somewhat more independent source of information than mothers, fathers, or children themselves when examining the effects of fathers' absence on offspring behaviour problems. The children in the full sample ranged in TRF externalizing behaviour T-scores from 39 to 78 ($M = 53.19$, $SD = 8.10$), and they ranged in TRF internalizing behaviour T-scores from 37 to 76 ($M = 54.88$, $SD = 8.30$). Twenty-eight percent of the children had TRF problem T-scores in the "borderline" range or above (T-score > 60), compared with an expected 18% of non-referred children in the general population (Achenbach & Rescorla, 2001).

Procedure

Families participated in the current study at two different time points (T1 and T2) that were 3 to 5 years apart. At each time point in the current study, the children's families were contacted by telephone to solicit participation. Those who agreed at T1 were mailed a package of questionnaires including a demographics measure assessing family structure. At T2, families were again contacted and consent was obtained over the telephone and subsequently in writing. Children whose families agreed to participate were tested both at school and at home, in three separate sessions spanning over a two-week period. Demographics questionnaires were completed, and information regarding family structure, maternal educational attainment, annual family income, and children's age was obtained. Also at T2, the HOME inventory was administered to families. During this wave of data collection, children underwent cognitive testing, and teachers were

asked to complete the TRF for the target children. Families were financially compensated for their participation in the first and second waves of the study.

Strategy for Analysis

Hierarchical linear regression analyses were performed with the full sample in predicting children's T2 IQ and TRF scores. Key assumptions of linear regression, including linear relationships, little multicollinearity, and no auto-correlation, were tested, and the number of predictors used in each analysis was appropriate for the number of participants in the study. As 138 families participated in the current study, there was power to detect a small to moderate effect or greater; effect sizes as small as .06 were found to be statistically significant in the current analyses.

In the first model of the analyses, children's gender and age at T2 were entered into the equation. Family income, maternal education, and paternal education at T2 were entered into the second model in order to account for socioeconomic factors. Subsequently, fathers' presence at T1, the quality of the home environment at T2, early couple conflict, fathers' use of early control, and early IQ were entered respectively in separate models of the analyses. Additional predictors (e.g., parents' relationship status, mothers' use of early control) were included in preliminary analyses; however, because the number of participants allowed for a maximum number of predictors, those predictors that were not statistically significantly associated with the outcome variables were excluded from the final regression analyses. Interactions between fathers' presence at T1 as well as fathers' use of early control and each of the other predictors were examined in order to ascertain any possible moderation effects by entering the interaction terms in the final models of each of the regression analyses. Lastly, median splits were conducted

with the continuous predictors in order to graphically depict statistically significant and interesting interactions.

Results

The first hypothesis held that children who live with their fathers in middle childhood and whose fathers demonstrated positive early parental control would have higher levels of cognitive functioning later on in development than other children. The point biserial correlation between T1 fathers' presence and T2 Performance IQ was statistically significant ($r(136) = .18, p < .05$), as was the Pearson correlation between fathers' use of positive control and T2 Performance IQ ($r(136) = .35, p < .01$). Preliminary analyses indicated that Verbal IQ was not associated with either fathers' presence ($r(136) = .05, N.S.$) or fathers' control ($r(136) = .19, N.S.$; see Table 2); therefore, the following results describe only analyses with Performance IQ.

Hierarchical linear regression was employed to predict T2 Performance IQ. In the final model of the main effects analysis ($F(10, 137) = 9.99, p < .01$), there was a statistically significant effect for fathers' use of control ($\beta = .38, p < .01$), although the effect of fathers' presence was not statistically significant ($\beta = .13, N.S.$; see Table 3). Thus, the first hypothesis was supported for paternal control but not for fathers' presence. Statistically significant main effects for T2 home environment, couple conflict, and early IQ were also found.

Interactions between the predictors of T2 Performance IQ were subsequently examined. The interaction between T1 fathers' presence and T2 paternal education predicted T2 Performance IQ when it was entered into the regression analysis, such that for those children whose fathers had fewer years of education, having a father absent

predicted lower Performance IQ scores than having a father present ($B = -4.53, p < .01$; see Figure 4).

In summary, children whose fathers displayed more positive early parental control had higher Performance IQ scores at T2 than other children after controlling for family and socioeconomic factors. In addition, fathers' presence at T1 predicted higher Performance IQ scores at T2 for fathers with fewer years of educational attainment.

The second hypothesis held that children who live with their fathers in middle childhood and whose fathers demonstrated positive early parenting skills would have lower levels of behaviour problems later on in development than other children. Preliminary analysis indicated that the point biserial correlation between T2 TRF externalizing and T1 fathers' presence ($r(136) = -.15, N.S.$) as well as the Pearson correlation between T2 TRF externalizing and early paternal control ($r(136) = .02, N.S.$) were not statistically significant. The Pearson correlation between T2 TRF internalizing and fathers' early use of control was statistically significant ($r(136) = -.45, p < .01$), although the point biserial correlation between T1 fathers' presence and T2 TRF internalizing was not statistically significant ($r(136) = -.14, N.S.$; see Table 2). Consequently, the following results describe only results with T2 TRF internalizing problems.

Hierarchical linear regression was used to predict T2 internalizing problems. In the final model of the main effects analysis ($F(10, 137) = 8.55, p < .01$), there were statistically significant main effects for early fathers' control ($\beta = -.58, p < .01$) and T1 fathers' presence ($\beta = -.18, p < .05$) in predicting T2 internalizing problems, supporting

the second hypothesis. There were also statistically significant main effects for T2 income, maternal and paternal education, and early couple conflict (see Table 4).

Interactions between the predictors of T2 internalizing problems were subsequently examined. The interaction between children's gender and T1 fathers' presence predicted TRF internalizing problems, such that girls with fathers who were present had lower internalizing problem behaviour scores than girls with fathers who were absent ($B = -5.21, p < .05$; see Figure 5), while the same was not true for boys.

Taken together, children whose fathers displayed less positive parental control and whose fathers were absent had higher internalizing scores later on than other children. Further, fathers' presence predicted decreased internalizing problem scores later on for girls but not for boys.

