Assessing parenting from an ecological perspective in a Canadian city

by

Robin T. Fitzgerald, M.A., B.A.

A Thesis submitted to
the Faculty of Graduate Studies and Research
in partial fulfillment of
the requirements for the degree of

Doctor of Philosophy

Department of Sociology and Anthropology
Carleton University
Ottawa, Ontario

December, 2007

© Robin T. Fitzgerald, 2007

Library and
Archives Canada

Bibliothèque et
Archives Canada

Published Heritage
Branch

Direction du
Patrimoine de l'édition

395 Wellington Street
Ottawa ON K1A 0N4
Canada

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence

ISBN: 978-0-494-36785-8

Our file Notre référence

ISBN: 978-0-494-36785-8

NOTICE:

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

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

AVIS:

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

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

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

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

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

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

Abstract

This study investigates the ways that parents residing in disadvantaged neighbourhood contexts are influenced by the structural and social arrangements in those places. A theoretical framework is developed using an ecological approach that extends social disorganization theory to account for neighbourhood effects on parenting behaviour, in particular, how neighbourhood structural adversity may condition the availability and utility of social support, and collective efficacy for parents. A multilevel analysis strategy is employed to assess neighbourhood effects on three parenting practices including discipline effectiveness, parental investment and parental involvement. The study relies on cross-sectional data from the community component of the National Longitudinal Survey of Children and Youth collected in Winnipeg, Manitoba in 2000.

Findings indicate that average parenting practices varied significantly across neighbourhoods in Winnipeg, and a large part of this variation could be explained by different structural features of neighbourhoods, over and above individual controls. There was also some evidence that neighbourhood structural disadvantage was linked to the relationship between parenting and children's outcomes. In addition, the mediating effect of neighbourhood social cohesion played some role in changes in parenting behaviours; however, this effect was not strong. Study findings also demonstrated that parents' own social resources, measured by their perceived access to social support, were differently associated with parenting practices in different neighbourhood structural environments. Overall, the results point to the importance of considering

parenting strategies, and ultimately children's development, from within an ecological framework that considers the multiple contexts in which families are situated.

Acknowledgements

Over the course of writing this dissertation, I have received guidance and support from many people. In particular, I would like to thank my thesis supervisor, Zhiqiu Lin, who provided technical advice as well as enthusiastic and consistent encouragement to finish the project. I am grateful to my committee members Colleen Dell and Karen March for their support and advice throughout this project. I also benefited from the ideas and thought provoking questions of my two external examiners, Rick Linden and Adelle Forth. Thank you all.

I would like to thank Holly Johnson for her encouragement to start and finish this project and Roy Jones and Jillian Oderkirk from Statistics Canada for facilitating the opportunity for me to complete the work. I am also grateful to Tracey Leesti from Special Surveys Division at Statistics Canada for her contribution and assistance in providing access to the data set.

Not least, I thank my family and friends. My parents, Ross and Cathy and siblings Carroll and Steven all provided encouragement and inspiration in important and different ways. My learned and witty friends Lorri, Dave, Ruth, Steve and Lawrence formed a community of support over many brunches, dinners and runs. Most of all, Charlie deserves my thanks for his enduring support, patience and humour through the good and the bad, for constantly reminding me that it was possible to finish this dissertation, and for providing me with many greatly appreciated diversions along the way.

Table of Contents

Abstract.....	ii
Acknowledgements.....	iv
Table of Contents.....	v
List of Tables	vii
List of Figures	ix
 Chapter 1.....	 1
1.0 Introduction.....	1
2.0 Neighbourhoods, poverty and families	4
3.0 Looking ahead: Chapter overview	15
 Chapter 2.....	 18
1.0 Introduction.....	18
2.0 Theories of parenting: Within and beyond the household.....	19
3.0 Theories of neighbourhood and implications for parenting.....	29
4.0 Summary and hypotheses	43
 Chapter 3.....	 48
1.0 Introduction.....	48
2.0 Data sources	49
3.0 The study area.....	53
4.0 Measures	60
5.0 Analytic techniques.....	75
 Chapter 4.....	 87
1.0 Introduction.....	87
2.0 Results.....	93
3.0 Chapter 4 discussion and summary.....	105
 Chapter 5.....	 111

1.0	Introduction.....	111
2.0	Results.....	114
3.0	Chapter 5 discussion and summary.....	141
Chapter 6.....		148
1.0	Introduction.....	148
2.0	Results.....	153
3.0	Chapter 6 discussion and summary.....	178
Chapter 7.....		186
1.0	A précis of the study: Themes and research implications.....	186
2.0	Applications: Implications for policy and programs	196
3.0	Limitations and future directions	200
References.....		204
Appendix A: Parenting variables		219
Appendix B: Children's problem behaviour score items.....		226
Appendix C: Neighbourhood structural variables		228

List of Tables

Table 3.1: Comparison of demographic characteristics across study area	56
Table 3.2: Comparison of selected characteristics for the highest and lowest income neighbourhoods.....	59
Table 3.3: Parenting practices factor pattern for principal components analysis with varimax rotation	63
Table 3.4: Descriptive statistics	70
Table 3.5: Neighbourhood census variable factor pattern for principal components analysis with varimax rotation	73
Table 4.1: OLS estimates of parenting practices	95
Table 4.2: OLS regression estimates of child outcomes.....	97
Table 4.3: OLS estimates of parental social support predicted by SES and family factors	100
Table 4.4: OLS estimates of parenting practices predicted by perceived support and individual factors	102
Table 4.5: OLS estimates of parenting practices predicted by individual and neighbourhood factors	104
Table 5.1: Neighbourhood-level OLS regression models of parenting characteristics on neighbourhood characteristics	116
Table 5.2: Linear multilevel empty models of parenting practices	118
Table 5.3: Linear multilevel models of parenting practices	125
Table 5.4: Linear multilevel models of children's verbal ability (PPVT-R) scores	130
Table 5.5: Linear multilevel models of children's problem behaviour scores	137
Table 6.1: Linear multilevel models of social support as a moderator of the influence of neighbourhood structural conditions on parenting	159
Table 6.2: Linear multilevel models of the influence of neighbourhood social cohesion on the social support/discipline effectiveness relationship.....	165
Table 6.3: Linear multilevel models of children's verbal ability (PPVT-R) scores—the influence of parents' social support	172

Table 6.4: Linear multilevel models of children’s behavioural problem scores—the influence of parents’ social support	174
Table 6.5: OLS individual-level regression models of children’s verbal ability (PPVT-R) scores—test of moderating effect on support	177

List of Figures

Figure 2.1: Ecological model of parenting	46
Figure 3.1: Study area, Winnipeg School District Number 1, within the City of Winnipeg.....	54
Figure 3.2: Parenting continuum.....	65
Figure 5.1: Cross-level interaction between neighbourhood socioeconomic disadvantage and the slope of children's reading ability on parental involvement.....	134
Figure 5.2: Cross-level interaction between neighbourhood heterogeneity and the slope of children's reading ability on parental investment	135
Figure 5.3: Cross-level interaction between neighbourhood mobility and the slope of children's behaviour problems on parental involvement.....	140
Figure 6.1: Parental social support by family socioeconomic status quartiles	154
Figure 6.2: Average parental social support by neighbourhood structural features quartiles.....	156
Figure 6.3: Cross-level interaction between neighbourhood residential mobility and the slope of discipline effectiveness on social support	162
Figure 6.4: Cross-level interaction between neighbourhood socioeconomic disadvantage and the slope of parental investment on social support	163
Figure 6.5: Cross-level interaction between neighbourhood cohesion and the slope of discipline effectiveness on social support.....	167
Figure 6.6: Cross-level interaction between neighbourhood socioeconomic disadvantage and the slope of verbal ability on social support.....	170
Figure 6.7: Support as a moderator of the relationship between parenting and children's verbal abilities across different neighbourhood contexts	175

Chapter 1

Introduction

1.0 Introduction

Over the course of the last two decades there has been steady growth in research regarding the structural conditions and social processes of neighbourhoods and how they relate to problem behaviours, academic achievement and health outcomes of children and youth. The influence of neighbourhood contexts has been argued to have become increasingly salient to children living in impoverished conditions, due to the rise in concentrated poverty in North American cities since the 1970s. While the importance of parents' direct role in shaping their children's development has received vast theoretical and research attention, their role as intermediaries between the neighbourhood context and children has received much less attention.