Discussion

The aim of the current study was to illustrate the ways in which fathers' presence in the home and parenting predict developmental outcomes of children over time in a disadvantaged sample living within a Québec context. Overall, results indicated that fathers' presence in middle childhood predicted later behavioural outcomes in their children, and fathers' early use of control predicted both cognitive and behavioural outcomes later on in development. This was illustrated utilizing a prospective methodology with a culturally and linguistically distinct longitudinal sample of socioeconomically at-risk families, and after accounting for such potentially confounding factors as annual family income, the quality of the home environment, parental educational attainment, and couple conflict.

The first hypothesis that children whose biological fathers demonstrated positive early parental control and were present in middle childhood would have increased levels of cognitive functioning later on than other children was partially supported, although only for nonverbal cognitive functioning. Specifically, children whose fathers used more positive early parental control had higher Performance IQ scores later in development than other children. Past research suggests that fathers enhance their children's cognitive functioning through play (MacDonald & Parke, 1986; Pruett, 1998); perhaps fathers who demonstrated the positive use of parental control during play strengthened children's nonverbal abilities. The effect of paternal control on children's nonverbal cognitive functioning was statistically significant over a span of 6 to 10 years (i.e., early childhood to pre-adolescence), and accounted for more variance in Performance IQ scores than any other predictor, even when "baseline" IQ at preschool age was controlled.

In addition to nonverbal cognitive functioning, results from the current study demonstrated that children whose fathers displayed more positive early control and were present in middle childhood had fewer behaviour problems at school later in development compared with other children, supporting the second hypothesis. However, this was only true for internalizing behaviour problems, a result that contradicts studies that suggest that fathers' involvement predicts both internalizing and externalizing problems in children (Carlson, 2006; Chen et al., 2000). On the other hand, a study by Levine Coley (2003) that examined African-American father-daughter relationships indicated that daughters whose fathers were absent and who experienced alienation and disengagement in their relationships with their fathers were more likely to also experience symptoms of depression and problem behaviours at school, but not aggressive behaviours. It is possible

that the results from the current study are similarly due to the quality of pre-adolescent children's relationships with their present and absent fathers. Father-daughter relationship quality was not measured in the current study, but it might be more predictive of internalizing problems than externalizing problems in offspring.

In examining statistical interactions in predicting internalizing problems in pre-adolescence, the current results suggest that girls whose fathers were absent in middle childhood had significantly higher levels of internalizing behaviours at school than girls whose fathers were present; the same was not true for boys. Past research has illustrated significant associations between fathers' absence and increased behaviour problems in children (Chen et al., 2000; Carlson, 2006; Demuth & Brown, 2004; Flouri, 2007; Pffiffner et al., 2001); however, this is the first study to our knowledge that has found these associations for daughters and not sons. It is possible that these findings are a result of girls' increased stress and negative affect because of factors that have been found to be associated with breakdowns in marital relationships and fathers' absence such as family discord, mothers' difficulties upon family disruption, and negative father-daughter relationships (Kerig, Cowan, & Cowan, 1993; Sigle-Rushton & McLanahan, 2004); these factors were not measured in the current study, so this remains a hypothesis for future research. Furthermore, perhaps fathers' presence influenced the type rather than the level of internalizing problems that boys experience at school (i.e., sadness when father is absent vs. anxiety when father is present), a difference that was not captured in the current analyses. Future research with a larger sample could use the Syndrome and DSM-oriented scales of the TRF to examine whether various internalizing symptoms are differentially related to fathers' presence in girls and boys.

In both of the regression analyses, fathers' early use of control enhanced the effect of fathers' presence during middle childhood in predicting pre-adolescent cognitive and behavioural outcomes. Specifically, fathers' presence marginally predicted Performance IQ and significantly predicted internalizing problems at school only when fathers' control was included in the model. It is possible that this suppression effect is due to the nature of the measurement of paternal control in the current study, as those fathers who reported using the most positive types of early parental control might have also been the fathers who remained living with their children between three and five years later. Past research has indicated a significant association between family structure and paternal parenting (e.g., Carlson, 2006; Griffin et al., 2000); however, fathers' use of early control and fathers' presence during middle childhood were not significantly correlated in the current study. Further research is required to fully understand the relation between fathers' presence and parenting characteristics in predicting outcomes in offspring.

The current study illustrated the significant effects of socioeconomic factors on children's concurrent cognitive functioning and behaviour problems. Specifically, the quality of the home environment predicted children's concurrent Performance IQ. Because the regression coefficient was negative, a suppressor effect might have occurred; this result should be replicated by future research before making further interpretations. Furthermore, family income, maternal education, and paternal education predicted children's concurrent internalizing problems. Unexpectedly, fathers who were more educated had children with higher levels of internalizing problems; this finding had no precedent in the literature, and should await replication before interpreting. In general, fathers' presence and early control predicted children's later development even after

accounting for SES factors, supporting results from previous studies (Cabrera et al., 2007; Ryan et al., 2006). These results suggest that fathers' presence in middle childhood and early control might be important for children's later cognitive and behavioural functioning for reasons other than fathers' income contribution to the family, even among socioeconomically at-risk families.

Although the present study contributed to the literature in a number of ways, it also had several limitations. The size of the sample was small; this limited the number of control variables that could be included in the regression analyses. An additional limitation is the use of fathers' presence as a predictor despite the argument that it is not detailed enough to understand children's experiences (Flouri, 2007), and more specifically, the lack of differentiation between fathers' absence from their children's homes and fathers' absence from their children's lives. It is likely that some children in the sample who did not live with their biological fathers had regular contact with their fathers, which could perhaps account for the small and marginal associations between fathers' presence and child outcomes in the current study. Had father involvement been measured in addition to fathers' presence, it might have mediated the relation between fathers' absence and children's outcomes, as has been demonstrated in some previous research (e.g., Astone & McLanahan, 1991; Allen & Daly, 2002; Carlson, 2006).