Parenting decisions and practices are influenced by varied skills, experiences, resources and opportunities. Available research has suggested that parenting also depends in part on the levels of stress and supportive relationships that may be experienced in contexts beyond the family. Thus, neighbourhood environments with high levels of structural disadvantage and impaired social networks, collective will and shared goals have been linked to lower average levels of child achievement and developmental success as well as to particular parenting behaviours. Research concerned with understanding the influence of social ties on individual behaviour has indicated

that, on the one hand, having access to supportive social relationships may lessen the negative influence of disadvantaged environments on families; but, on the other hand, the influence of this support may be shaped by where one lives, or more specifically by the “attitudes, norms, behaviours and resources of one’s neighbors” (Fram 2003, 2).

At the broadest level, my aim in this dissertation is to comment on the ways that parents might encounter, access, and be influenced by societal arrangements outside the family. In this undertaking I am interested in geographically concentrated disadvantage in the Canadian urban context, and its connection to the behaviours and outcomes of parents and their children. This investigation has implications for understanding the way that inequality may influence parenting strategies and ultimately children’s outcomes.

The study is situated within an ecological theoretical tradition that considers the influences of *places* over and above the influences of individual differences (e.g., Kornhauser 1978; Sampson, Raudenbush and Earls 1997; Wilson 1987). I engage sociological theories concerned with the interaction between individual agency and circumstances and larger societal structures (Bandura 1997; 2000; Bourdieu 1986; Lin, Dean and Ensel 1986; Coleman and Hoffer 1987; Sampson, Morenoff and Earls 1999; Sampson and Morenoff 2004). I extend social disorganization theory to account for variation in the parenting practices of individuals living in different family and neighbourhood conditions. In addition, I incorporate theories of social support and collective efficacy to provide a framework for understanding the mediating and moderating potential of social relationships on the effects of neighbourhoods on parents.

More narrowly, my aim in this dissertation is to assess the way that parents of young children may be influenced with respect to their parenting practices by the structural and social contexts of the neighbourhood in which they live. I employ a multilevel statistical approach to assess the connection between parents and their neighbourhood contexts based on survey data for a sample of five- and six-year-old children in the City of Winnipeg in the year 2000. The study sample is drawn from the central area of Winnipeg which encompasses a relatively large variation in average neighbourhood income levels. Among cities in Canada, Winnipeg ranks among the highest in terms of its degree of neighbourhood income segregation, or concentration of low-income residents within certain neighbourhoods (Hatfield 1997; Heisz and McLeod 2004; Picot and Pyper 2000; Ross, Houle, Dunn and Aye 2004). Consequently, these data provide an opportunity to investigate whether and how parents manage to successfully negotiate child rearing responsibilities across a range of neighbourhood environments.

The contributions of this dissertation are: first, to expressly examine the role of parents in conditioning neighbourhood contexts for their children which has been understudied to this point in the large neighbourhood effects literature; second, to shed light on the relationship between social support and broader social structures; and third, to examine these relationships with the Canadian urban context, in order to assess whether it is possible to generalize the findings from the primarily American theory and research across national borders.

The purpose of the remainder of this chapter is to lay the groundwork for the ecological approach to be taken in the dissertation and for the focus on neighbourhoods as a conceptual unit of interest. Specifically, I outline the motivation, methodological issues and approaches, major findings and important gaps in the large body of research concerned with “neighbourhood effects”. The chapter concludes with an overview of the remaining chapters.

2.0 Neighbourhoods, poverty and families

2.1 *Why neighbourhoods? The changing poverty landscape in urban areas*

[T]here are many reasons to be concerned with high-poverty neighborhoods in addition to the poverty of individuals. First among them is the premise that neighborhoods matter, that the economic and social environments of high-poverty areas may actually have an ongoing influence on the life course of those who reside in them. That is, poor neighborhoods have an independent effect on social and economic outcomes of individuals even after taking account of their personal and family characteristics, including socioeconomic status. Of greatest concern are the effects that harsh neighborhood conditions have on children, whose choices in adolescence can have lifelong consequences (Jargowsky 1997, 4–5.)

Jargowsky’s observation reflects a sentiment that is behind a relatively recent shift in theory and research on child and youth development toward explanations that go beyond the immediate or even extended family. Specifically, beginning in the 1990s there was a notable increase in research on possible neighbourhood influences on the development and outcomes of children and youth (for reviews see Leventhal and Brooks-Gunn 2000; Sampson, Morenoff and Gannon-Rowley 2002). This large

multidisciplinary body of work has foundations in early sociological theory and research on the ecology of cities (Park 1915; Shaw and McKay 1942/1969; Suttles 1972) and its subsequent theoretical adaptations and methodological improvements (Sampson and Groves 1989; Sampson, Raudenbush and Earls 1997). However, to a large degree the increase in “neighbourhood effects” research in the 1990s was motivated by a well-documented rise in concentrated poverty within cities. In the United States, Wilson (1987) and others (Jargowsky 1997; Massey and Denton 1988; 1993; Massey and Eggers 1990) have written about the increase in low-income neighbourhoods that began in the 1970s as a result the migration of low-income workers to inner-city areas brought on by macroeconomic shifts.¹

A number of similar patterns are evident in studies of poverty in Canada including an increase in proportion of people living in poverty since the 1970s or early 1980s which has been particularly evident in large cities (or typically Census Metropolitan Areas), an increase in the concentration of poverty within particular areas of cities, and an increase in the disparity between the average incomes of the poorest and wealthiest neighbourhoods in cities (Broadway 1992; Hajnal 1995; Hatfield 1997; Kazemipur and Halli 2000; Lee 2000; MacLachlan and Sawada 1997; Myles, Picot and

¹ In *The Truly Disadvantaged* (1987), William Julius Wilson argued that the economic marginalization of inner-city African American neighbourhoods could be explained by a combination of historical discrimination and migration from the rural South to large cities. The migration was stimulated by macroeconomic shifts occurring since the 1970s, namely innovations in technology, the shift from goods-producing to service-producing industries, the relocation of manufacturing industries out of central cities, the increasing polarization of the labour market into low-wage and high-wage sectors, and periodic recessions. These shifts coincided with the increased mobility of advantaged African Americans who, Wilson argued, abandoned inner-city neighbourhoods leaving them with a weakened normative structure (Wilson 1996). Social isolation in these neighbourhoods was accompanied by increases in unemployment, weakened formal and informal institutions, increases in family breakdown, and increases in crime.

Pyper 2000; Ross, Houle, Dunn and Aye 2004). Hajnal (1995) has argued that in general the pattern in Canadian cities mirrors the American experience of extensive manufacturing employment losses in inner-cities accompanied by migration of the middle class to suburban areas. Studies have also indicated that there are regional differences in these patterns across the country. For example, although all Canadian cities have experienced rising income inequality among families, certain cities including Winnipeg, Edmonton, Calgary and Quebec City have the highest rates of concentrated urban poverty, or in other words, have experienced greater spatial segregation of families in different income classes (Myles, Picot and Pyper 2000, 2).

2.2 The convergence of multiple forms of disadvantage

A persistent observation, starting with the early ecological investigations of American cities by Chicago School researchers, has been that many aspects of structural disadvantage and other social problems are spatially clustered (Shaw and McKay 1942/1969). For example, researchers have frequently observed the convergence of a “multidimensional cluster of traits” including high rates of poverty, unemployment, ethnic heterogeneity, residential instability, and family disruption (or specifically high rates of single-parent families with children) together with the outflow of skilled manufacturing jobs and poor housing quality (Elliott, Wilson, Huizinga, Sampson, Elliot and Rankin 1996, 392; Sampson and Groves 1989; Wilson 1987). These factors have been hypothesized to interact with one another to heighten the detrimental effects of

concentrated poverty. Ultimately the cluster of traits in disadvantaged neighbourhoods is argued to negatively influence both the relationships and collective capacity of the community members and the actions and behaviours of individuals who live in those places (see for example Sampson and Groves 1989).

In Canadian cities, Séguin and Divay (2002, 4-5) have suggested that there is a “complex geography of poverty” such that all low-income neighbourhoods do not experience all forms of deprivation concurrently. Nonetheless, numerous studies have documented at least some degree of the spatial concentration of forms of structural disadvantage. For example, Hou and Picot (2003) found that in large Canadian cities “ethnic enclaves” or neighbourhoods with higher levels of minority ethnic populations also have higher unemployment, lower education and greater low-income levels. Also, evidence suggests that concentrated structural disadvantage is associated with higher crime rates in many Canadian cities (see for example, Fitzgerald, Wisener and Savoie 2004; Fitzgerald and Carrington forthcoming; Ouimet 2000; Savoie, Bédard and Collins 2006; Wallace, Wisener and Collins 2006).

Studies have reported correlations between high concentrations of neighbourhood disadvantage in Canadian cities and high neighbourhood rates of problem outcomes for resident children and youth, including diminished child health, behaviour and cognitive ability (Boyle and Lipman 1998; Curtis, Dooley and Phipps 2004; Kohen, Hertzman and Brooks-Gunn 1999; Law and Willms 2002; Ross and Roberts 1999). According to these researchers a disproportionate share of child and youth behavioural and other problems appears to be concentrated within the most

structurally disadvantaged neighbourhoods. Families living in concentrated urban poverty in Canadian cities can also be exposed to greater violence, and this has been demonstrated to be particularly the case for women living in public housing areas (DeKeseredy, Alvi, Schwartz and Perry 1999). It should be noted, however, that although there is support for the presence of overlapping forms of disadvantage and other problems in low-income neighbourhoods, this does not suggest that residents in these neighbourhoods uniformly experience problems (see Séguin and Divay 2002).

2.3 Neighbourhood effects definition and measurement issues

A primary hypothesis in the body of “neighbourhood effects” research is that the observed *neighbourhood* concentration of poverty and other structural deficits within urban areas will have consequences for the development and outcomes of *individual* children and youth. Thus, the issue of neighbourhood effects concerns the influence of where children live on their developmental outcomes, over and above their particular family and individual circumstances.

Researchers have used different methodological strategies to assess neighbourhood effects on children and youth. First, qualitative research has made important contributions to studies of local areas. These studies have employed a variety of strategies to understand the internal dynamics of growing up in poor neighbourhoods and consequently have focussed primarily on high poverty and racially segregated areas in large American cities (e.g., Anderson 1990; Furstenberg 1993; Jarrett 1992; Stack

1974). These studies provide information about the complexity of relationship networks, the perceived size and boundaries of physical spaces that people consider to be their ‘neighbourhoods’, and even the street level physical environment. The evidence from these studies has often informed quantitative analyses (e.g., Furstenberg 1993; Furstenberg, Cook, Eccles, Elder and Sameroff 1999).

Quantitative studies of neighbourhood effects vary in design and scope from national, to city or regional studies, to neighbourhood-based studies (for a review see Leventhal and Brooks-Gunn 2000). The challenge in these quantitative studies is to test the proposition that, net of everything else, the conditions in the immediate neighbourhood environment influence individuals’ outcomes. Neighbourhood-based designs, which include adequate sample sizes of individuals clustered within a range of neighbourhoods, are preferable to other national and city/regional studies because they permit appropriate statistical tests to be performed. Specifically, multilevel data modelling techniques account for nested data structures in which information about individuals is nested within larger contextual-level units—explained in detail in chapter 3 of this dissertation (Kreft and De Leeuw 1998; Raudenbush and Bryk 2002; Snijders and Bosker 1999).

There are two frequently raised issues related to quantitative neighbourhood effects analyses. The first is the issue of selection bias which has been described as the “biggest challenge facing neighbourhood effects research” (Sampson, Morenoff and Gannon-Rowley 2002). Specifically, people are not randomly assigned to neighbourhoods, but instead make decisions to reside in particular places based on a

number of considerations that may themselves affect their individual outcomes (Duncan and Raudenbush 2001). For example, parents with low educational attainment, may also have children with low educational attainment, therefore, a failure to control for parents education level may lead to an overestimate of the influence of living in a disadvantaged neighbourhood (Small and Newman 2001, 30). Many studies control for observable factors that may lead to selection bias (e.g., Kohen, Brooks-Gunn, Leventhal and Hertzman 2002). However, as some commentators have argued, the inability to control for all observable and unobservable reasons that people live in particular neighbourhoods means that neighbourhood effects research does not determine causal links, but instead suggests strong associations (Duncan and Raudenbush 2001; Small and Newman 2001; Tienda 1991). Sampson, Morenoff and Gannon-Rowley (2002) have argued that research based on experimental designs in which low-income families are randomly assigned to move to higher income housing units, supports the existence of neighbourhood effects.

The second issue is the definition and measurement of neighbourhoods. The possible definitions of neighbourhood as a conceptual unit vary greatly by the field of study and the methods used. Typical sociological definitions refer to the network of informal relationships among people living within a geographic space or the local “communities” in which we live (Small and Newman 2001). Evidence suggests that residents’ perceptions of the physical boundaries of their neighbourhoods differ. Currently, a majority of quantitative studies of neighbourhood effects rely on administrative boundaries defined by statistical agencies, police services, schools, or

health regions (Kohen et al. 2002; Boyle and Lipman 1998; Tremblay, Ross and Berthelot 2002.). Many commentators have argued that administratively defined areas provide inadequate operational definitions of neighbourhoods for research and policy (Grannis 1998; Sampson, Morenoff and Gannon-Rowley 2002, 445). These defined areas may differ from the neighbourhoods perceived by the residents themselves. However, in the absence of qualitative information obtained directly from residents, a reasonable surrogate is the best possible solution. In this dissertation, I employ city defined definitions of neighbourhoods which reflect local knowledge of neighbourhood boundaries (details are provided in Chapter 3, section 3.1).

2.4 Neighbourhood effects on children and youth

Beauvais and Jenson (2003) have argued that although there is a high level of interest among Canadian policy makers in potential neighbourhood effects on children and youth, the research in this country is in its relative infancy in comparison to the large body of research from the United States. Where possible, I review results from the Canadian literature since although the two countries have experienced similar shifts in neighbourhood segregation by income, differences in their demographic structures, urban sizes and densities, and social safety nets suggests that there also may be differences in outcomes with respect to neighbourhood effects (Séguin and Divay 2002). For the purposes of this review I focus on evidence from quantitative studies. Results from existing Canadian studies are inconsistent in the extent to which they provide

evidence in support of neighbourhood effects on children. In general terms, however, the bulk of this research supports four findings.