Moreover, the measurement of fathers' parenting was restricted to parental control used with young children; an interesting line of future inquiry would involve examining additional parenting dimensions in the interactions between fathers and children later in development, a direction that could not be pursued in the current study due to lack of additional parenting measures in the original data set. Additionally,

measurements of fathers' parenting were obtained by self-report questionnaires; richer information regarding father-child relationships could be obtained by observing fathers in interactions with their children. Moreover, some scales that were employed in the current study demonstrated low Cronbach alpha coefficients (e.g., PDI, HOME); therefore, the correlations that were found might have been attenuated due to greater measurement error. Finally, only teachers' reports of children's behaviour problems were included in the current analyses. As previous research has indicated that reports of the development of behaviour problems vary within and across informants (Keiley, Bates, Dodge, & Pettit, 2000), future analyses could consider reports from parents and the children themselves in addition to teachers' reports to gain a comprehensive view of children's behaviour problems.

In conclusion, fathers' early use of positive control predicted both increased nonverbal cognitive performance and decreased internalizing problems later in development, and fathers' presence in middle childhood predicted decreased internalizing problems later in development. The question of family composition is especially relevant in Québec, as the rate of common-law unions is much higher than in other Canadian provinces (25% of families with children in Québec compared with 5.5% in Canada; Statistics Canada, 2007b). Further, common-law unions are more easily and more often dissolved than marriages (Andersson, 2002; Kamp Dush & Amato, 2005), frequently resulting in single mother families. Because of Québec's unique demographics and social customs, the current research suggests that it is essential that the province formulate policies that would encourage increased and positive forms of contact between children and their fathers. Initiatives such as parental leave for men and parenting classes that

emphasize the role of fathers could help to maximize children's development from early childhood to pre-adolescence.

General Discussion

The purpose of the current thesis was to investigate the roles that socioeconomically disadvantaged Francophone fathers play in their children's social, cognitive, and behavioural development. To that end, three key questions were examined: (1) What were the direct and indirect pathways between fathers' absence in one generation and fathers' absence in the next generation? (2) To what extent did fathers' presence and parenting predict children's later cognitive and behavioural functioning? (3) To what extent did fathers' presence and parenting differentially affect the development of sons and daughters? These three questions are addressed in this discussion, and a conceptual model of fatherhood in a culturally unique and socioeconomically at-risk sample is outlined. Finally, the general strengths and limitations that arose across both studies as well as directions for future research to further explore fathers' roles in children's development are discussed in this section.

Fathers and their children's development

Together, the current studies suggest that fathers play important roles in their children's development via their presence in their children's homes as well as their use of positive control with their children. This research supports the perspective that development is a process that occurs within a social context (Gauvain & Perez, 2007). Fathers were found to influence their children's social, cognitive, and behavioural functioning both directly as well as via proximal and more distal variables, as predicted by the intergenerational transfer of psychosocial risk (Caspi & Elder, 1988) as well as a theoretical framework of fatherhood such as the model created by Cabrera and her colleagues (2007).

However, additional theoretical frameworks of fatherhood were supported by the current research. Specifically, aspects of Bronfenbrenner's ecological theory (1986) can be identified in the results of Study 1, in which factors at different ecological levels, such as fathers' absence, child temperament, and family socioeconomic status, all contributed to the prediction of fathers' absence in the next generation. Furthermore, the results of Study 2 supported attachment theory (Bretherton, 1985) such that the positive use of parental control accounted for a relatively large portion of the variance in both their children's cognitive and behavioural functioning. As a secure attachment style involves a balance of connection and independence within the parent-child relationship (Bowlby, 1990; Eccles, Early, Fraser, Belansky, & McCarthy, 1997; Klaus, Kennell, & Klaus, 1996) and as this balance is often achieved through parents structuring their young children's behaviour (Bowlby, 1990), the current results united concepts related to attachment with fathers and developmental outcomes in children. Because the play activities between fathers and their children were not measured in either of the current studies, Paquette's model of the activation relationship (2004) cannot be contrasted with the aforementioned attachment model in describing the associations between fathers and their children's cognitive and behavioural development; this is a possibility for future research with a socioeconomically disadvantaged and culturally unique sample such as that included in the current research.

Social capital theory (Coleman, 1988) was also considered when examining the role of fathers in different aspects of their children's development. It appears as if this framework, by which fathers' major contribution to their children's development is financial, is also supported by the current data with socioeconomically disadvantaged

samples. In both studies, fathers' absence is demonstrated to be statistically significantly associated with their children's later increased neighborhood risk, fewer years of educational attainment, decreased annual family income, and a lower quality of the home environment. Furthermore, these socioeconomic factors were demonstrated by the current data to be related to outcomes such as fathers' absence experienced by the next generation, cognitive functioning, and behavioural development. Together, these results support social capital theory.

However, it is unclear whether financial factors were the most important contributions by fathers towards their children's development. Indeed, fathers' absence was demonstrated in both studies to predict children's outcomes over and above the effects of family income and neighborhood risk. Similarly, increased maternal educational attainment was demonstrated to be associated with a lower likelihood of their children growing up with absent fathers as well as having fewer behaviour problems, indicating that the level of education attained by mothers might be considered to be a protective factor for children, a finding that has been described in previous research (Dubow & Luster, 1990; Serbin, Cooperman, Peters, Lehoux, Stack, & Schwartzman, 1998). In addition, fathers' use of positive control in Study 2 predicted children's cognitive and behavioural development over and above the effects of family income, fathers' absence, and maternal educational attainment. Interestingly, fathers' absence, mothers' years of education, and fathers' parenting skills are likely to be directly or indirectly related to fathers' financial contributions to the family. For example, single-parent families are more likely than two-parent families to have lower family income levels (Amato, 2000; Hao, 1996; Ricciuti, 2004; Thomson, Hanson, & McLanahan,

1994). Furthermore, assortative mating would predict that individuals with similar educational achievement and aspirations are more likely than individuals with drastically different levels of education to enter into a relationship (Mare, 1991). Finally, men with more education and higher income levels have been found to demonstrate more positive parenting skills than other men (Cabrera, Shannon, & Tamis-LeMonda, 2007; Pleck, 1997). Therefore, further examination is required to untangle fathers' socioeconomic contributions to their children's development from other factors such as maternal and paternal parenting, educational attainment, and presence in their children's homes.