First, the extent to which neighbourhoods explain variance in child and youth behaviours varies according to the type of outcome being examined and the range of neighbourhood types in the study. For example, studies with the most limited range of neighbourhood types find the least evidence for any independent effect of neighbourhoods on child outcomes. Oreopoulos (2002) finds that the eventual labour market outcomes of youths who grew up in public housing projects in Toronto were relatively unaffected by the conditions in the surrounding neighbourhoods (2002, 21). However, as Oreopoulos acknowledges, the limited variation in neighbourhood income-levels in the public housing sample may not have been large enough to detect neighbourhood effects (2002, 21).

Canadian studies using general population samples (reflecting a full range of neighbourhood types) have generally reported that neighbourhood conditions explain roughly 3-10% of the variation in child and youth outcomes (Boyle and Lipman 1998; Kohen et al. 2002; Romano, Tremblay, Boulerice and Swisher 2005; Tremblay Boulerice, Foster, Romano, Hagan and Swisher 2001; Willms 2002). As an example, Boyle and Lipman (1998) reported that about 7% of the variance in the behaviour problems of children aged 4-11 years was explained by neighbourhood-level variables including unemployment, low income, low education, and single-parent households. The results from these studies coincide with research conducted on American samples (Leventhal and Brooks-Gunn 2000).

Second, a near universal finding across all studies is that individual- and family-level variables are more strongly associated with individual outcomes than are neighbourhood-level variables (Leventhal and Brooks-Gunn 2000; Kohen et al. 2002; Foster et al. 2001; Romano et al. 2001; Boyle and Lipman 1998). This finding suggests that influences in the immediate environment are the strongest predictors of children's outcomes; nonetheless, conditions in the environment beyond the household have direct and indirect influences on children's outcomes (Bronfenbrenner 1979). The particular role that parents may play, particularly for young children, in shaping these influences has been relatively understudied.

Third, although there is variation across studies in the specific neighbourhood-level variables found to be associated with outcomes for children and youth, significant and independent effects are commonly found for the average level of socioeconomic status (SES) of neighbourhoods (Duncan and Raudenbush 2001; Leventhal and Brooks-Gunn 2000). Both high and low neighbourhood SES levels appear to make a difference with respect to child and youth outcomes. Foster, Hagan, Tremblay and Boulerice (2001) found that high SES neighbourhoods (i.e., low poverty) are associated with lower childhood aggression scores, than is the case for middle-class neighbourhoods. Kohen et al. (2002) found that low neighbourhood poverty is associated with higher verbal ability scores in children. Some Canadian studies have also found separate and independent effects for neighbourhood social organizational features such as social cohesion (Kohen et al. 2002; Foster 2001). These findings are in line with the emerging body of American research that has demonstrated links between neighbourhood social processes

and individual outcomes (for a review see Sampson, Raudenbush and Gannon-Rowley 2002).

Finally, Canadian research has not explicitly tested the extent to which neighbourhood effects may change over the course of childhood; however, research conducted elsewhere generally supports the expectation that the *direct* influence of the neighbourhood environment increases with the age of the child. In a review of neighbourhood effects research, Séguin and Divay (2002) report that contexts beyond the household play a relatively minor role for preschool-aged children for whom the family is the primary point of reference, but this role is greater for older adolescents and teenagers with growing freedom to interact with external contexts. Romano et al. (2001, 7) conclude that it is after children begin school that the most consistent evidence of neighbourhood effects occurs.

2.5 The intermediary role of parents: The missing element in neighbourhood effects research

Despite the large body of neighbourhood effects research on children and youth, few studies have investigated either how parents may condition external contexts for their children, or how perceived and objective neighbourhood factors may influence parenting practices and behaviours. In a review of quantitative research concerning neighbourhood effects on children conducted over the course of the 1990s, Burton and Jarrett (2000) contended that the precise role of parents had not been addressed theoretically or with any methodological specificity.

Reviews of ethnographic research have indicated that there are numerous potential pathways through which the structural conditions of neighbourhoods may influence parenting practices and family management strategies (Caughy, Brodsky, O'Campo, and Aronson 2001; Jarrett 1995; McLoyd 1990). In addition, small-scale qualitative studies have provided evidence that parents may adapt their strategies to provide the greatest success for their children within high-risk neighbourhood conditions (Jarrett 1995). These findings suggest that researchers concerned with understanding neighbourhood effects "would do well to pay more attention to the role of families as mediators" (Briggs 1998; 210). In the remainder of this dissertation I turn my attention toward parents and the potential influence of neighbourhoods.

3.0 Looking ahead: Chapter overview

In Chapter 2, I develop the theoretical framework which underpins the analyses in this study. I begin by reviewing current theoretical approaches to understanding parenting within sociology and related disciplines, and follow by elaborating an ecological model of parenting behaviour by extending theories of social disorganization, social support, and collective efficacy. In Chapter 3, I outline the data, measures and methodological strategies to be used to address the questions in the following three analytic chapters (4-6).

To set the context for the investigation of the relationship between parenting and neighbourhood conditions, Chapter 4 begins with a straightforward question: who uses

which parenting practice? Specifically, analyses in this chapter examine the Winnipeg sample as a whole to assess the associations between parenting practices and (1) socioeconomic resources and other family background characteristics; (2) children's outcomes; and (3) parents' perceptions of their access to social support and their neighbourhood environments.

In Chapters 5 and 6 I employ a multilevel analytical strategy to investigate neighbourhood influences on parenting and child outcomes for the Winnipeg sample. A broad question to be considered in both chapters is whether the predictive value of neighbourhood conditions holds over and above individual-level characteristics, or specifically, to what degree differences in parenting practices and/or the relationship between parenting and child outcomes are attributable to the individual circumstances of families in contrast to some neighbourhood condition?

Chapter 5 begins by considering whether structural characteristics of neighbourhoods are associated with parenting practices and whether neighbourhood social processes influence that relationship, and this is followed by an investigation of how the relationship between parenting and child outcomes is influenced by neighbourhood conditions.

In Chapter 6 the focus shifts to the influence that parents' access to social support has on parenting and children's outcomes. Specifically, the analyses in this chapter test the applicability of three differing hypotheses concerned with the interplay between individuals' social support and broader contextual environments. The stress-buffering hypothesis proposes that social support offsets the potentially harmful effects

of residing in structurally disadvantaged neighbourhoods since it primarily benefits those under stress; the attenuation hypothesis proposes that the positive influence of social support would be weaker in the most disadvantaged neighbourhoods; and the main-effects hypothesis proposes that social support will positively influence parenting practices regardless of the level of disadvantage in the neighbourhood.

In Chapter 7, I conclude by recapping the major findings and discussing their implications for research and policy on parenting and neighbourhood effects. Finally, based on some of the limitations faced in this study, future work is proposed.

Chapter 2

Parenting and the neighbourhood context: Theories and hypotheses

1.0 Introduction

The previous chapter traced a resurgence of interest in the conditions and influence of neighbourhoods on individual behaviour within the fields of urban sociology and criminology in the 1990s. This work primarily assesses the association between local residential environments and outcomes for children and youth. However, the specific role of parents as brokers between children and external contexts has been comparatively under studied in the large body of neighbourhood effects literature.

This chapter begins with a review of current theoretical approaches to the study of parenting within sociology and related disciplines. While a majority of the work is focussed on direct interactions between parents and children; an emerging body of literature has examined the role of parenting in broader social contexts and in particular the ways that parents may condition these contexts for their children. Evidence from this research suggests that parenting behaviours are influenced by dimensions of stratification, or by parents' own circumstances such as skills, experience, family structure, social and economic resources, race/ethnicity, immigration status and gender. In addition, however, this research suggests that external contexts such as local neighbourhood social and economic resources may contribute to parenting behaviours.

Fuller elaboration of a theory is required to address the particular ways that family and neighbourhood conditions may intersect to influence parents' child-rearing practices. To this end, the remainder of the chapter extends theories of social disorganization, social support, and collective efficacy to develop an ecological model of parenting behaviour.

2.0 Theories of parenting: Within and beyond the household

Just as society has evolved from a predominantly rural to an urban population, so has the communal orientation of the family. Social historians have argued that child rearing responsibilities have shifted from a communal activity involving families, community members and institutions, to a largely independent and privatized enterprise carried out within the household (see Furstenberg 1993, 233; Demos 1986; Hareven 1984). Over the course of the past century, child rearing has increasingly been viewed as the sole responsibility of parents with a corresponding reduction of perceived responsibility of the community as a whole (Lasch 1977; Shorter 1975; Zelizer 1985). To a great extent, this perspective has resulted in an emphasis on the parent-child relationship within social science research families.

However, there has been a renewal of interest in exploring 'context' as an important consideration with respect to parenting. In part, this perspective was stimulated by Wilson's (1987) emphasis on the importance of the local context, particularly with reference to families living in the most socially and economically

depleted neighbourhoods who were less able to improve their children's life chances. Nonetheless, the primary emphasis continues to be on within-family processes characterized by parent-child interactions rather than broader "family management" strategies intended to regulate children's contact with external environments.

2.1 Within-family parenting processes

Child developmental research has been largely concerned with transactions among family members, or within-family processes, emphasizing the parent-child dyad. The view that these interactions are primary in determining children's outcomes is an assumption that underpins this body of work. The style and quality of parents' communication, control, and decision-making are viewed as necessary components for children's developmental success (Darling and Steinberg 1993).

Much of the current thinking on parenting is rooted in a typology developed by Diana Baumrind (1967; revised by Maccoby and Martin 1983) describing a continuum of parenting styles ranging in levels of responsiveness, expectations and control. Baumrind's typology—encompassing authoritative, authoritarian and permissive parenting styles—places major emphasis on the parent-child dyad to the exclusion of external factors. Authoritative parents are characterized by their responsiveness, consistency in establishing and enforcing rules, promotion of autonomous behaviour and decision making, and high level of warmth and involvement. In contrast, authoritarian parents are characterized as excessively punitive, demanding and unresponsive; while

permissive parents are more responsive to their children but are also undemanding and inconsistent.

Numerous empirical studies have tested the association between Baumrind's parenting types and a range of child outcomes (for reviews see Demo and Cox 2000; Mayseless, Scharf, and Sholt 2003). In general, these studies link authoritative parenting styles to more positive child cognitive and socio-emotional outcomes and authoritarian and permissive styles to less positive child outcomes. Thus, features of authoritative parenting have been associated with greater academic achievement levels, fewer problem behaviours and higher levels of self-esteem and self-reliance (Baumrind 1983; Steinberg, Lamborn, Dornbusch, Darling 1992; Weiss and Schwarz 1996). In contrast, authoritarian parenting has been associated with higher levels of hostility, delinquency, rebelliousness, and antisocial aggression (Baumrind 1991), while permissive parenting has been associated with higher levels of problem behaviours and depression in children (Downey and Coyne 1990).

The extent to which different within-family parenting processes are universally effective or ineffective across socioeconomic and cultural groups and residential contexts has been the subject of disagreement among researchers concerned with child development. On one side are those who argue that the importance of parenting processes in explaining child behavioural and achievement outcomes varies little by group membership, residential location, or other developmental contexts (Amato and Fowler 2002; Pinderhughes, Nix, Foster and Jones 2001; Rowe, Vazsonyi and Flannery

1994; Steinberg, Mounts, Lamborn and Dornbusch 1991; Vazsonyi, Pickering and Bolland 2006).

In this view, the effects of family and neighbourhood factors on child development are assumed to be consistent for all children. Thus, high-risk environments are hypothesized to strengthen rather than weaken the effectiveness of parenting processes associated with Baumrind's authoritative parenting style. As an example, Vazsonyi, Pickering and Bolland (2006) found that parenting characterized by high levels of warmth and monitoring accounted for a large amount of the variance in child behavioural outcomes in high-risk neighbourhoods. Similarly, Cleveland (2003) reported that within family parenting processes are important for all youth, but are particularly important in explaining antisocial behaviours in youth from disadvantaged neighbourhoods compared to those from more advantaged neighbourhoods.

From this perspective neighbourhood context is less consequential than family processes in explaining child developmental outcomes. As a result, program and policy strategies are targeted at 'within-family' solutions. For instance, Vazsonyi and colleagues contend that their results suggest a need to support programs for children and youth within high-risk milieus that emphasize family socialization and the development of close child-caregiver relationships and consistent disciplinary practices (2006, 67-68).

Contrary to the "no group differences view", a number of researchers have questioned the extent to which Baumrind's typology can be generalized to groups beyond the largely white middle-class families that were the subject of most earlier empirical studies, suggesting instead that parenting and child socialization are relative to

the family's structural position (e.g., socioeconomic status, racial/cultural composition, single-parent status), as well as the extra-family contextual context (Simons, Lin, Gordon, Brody, Murray and Conger 2002, 343; Mayseless, Scharf, and Sholt 2003).² As an example, evidence suggests that children's school achievement is not negatively affected by parents' use of authoritarian (or hostile-punitive) parenting practices across racial, cultural and/or class groupings (Chao 1994; Deater-Deckard, Dodge, Bates and Petit 1996; Demo and Cox 2000; Simons et al. 2002). Thus, among Chinese-American families, authoritarian parenting was positively linked to school achievement (Wang and Phinney 1998). Similarly, Rudy and Grusec (2001, cited in Mayless, Scharf, and Sholt 2003, 429) report that strict disciplinarian forms of parenting are negatively associated to child achievement outcomes in cultural groups that stress autonomy and independence, but positively associated in groups that stress interdependence and respect for authority.

Additionally, differences in parenting effectiveness are assumed to vary by neighbourhood context. For example, Simons et al. (2002) have observed that high neighbourhood crime rates are associated with a reduction in the deterrent affect that parental monitoring would otherwise have on child conduct problems. They conclude that parents' use of consistent monitoring and discipline does not have the same influence on children's behaviour for families that live in neighbourhoods where

² In addition to this critique, some commentators have disagreed with the singular focus in much of the child development and family studies literature on the unidirectional path of influence in the parent-child dyad, i.e., parents' effect on children. For example, Ambert (1992) and Harris (1998) have both argued that children's influence on parents is a crucial element in understanding parenting processes and child outcomes. In this dissertation, the primary outcome of interest is parenting behaviour; however in most analyses, child behaviour is included as a control variable in order to hold constant possible influences of children on their parents.

criminal behaviour is pervasive because the power of this parenting practice is reduced in the face of delinquent networks and norms to which children may be exposed (2002, 343). This finding is in line with other research suggesting that the most successful parents living in neighbourhoods with the highest rates of crime and perceived dangerousness may use extremely restrictive and punitive measures, frequently involving physical discipline in order to reduce their children's exposure to risks beyond the household (e.g., Burton 1991; Puntenney 1997).