Gender differences in outcomes of fathers' absence and parenting

Both studies included in the current research included exploratory hypotheses pertaining to children's gender. Together, results from both studies suggest that fathers influence both their sons' and their daughters' development in similar as well as disparate ways. Regarding similarities, both males and females whose fathers were absent as children were more likely to demonstrate decreased cognitive performance as well as an increased likelihood that their own children experienced fathers' absence. Furthermore, positive fathers' parenting was found to predict increased cognitive and behavioural outcomes in both sons and daughters. These gender similarities are to be expected when considering fatherhood using such theoretical frameworks as attachment theory and the activation model, as both attachment and activation relationships are applicable to father-son and father-daughter relationships.

However, the current results also indicated some gender differences in the prediction of and response to fathers' absence. In particular, different pathways were found for males and females amongst fathers' absence, childhood aggression,

neighborhood risk, substance abuse, and fathers' absence in the next generation. Such gender differences would be anticipated when examining fatherhood using Bronfenbrenner's ecological theory, which postulates that development occurs through dynamic, reciprocal relations between an individual and the other people, objects, and representations across ecological systems. Certainly, gender influences many aspects of an individual's biological, social, cultural, and emotional experience across the lifespan, and it is not surprising that gender should play a role in many of the factors (e.g., childhood aggression, socioeconomic status, mental health) that were found to influence the intergenerational transfer of fathers' absence in the current research.

Conceptual model

As is evident by the various theoretical frameworks of fatherhood that have been described throughout the current research, there is no individual all-encompassing theory of fatherhood (Day & Lamb, 2004). Instead, "the role of the father has been diversely conceptualized in light of numerous contextual factors, including father characteristics, relational factors, maternal characteristics, and child characteristics" (Bronte-Tinkew et al., 2008, pp. 1213). In order to integrate the relevant results from both studies, a conceptual model of fatherhood over the lifespan of their children was created. This model illustrates the current findings regarding the associations between fathers' absence and parenting and their children's proximal and distal outcomes, while also taking early child and family factors into account (see Figure 6).

In essence, the conceptual model shows fathers' absence to predict proximal outcomes in children, notably increased internalizing problems, as well as distal outcomes in offspring, specifically, fathers' absence in the next generation. Early

childhood factors, such as aggression and children's gender, have been illustrated as playing a role in the pathway between fathers' absence and such distal outcomes in their children. Furthermore, fathers' parenting, specifically positive early parental control, has been shown to predict such proximal outcomes in their children as nonverbal cognitive functioning and internalizing problems. Finally, family factors such as annual family income, parental educational attainment, the quality of the home environment, and couple's conflict are illustrated as being associated with both fathers' absence and parenting, as well as predictive of both proximal and distal child outcomes. While previous research supports each of the pathways in this conceptual model, further investigation is required to more fully understand these associations as well as to examine additional mechanisms, such as the quality of mother-child and father-child relationships, involved in the associations between fathering and children's development.

Strengths, limitations, and future directions

Data from the Concordia Longitudinal Risk Project as well as the longitudinal and prospective design used in current research allowed for a unique opportunity to examine the ways in which fathers' absence and parenting abilities are related to multiple outcomes in offspring over the lifespan. There are many benefits to employing a prospective and longitudinal design in the examination of fathers' roles in their children's development, such as the ability to illustrate trajectories of behaviour over time as well as the reduction of the recall bias that can accompany retrospective study designs. The moderate and long-term time spans that were included in the current longitudinal research (i.e., a 6- to 10-year period as well as a 30-year period) are also relatively unique, and allow conclusions to be drawn regarding the outcomes of fathers' activities across the

lifespan of their children. Furthermore, the multiple time points employed in the current research (i.e., early childhood, middle childhood, pre-adolescence, young adulthood, and adulthood) allowed for proximal as well as distal predictors and outcomes to be evaluated in the associations between fathers' absence and parenting and the social, cognitive, and behavioural development of their offspring.

In addition to the prospective and longitudinal design, the socioeconomically at-risk nature of the samples employed in both studies as well as the cultural context of the participants added uniqueness to this research, as French-speaking individuals who live in inner city neighbourhoods of a large Canadian city in which common-law relationships are socially normative have not been examined outside of the Concordia Longitudinal Risk Project. Despite the specificity of the sample, the current research supported results obtained from large American data sets (e.g., National Early Head Start Research and Evaluation Study), suggesting that the results of the current research might be generalizable to different populations.

Although the present research contributed to the literature in a number of ways, it also had several limitations. Notably, the size of the samples in both studies was relatively small, especially when data from multiple points in time were employed and analyzed; this limited the number and type of variables that could be included as control or mediating variables in the analyses as well as the number and type of analyses that could be carried out. For example, although the cultural uniqueness of the current population in terms of how normative common-law relationships are is one strength of the current research, the small sample size precluded separate analyses for married, divorced, common-law, and separated parents. As such, one interesting direction for

future research would be to examine patterns of fatherhood across these groups in order to more fully understand the mechanisms of common-law relationships and their outcomes on children. An additional interesting direction for future research might involve considering the presence of stepfathers in the association between biological fathers and their children's development. Furthermore, although the prospective and longitudinal study design was a primary strength of the current research, and while causal relations between predictors and outcomes are theoretically possible because of temporal sequencing, the analyses employed within the current studies were correlational rather than experimental, which must be taken into consideration before interpreting the results.

An additional and important limitation of the current research is the dependence within both studies, at least in part, on fathers' presence as a predictor of children's outcomes. This was due to the variables that were measured during the various time points of the Concordia Longitudinal Risk Project, as this data set was not originally developed to examine the role that fathers play in their children's development. Notably, the current research was required to define fathers' absence in their children's homes as fathers' absence in their children's lives, which is certainly not the case in many families. Consequently, many large studies on fatherhood focus more on the theoretical framework of father involvement in their children's lives proposed by Lamb, Pleck, Charnov, and Levine (1985) rather than on fathers' presence or absence (e.g., Early Head Start Father Studies Work Group; Early Childhood Longitudinal Study – Birth Cohort 9-month Father Study). Fathers' involvement is a more detailed measure of fatherhood and it allows for the relation between fathers' absence and involvement to be examined in predicting children's outcomes, which has been illustrated in previous research (e.g., Allen & Daly,

2002; Carlson, 2006). Therefore, one direction for future research might involve measuring fathers' involvement in their children's lives in addition to fathers' absence from their children's homes in a culturally and socioeconomically similar population.