Research that points to variation in the meaning and efficacy of parenting processes across groups raises the possibilities that (1) external contexts need to be considered when attempting to understand parenting and child development, and (2) there may be reason to look more closely at the ways that families' individual social positions intersect with the contexts in which they live. In fact, some commentators have argued that to do otherwise is to misinterpret the meaning and consequences of parenting. Along this line, Currie (1985) refers to the "fallacy of autonomy—[or] the belief that what goes on inside the family can usefully be separated from the forces that affect it from the outside: the larger social context in which families are embedded for better or for worse" (p. 185).³

This perspective is rooted in a sociological tradition concerned with the association between individuals and their contexts (e.g., Mead, Parsons, Mills,

³ Although there is a continuum of views regarding the importance of the external factors in shaping children's development, at one extreme Janet Harris (1998) has argued that what parents do in the home has extremely minimal impact on children's behaviour and outcomes beyond the household. In Harris's view the external context (and particularly children's contact with peers), is paramount in determining child outcomes. To the extent that parents do provide direction to their children, Harris argues, it is only through their selection of neighbourhoods, schools and other opportunities for social interaction for their children.

Goffman). In addition, in the field of developmental psychology, Bronfenbrenner (1979) set out a developmental-ecological paradigm in which the behaviour and development of children were viewed as a joint function of the characteristics of the person (including biological and psychological attributes) and of the multiple contexts in which he or she is embedded. Subsequent work based on Bronfenbrenner's perspective suggests that parenting is also directly influenced by a combination of internal and external contexts, and its effectiveness may be influenced by those contexts (Steinberg, Darling, Fletcher 1995).

2.2 Parenting and the external context

A less sizeable body of research has looked explicitly at the form and function of the parenting role in conditioning the external environment for children (Belsky 1984; Burton and Jarrett 2000; Luster and Okagaki 1993). A notable example is Frank Furstenberg and colleagues' multifaceted study of mothers and their children in Philadelphia neighbourhoods in 1991 (Furstenberg et al. 1999; Eccles, Furstenberg, McCarthy, Lord and Geitze 1993). The aim of this research was to consider the interface among parenting, family characteristics and neighbourhoods in impoverished settings, and accordingly, the sample was drawn from Philadelphia's inner-city census tracts. This work demonstrated that there is a link between what parents do and where they reside. For example, the extent to which parents in the sample imposed restrictions on or granted autonomy to their children was associated with the conditions of safety

and opportunity within their neighbourhoods, as well as a combination of family and child factors.

As part of their study, Furstenberg et al. present a revision to the traditional family process models of parenting. Their concept of “family management” moves beyond practices solely related to the parent-child dyad and includes both within-family and out-of-home oriented practices with an emphasis on parenting designed to cope with and cultivate the external environment for children. They refer to the routine exchanges between parents and children intended primarily to manage children’s behaviour, but also to develop their skills and talents, as “family processes”. In contrast, out-of-home management includes parenting practices aimed at regulating the interaction between children and the environment beyond the household. Family management adds to traditional family process models by ascribing meaning to parents’ actions. In this view, parenting cannot be understood apart from the context in which families are embedded. Thus, Furstenberg argues that “[a]ppropriate’ parenting depends on the risks and opportunities in the broader community in which the family resides, the age and competence level of the child, and the goals, values, and resources of the parents” (Furstenberg et al. 1999, 70).

These parenting spheres are not mutually exclusive. For example, within-family processes such as strict discipline may be intended to affect children’s access and behaviour beyond the household. Regardless of the sphere, Furstenberg et al. propose that both “promotive” and “preventive” strategies can be implemented. The former are intended to foster children’s skills and increase opportunities; and the latter are intended

to regulate children's exposure to potential risks and dangers (p. 71). In addition, out-of-home processes may include practices that directly affect children, as well as those that may only have indirect effects such as parents' efforts to increase their own contacts with community members and organizations. When considering the context, parenting practices do not fit neatly within typologies such as the one proposed by Baumrind, since the Philadelphia results suggest that extremely restrictive practices may be viewed as positive or "authoritative" rather than negative or "authoritarian" in particularly dangerous settings.

Drawing on literature and evidence, this dissertation investigates the influences on three parenting behaviours reflecting both within-family parent-child interactions, and family management practices aimed at conditioning the external context. Specifically, these behaviours include (1) discipline effectiveness, (2) parental investment, and (3) parental involvement. Discipline effectiveness refers to parents' application of consistent rules for behaviour and follow-through for disobedience. This is akin to components of Baumrind's authoritative parenting and has consistently been linked to successful child development (Patterson and Stouthammer-Loeber 1984). Parental investment includes child-centred management designed to promote children's skills and expose them to positive community opportunities. Furstenberg et al. (1999, 118-119) include practices such as enrolling children in programs, shared activities promoting skill development, and encouragement. Parental involvement captures parents' participation in social networks and local organizations. Furstenberg et al. find

that parents' involvement in organized activities is positively associated with children's academic achievement and own organizational involvement (1999, 117).

2.3 *The corollary of this section*

The vast majority of conceptual and empirical work on parenting supports the finding that the parent-child dyad is an important contributor to children's developmental outcomes. However, some research has begun to focus attention on the relationship between parenting and the external contexts in which families are embedded. Notably this work raises questions about the universal effectiveness of various parenting practices across all families and contexts, and more specifically, about the various relationships between parents, their social positions, and the structural and social processes in their local communities.

In statistical terms the work of Furstenberg and others who examine parenting through a contextual lens (e.g., Belsky 1984; Burton and Jarrett 2000; Darling and Steinberg 1993; Jarrett 1995; Luster and Okagaki 1993; Leventhal and Brooks-Gunn 2000) produces the expectation that accounting for neighbourhood context variables will influence the relationship between parents' family management practices and children's outcomes, since we might expect that what parents do is influenced by where they live.

Further, this contextual perspective raises an additional expectation that the social position of families, measured through their social and economic resources, may moderate the relationship between neighbourhood contexts and parenting behaviours

(since evidence suggests that parents' management practices may be influenced by their own social and economic conditions). In the remaining sections of this chapter, I elaborate a theoretical framework to assess the relationships between neighbourhood structural and social resources and parenting behaviour. This ecological approach extends social disorganization theory to account for neighbourhood effects on parenting behaviour, and in particular to account for the way that neighbourhood structural adversity may condition the availability and utility of social support, and collective efficacy for parents.

3.0 Theories of neighbourhood and implications for parenting

3.1 *Extending social disorganization theory*

What are the specific features of neighbourhoods that may influence parents' family management practices, and ultimately children's outcomes, and through what means might this occur? Social disorganization theory provides one framework for examining the association between families and neighbourhood-level conditions. Though most frequently used as an explanation of crime in urban neighbourhoods, family scholars have more recently emphasized the potential application of a social disorganization approach for understanding families in the context of communities (Mancini, Bowen and Martin 2005). The concept has been defined as "the inability of local communities to realize the common values of their residents or to solve commonly experienced problems" (Kornhauser 1978, 120). As Sampson and Groves (1989, 777)

have contended, social disorganization reflects the quality and density of social relationships in a community, including friendship ties, and organizational participation.⁴ The social disorganization perspective draws attention to both the social processes of local communities, based on the ties and participation of the residents that lead to collective pursuit of shared values, and to the “structural barriers” that may diminish a community’s capacity to act collectively (Sampson and Groves 1989, 777).

Current applications of social disorganization theory in criminology and sociology are generally credited to Clifford Shaw and Henry McKay (1942; 1969), though its roots can be traced to the origins of the Chicago School (Park 1915; Park and Burgess 1925). Briefly, in examinations of Chicago juvenile delinquency data over approximately sixty years, Shaw and McKay observed a consistent spatial concentration of delinquency in particular inner-city neighbourhoods despite the in-and-out movement of different waves of ethnic groups. These places were also associated with certain disadvantaged structural characteristics including lower average income levels, high residential turnover, ethnic heterogeneity, and a high proportion of single-parent families. Shaw and McKay hypothesized that the poverty and the destabilized conditions caused by rapid population turnover and heterogeneous populations in particular inner-city neighbourhoods contributed to higher juvenile delinquency rates. They reasoned that residents lacked a network of social ties and collective norms and values, and as a consequence were unable to contribute to informal and formal control mechanisms that

⁴ Sampson and Groves (1989) as well as others (Kornhauser 1978; Bursik 1988) position social disorganization within the systemic theory model (Kasarda and Janowitz 1974). In this view, “the local community is viewed as complex system of friendship and kinship networks and formal and informal associational ties rooted in family life and on-going socialization processes. At the same time, it is fashioned by the large scale institution of mass society” (Kasarda and Janowitz 1974, 329).

would impede local social problems such as crime. A key outcome of this observation was a shift in criminological theory with a corresponding shift in treatment and prevention strategies from those focussed purely on the individual toward those encompassing the community (Shaw and McKay 1942/1969, 387).⁵

In this model, socially disorganized communities are those characterized by poor local social ties, reduced capacities to act collectively, and limited local participation. These diminished social processes influence the individual behaviour of some community members, or in Shaw and McKay's example, lead to a greater likelihood of delinquent behaviour within the community. The structural variables presumed to account for the variation in social disorganization across communities include the average socioeconomic level of community members, the degree of residential mobility (i.e., the extent to which residents move in and out of neighbourhoods) and degree of ethnic heterogeneity (i.e., the degree of ethnic and racial population mix) (Kornhauser 1978, 83).

As Sampson and Groves (1989, 780) observe, these variables may influence individual behaviour directly, but perhaps more importantly, they influence behaviour indirectly as they are mediated by community social processes. Thus, neighbourhood structural disadvantage variables are hypothesized to have a negative effect on

⁵ The work of Shaw and McKay has undergone a number of revisions and extensions to accommodate social problems beyond juvenile delinquency (Kornhauser 1978; Bursik and Grasmick 1993; Elliot et al. 1996; Massey and Denton 1993; Sampson and Groves 1989; Wilson 1987). In addition the theory has been criticized on a number of grounds (e.g., see Almgren 2005). Two of the most frequent critical assessments include: (1) its failure to account for *culture* by for example overlooking the fact that there may be functioning social networks in high-crime neighbourhoods (Patillo-McCoy 1999) or in ethnically-heterogeneous and disadvantaged neighbourhoods (Small and Newman 2001); and (2) its primary focus on deficiencies rather than constructive aspects of communities (Mancini, Bowen and Martin 2005).

individual outcomes, which would be reduced in the face of strong and effective community social processes (Elliot, Wilson, Huizinga, Sampson, Elliott, and Rankin 1996). Additionally, adverse structural conditions are presumed to be mutually reinforcing since the presence of one or more of these conditions has been demonstrated to compound the degree of community social problems. Thus, ecologically disadvantaged neighbourhoods are not merely those with high levels of poverty, rather they are constituted by a cluster of adverse traits (Elliot et al. 1996, 393).

By extending the social disorganization framework to understand the relationship between neighbourhoods and parenting, I hypothesize three possible paths through which ecologically disadvantaged neighbourhoods may influence the family management practices that parents employ. First, evidence suggests that neighbourhood structural adversity may have a direct influence on parenting practices independent of family economic and social resources (e.g., Cantillon 2006; Caughy, Brodsky, O'Campo, and Aronson 2001; Gorman-Smith, Tolan, and Henry 2000; Furstenberg et al. 1999; McLoyd 1990). In these studies parents have been demonstrated to adopt particular parenting practices to accommodate the risks and stresses inherent in some disadvantaged neighbourhood contexts. Most commonly this adaptation has been reported as a greater use of restrictive management practices including greater monitoring and discipline among families who reside in highly disadvantaged and perceived high-risk neighbourhoods (e.g., Furstenberg et al. 1999; McLoyd 1990). In addition, however, Jarrett (1999) reports that successful low-income parents may adopt

resource-seeking and child investment strategies (e.g., in-home learning) to compensate for disadvantaged neighbourhood conditions.

Housing mobility studies provide further evidence of parental adaptation to neighbourhood disadvantage. In recent decades these programs were initiated in a number of locations with the intention of providing families in low-income and high risk neighbourhoods an opportunity to move to higher-income and low risk neighbourhoods.⁶ In an assessment of the Yonkers program⁷—approximately three years after start-up—Briggs (1998, 208) finds that moving has a large and rapid influence on parenting behaviours. Specifically, while non-moving parents relied on harsh discipline and restrictive monitoring strategies in order to reduce their children's contact with others in the neighbourhood; those who moved discontinued these practices, instead adopting more encouraging strategies aimed at integrating children to the new neighbourhood.

Second, given evidence of the link between parenting behaviours and parents' own *social* resources (e.g., Furstenberg et al. 1999; McLoyd 1990), it is reasonable to expect that this relationship may be influenced by the level of structural disadvantage in the neighbourhood. In this case, neighbourhood conditions would interact with, or

⁶ Other housing mobility programs include the Gautreaux program in Chicago (Rosenbaum and Popkin 1991) and the Moving to Opportunity Program in five U.S. cities (Kling, Liebman and Katz 2006).

⁷ The Yonkers Scattered-Site Housing Mobility Program was initiated in the late 1980s through a high-profile court ordered desegregation of public housing and schools in the city. Briggs' study, draws on a sample of 132 primarily African-American and Hispanic families who initially resided in low-income and racially segregated neighbourhoods. About half of the sample was comprised of families who participated in the program and were relocated to new public housing in primarily White and middle-income neighbourhoods, while the remainder were families who remained in their low-income neighbourhoods.

moderate⁸ the relationship between parental social support and parenting practices. Thus, the strength of the relationship between social support and parenting outcomes could be expected to vary according to the neighbourhood environment in which families reside. There are a number of possibilities for the direction of this moderating effect that are described in the following section (3.2.1).

Finally, from the social disorganization perspective it can be expected that there will be an association between the level of structural disadvantage in a neighbourhood and its social processes. Specifically, neighbourhood disadvantage is hypothesized to impair the development of effective community social ties, participation in local organizations (e.g., child or school centred organizations), and collective norms, values and trust (Sampson and Groves 1989). With respect to parenting outcomes, it is expected that the quality and extent of community social resources will mediate the influence of neighbourhood disadvantage on parenting behaviours.

This section has described a theoretical rationale for three different pathways through which neighbourhood structural disadvantage may influence parenting behaviours. The first path hypothesizes a direct relationship between disadvantage and parenting; while the second and third paths hypothesize relationships between neighbourhood disadvantage and (2) parents' social support and (3) neighbourhood

⁸ In this chapter I refer to hypothesized *moderation* and *mediation*. These terms are not used interchangeably since they have specific statistical properties, and thus testing for their presence requires that estimated models meet certain criteria. Briefly, mediator variables account for the relationship between an independent and dependent variable; whereas moderator variables specify when certain effects will hold, e.g., at what level of neighbourhood adversity will social support diminish in its beneficial effect on parenting (Baron and Kenny 1986). A full explanation of these terms is provided in section 5.0 of Chapter 3.

social process. In the following section, I review the literature and evidence related to the latter two paths in order to clarify the links between neighbourhoods and parenting.