Additional directions for future research might involve examining the pathways that were not included in the current research (see Figure 6) with a French-Canadian urban population at high socioeconomic risk. For example, it would be interesting to examine the associations between cognitive and behavioural performance during childhood or pre-adolescence and the likelihood that the children will later grow up to either be absent fathers (for boys) or mothers to children whose fathers are absent (for girls). Furthermore, the associations between boys' cognitive and behavioural abilities and their future parenting skills would also be enlightening to examine in a population such as that included in the Concordia Project. Finally, additional research could illustrate the pathways between at-risk fathers' parenting abilities and the likelihood that their grandchildren will experience fathers' absence. These lines of inquiry might help to identify protective factors in the intergenerational transfer of psychosocial risk.

Conclusions

The current findings replicated some of the previous research suggesting the importance of fathers, both in terms of presence in their children's lives and positive parenting, in predicting social, cognitive, and behavioural outcomes in both their sons and daughters across the lifespan. The socioeconomically disadvantaged nature of the participants and their urban French-Canadian cultural context that includes high rates of common-law relationships added uniqueness to the current research. Implications that are suggested by the current findings include promoting policies and initiatives such as the

early identification of and support for children of divorced or separated parents in multiple areas of development, parenting classes that emphasize fathers and the positive use of parental control, as well as affordable programs that support couples within their relationships in order to encourage increased and positive forms of contact between children and their fathers and to begin to decrease the continuity of fathers' absence across generations. Future research might evaluate the efficacy of such social interventions with socioeconomically disadvantaged families in preventing the intergenerational transmission of psychosocial risk.

Tables

Table 1

Zero-Order Correlations Between all Variables in the Male (N = 146; above diagonal) and Female (N = 240; below diagonal) Samples Within the Concordia Project

	1	2	3	4	5	6	7
1. Fathers' absence (T1)	--	.06	.10	.23**	-.14 ^t	-.10	.14 ^t
2. Childhood aggression	.21**	--	-.08	.26**	-.30**	-.07	.06
3. Neighborhood risk	.18**	.04	--	.18*	-.03	.03	.12
4. Fathers' absence (T2)	.25**	.21**	.06	--	-.23**	-.21**	.17*
5. Years of education	-.24**	-.20**	-.25**	-.23**	--	.30**	-.24**
6. Family income	-.14*	-.24**	-.15*	-.33**	.45**	--	-.11
7. Substance abuse	.17**	.18**	.09	.28**	-.22**	-.18**	--

Note. T1 = Time 1; T2 = Time 2.

^tp < .10. *p < .05. **p < .01.

Table 2

Correlations Between all Variables in the Full Sample (n = 138)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. T1 father presence	--	-.09	.18*	.07	-.14 ^t	-.15 ^t	.09	-.11	.34**	.20*	.11	.15 ^t	.38**	-.23**
2. Father control		--	.35**	.19 ^t	-.45**	.02	.26**	-.04	-.06	-.37**	.07	.05	.02	.13
3. T2 PIQ			--	.59**	-.35**	-.07	.20*	-.02	.20*	.19*	.29**	.50**	.19*	-.24**
4. T2 VIQ				--	-.29**	-.08	.01	-.16	.27**	.41**	.19 ^t	.54**	.29**	-.32**
5. T2 Intern.					--	.26**	-.27**	.05	.07	-.01	.02	-.22*	-.24**	.18*
6. T2 Extern.						--	-.30**	.32**	-.11	-.17*	-.19*	-.24**	-.53**	.18*
7. Child gender							--	-.10	-.03	.00	-.06	.21*	.16 ^t	.08
8. T2 child age								--	-.14 ^t	-.13	-.06	.00	-.22*	.16 ^t
9. T2 income									--	.58**	.24**	.20*	.52**	-.27**
10. T2 mom ed.										--	.40**	.41**	.47**	-.38**
11. T2 dad ed.											--	.26**	.15 ^t	-.17*
12. Early IQ												--	.39**	-.26**
13. T2 HOME													--	-.46**
14. Couple conflict														--

Note. T1 = Time 1; T2 = Time 2; Intern = Internalizing; Extern = Externalizing; HOME = Home Environment.

** $p < .01$. * $p < .05$. ^t $p < .10$

Table 3

Hierarchical Linear Regressions for T2 Performance IQ in the Full Sample (n = 138)

Model	1	2	3	4	5	6	7	Interactions	
	β	β	β	β	β	β	β	Part	<i>B</i>
Child gender	.20*	.22**	.21**	.21*	.24**	.13	.06	.06	
Child age (T2)	-.00	.04	.04	.05	.06	.08	.03	.03	
Family income		.15	.11	.10	.13	.03	.10	.07	
Maternal education (T2)		-.01	-.01	-.02	-.07	.23 ^t	.07	.04	
Paternal education (T2)		.28**	.27**	.27**	.27**	.14 ^t	.10	.08	
Father presence (T1)			.10	.09	.07	.14 ^t	.13 ^t	.12	
HOME (T2)				.04	-.04	-.13	-.22*	-.16	
Early couple conflict					-.22*	-.23**	-.19*	-.16	
Early father control						.44**	.38**	.31	
Early IQ							.41**	.34	
Father presence X paternal education									-4.53**
Father control X gender									-12.48 ^t
<i>F</i>	2.74 ^t	4.73**	4.17**	3.57**	3.91**	6.78**	9.99**		
<i>F</i> -change	2.74 ^t	5.86**	1.30	.16	5.39*	24.19**	26.63**		
<i>R</i> ² (total adjusted)	.03	.12	.12	.12	.15	.28	.40		

Note. T1 = Time 1; T2 = Time 2; HOME = Home Environment.

** $p < .01$. * $p < .05$. ^t $p < .10$.

Table 4

Hierarchical Linear Regressions for T2 Teacher Report Form Internalizing Problems in the Full Sample (n = 138)

Model	1	2	3	4	5	6	7	Interactions	
	β	β	β	β	β	β	β	Part	B
Child gender	-.27**	-.27**	-.25**	-.23**	-.23**	-.08	-.07	-.07	
Child age (T2)	.02	.03	.02	-.03	-.03	-.04	-.04	-.04	
Family income (T2)		.11	.16	.23*	.23*	.36**	.35*	.25	
Maternal education (T2)		-.07	-.07	.04	.04	-.35**	-.33**	-.20	
Paternal education (T2)		.01	.02	.01	.01	.18*	.18*	.16	
Father presence (T1)			-.16 ^t	-.09	-.08	-.18*	-.18*	-.16	
HOME (T2)				-.31**	-.25*	-.13	-.12	-.09	
Early couple conflict					.15	.17*	.16*	.14	
Early father control						-.59**	-.58**	-.47	
Early IQ							-.04	-.04	
Father presence X gender									-5.21*
<i>F</i>	5.39**	2.34*	2.50*	3.51**	3.44**	9.53**	8.55**		
<i>F</i> -change	5.39**	.36	3.10 ^t	8.70**	2.62	48.19**	.26		
<i>R</i> ² (total adjusted)	.06	.05	.06	.11	.13	.36	.36		

Note. T1 = Time 1; T2 = Time 2; HOME = Home Environment.

***p* < .01. **p* < .05. ^t*p* < .10.

Figures

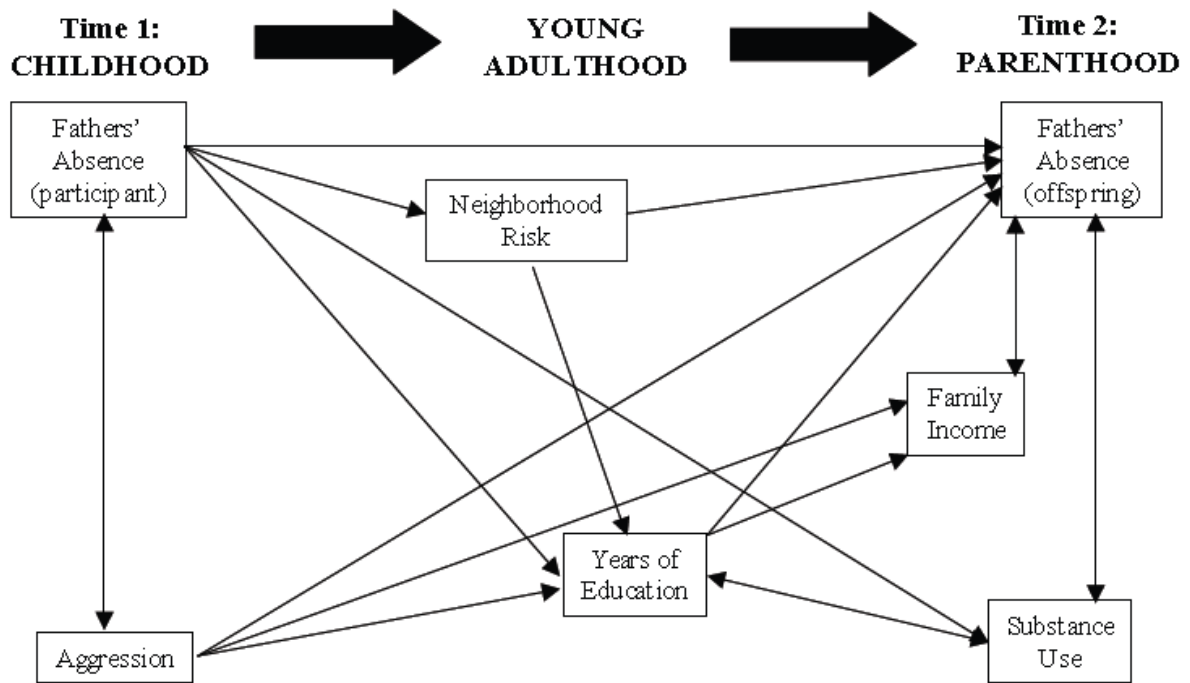


Figure 1. Conceptual model of fathers' absence during the childhoods of participants predicting the subsequent absence by the participant (or co-parent) during the childhoods of their own children, 20 years later

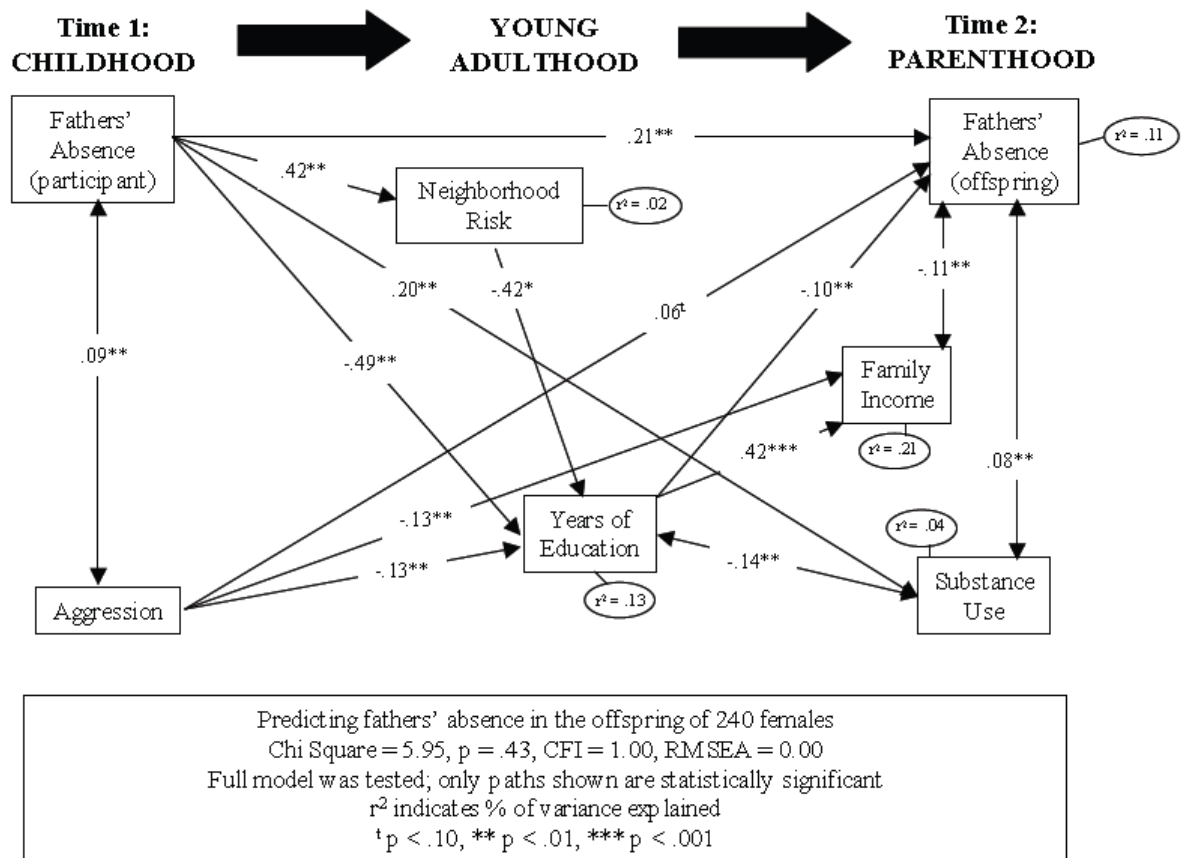


Figure 2. Predictors of 240 female participants having children who experience fathers' absence

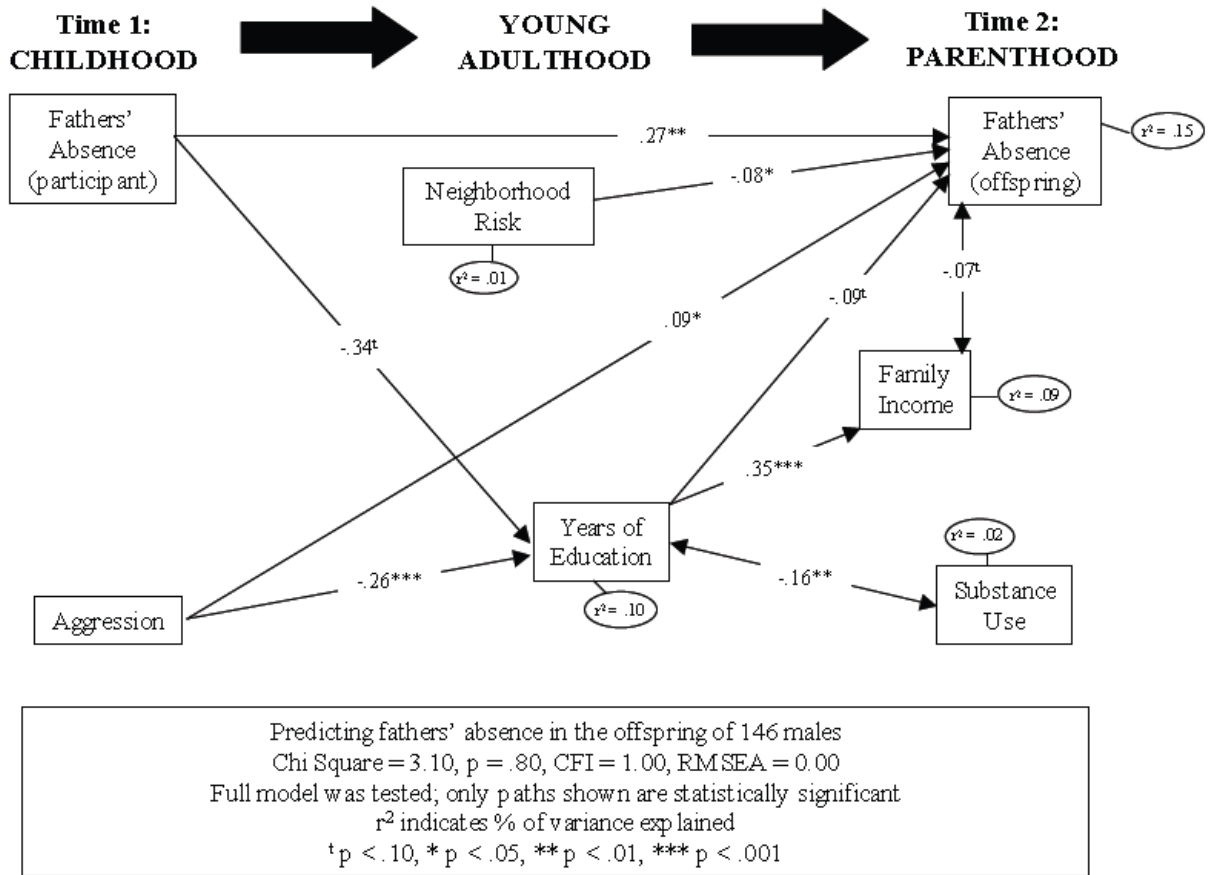


Figure 3. Predictors of 146 male participants becoming absent fathers

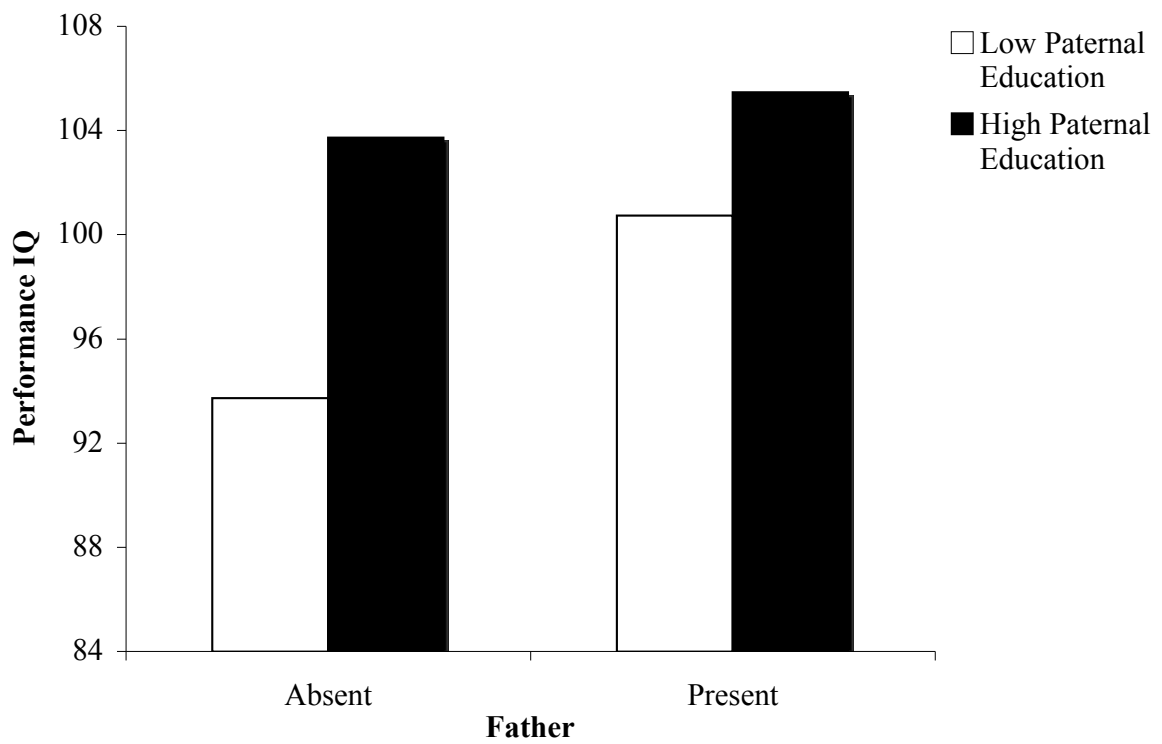


Figure 4. Interaction between fathers' presence in middle childhood and paternal educational attainment in pre-adolescence in predicting later Performance IQ scores in pre-adolescence

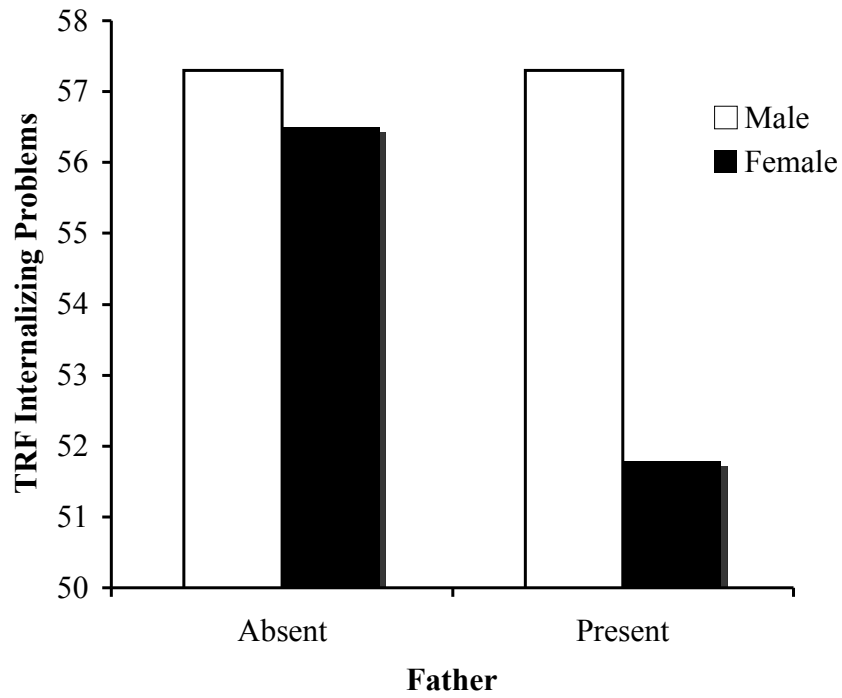


Figure 5. Interaction between fathers' presence in middle childhood and children's gender in predicting later Teacher Report Form (TRF) internalizing problems in pre-adolescence

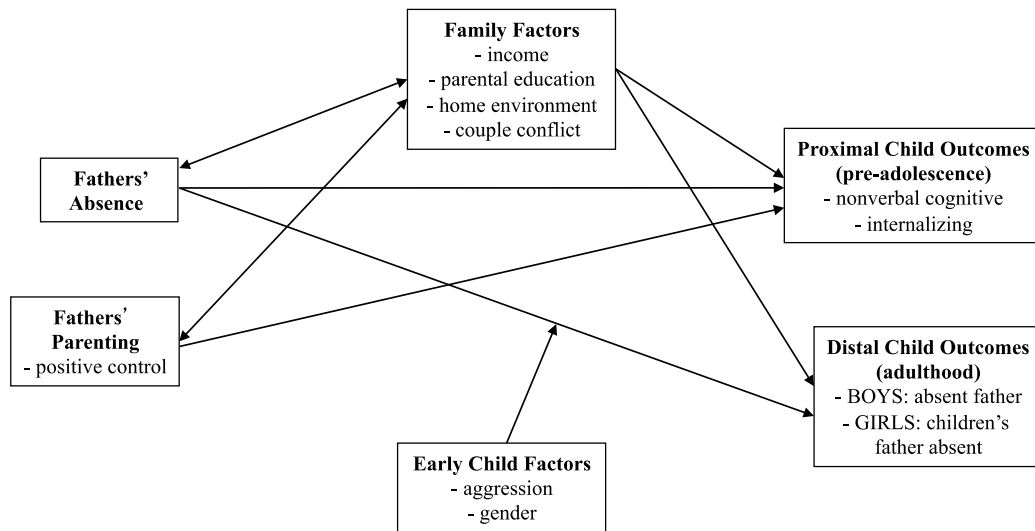


Figure 6. Conceptual model of the associations between early child, family, and father factors and child outcomes in a socioeconomically at-risk population.

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