3.2 Opportunities for mediation and moderation⁹: Social support and collective efficacy

3.2.1 Social support and parenting

As has been discussed to this point, the resources to which parents have access will vary across family and contextual circumstances. At an individual-level parents will have different financial and human capital resources (e.g., education, experience and skills) to draw upon. At a contextual level, neighbourhoods will vary in the quality and availability of parent- or child-centred resources and opportunities. In addition, however, studies aimed at understanding the effect of social networks on well-being suggest that the relationship between supportive social relationships and parenting behaviours may be influenced by the local context in which families live (e.g., Belle 1983; Ceballo and McLoyd 2002; Fram 2003; Garbarino 1987; Leventhal and Brooks-Gunn 2000). Researchers disagree, however, in their interpretations of the specific role that social support may play with respect to parenting and child outcomes across different residential environments. I will describe three hypotheses here: the stress-buffering, main-effects, and attenuation hypotheses.

To begin with, it is necessary to define social support. Lin, Dean and Ensel provide a commonly used description of the concept as “[t]he perceived or actual

⁹ See footnote 8 above.

instrumental and/or expressive provisions supplied by the community, social networks, and confiding partners” (1986, 18). A number of key elements can be drawn from this definition. First, social support requires an action that provides some form of assistance from one individual to another. Second, there are multiple potential sources of social support; some originating from the individual-level and others from the community-level. Silver (2000, 1048) has argued that social support is demonstrated at the community-level as the “capacity for compassionate action inherent in the neighbourhood”. Third, social support may take different forms, for example, instrumental support refers to “the provision of tangible support in the form of goods and services” such as financial resources or child care (Ceballo and McLoyd 2002, 1312), whereas emotional or expressive support refers to provision of encouragement, positive feedback or “expressions of affection or thoughtful listening” (Ceballo and McLoyd 2002, 1312).

Finally, the definition distinguishes between “perceived” support and “actual” or received support, the former requiring that the recipient understands or acknowledges the existence of the offered support. Research suggests that the *perception* that one is receiving support is an important element in explaining the influence of social support on individual behaviour, and this is particularly the case for those in lower socioeconomic strata (Hashima and Amato 1994; Schieman 2005; Wethington and Kessler 1986).

Some research evidence suggests that parents’ access to supportive social networks may offset the potentially stressful or even harmful effects of residing in

structurally disadvantaged and potentially dangerous neighbourhood settings (e.g., for reviews see, Leventhal and Brooks-Gunn 2000; McLoyd 1990). These findings coincide with what Cohen and Wills (1985, 310) have referred to as the *stress-buffering hypothesis* where social support is presumed to be related to individual well-being primarily for persons under stress, and so would not have the same protective effect for those in less stressful circumstances.¹⁰ More specifically, in their review of research on the relationship between support and well-being, Cohen and Wills found that the buffering effects of social support were apparent when researchers used measures of individuals' perceptions that the available support would be responsive to the needs that arose from stressful events and conditions (1985, 347).

Cohen and Wills were concerned specifically with the relationship between social support and individual well-being rather than parenting behaviour; however, the relevance of the stress-buffering hypothesis to parenting has been touched on in qualitative research on samples of low-income families. For example, Carol Stack's (1974) participant observation study of mutual aid networks among low-income black women living in disadvantaged urban neighbourhoods revealed that close networks of kin and trusted friends protected families from the daily stresses and crises resulting from their impoverished conditions. In her review of existing qualitative research on the effect of economic hardship on black families and children, McLoyd (1990) found evidence that parents' access to social support serves to reduce strain and promote less

¹⁰ The buffering hypothesis is also supported by the stress process framework (Cutrona and Russell 1990; Pearlin et al. 1981). In this perspective, social support is also viewed as a moderator of stress by enhancing personal resources (e.g., self-esteem).

punitive, coercive and inconsistent parenting practices, and consequently to improve child development outcomes.

Without considering the influence of neighbourhood contexts, Hashima and Amato (1994) conducted a quantitative study of a U.S. national sample of parents and found that there were differences in the utility of social support between families at low-income levels and their more affluent counterparts. Specifically, they reported that, consistent with the stress-buffering hypothesis, parents' perceived access to support in the event of a crisis was most beneficial to the most vulnerable and impoverished parents (1994, 401).

However, contrary to the stress-buffering hypothesis, Hashima and Amato also found that some forms of instrumental social support such as access to child care benefited all parents (1994, 401). This finding is consistent with a second hypothesis examined by Cohen and Wills (1985). According to *the main-effects hypothesis*, social support and stressful conditions are presumed to have independent effects on individual well-being, moreover, social support is presumed to positively influence well-being regardless of whether individuals face stressful events or not. In their review, Cohen and Wills (1985) reported that main effects on individual well-being were found primarily in studies that defined social support as the numbers of social relationships, or in other words, the size of one's social network. They concluded that being embedded in a social network where one could rely on instrumental support had an overall beneficial effect on one's well-being, irrespective of stressful conditions (1985, 348).

A third hypothesis has been proposed by researchers concerned with the influence of highly stressful neighbourhood environments on parenting and children's outcomes. The *attenuation hypothesis*¹¹ presumes that the positive effect of social support on parenting is reduced in neighbourhoods with the greatest degree of stress largely because of the characteristics of social networks available in these places. Accordingly, Ceballo and McLoyd (2002; see also Belle 1983; Dressler 1985; Brodsky 1999) reported that the association between social support and positive parenting practices is diminished in neighbourhoods with the lowest "quality", which they define as a composite measure of parental assessments of neighbourhood quality, crime rates and poverty levels. They argued that in these neighbourhoods, parents may be unwilling to make use of available supports since the supports may be "compromised by the demands" of highly stressed local residents (2002, 1312). In this view, certain costs are attached to social ties in high-risk and disadvantaged contexts which may lead some parents to withdraw from the neighbourhood network in order to protect their children (2002, 1312).

Along this line, Belle (1983, 89) has argued that researchers should be careful not to "romanticize" the benefits of social support for disadvantaged families, but instead should be aware that relationships may be accompanied by costs that make them less desirable. She argues that:

¹¹ Ceballo and McLoyd refer to this hypothesis as the possibility that "...lower neighborhood quality may attenuate the positive effects of social support" (2002, 1312). Wickrama and Bryant (2003, 854) also refer to a leveling-off or "contextual dissipation hypothesis" in connection to adolescent mental health outcomes. In this case, the positive association between family social resources and mental health is reduced in extremely disadvantaged neighbourhoods.

Social network does not automatically constitute a social support network to its members. Some members may constitute a net drain on emotional and material resources, and other social ties may be more supportive and stressful at the same time. A network which provides consensus and community may not provide fresh ideas or new opportunities. Social relationships can be both stressful and supportive (Belle 1983, 93).

The three hypotheses presented in this section raise different expectations with respect to the relationship between neighbourhood conditions, social support and parenting outcomes. Both the stress-buffering and attenuation hypotheses suggest that neighbourhood structural conditions will moderate the relationship between social support and parenting. Thus, it is expected that the multi-level models estimated in this study would produce significant *cross-level interactions* between neighbourhood conditions and social support when predicting parenting outcomes, and by extension, children's outcomes. However, the direction of the relationship for the two hypotheses will be different. The stress-buffering hypothesis suggests that the relationship between support and parenting will be stronger in the least advantaged neighbourhoods, while the attenuation hypothesis suggests the opposite. Alternatively, the main-effects hypothesis raises the expectation that there will be no significant cross-level interactions in parenting models, since social support is assumed to have the same benefit with respect to parenting practices across all neighbourhood environments.

3.2.2 Neighbourhood social processes and parenting

A fundamental premise linked to the social disorganization perspective is that neighbourhood structural disadvantage is negatively associated with neighbourhood social resources. Structural adversity is presumed to inhibit the development of

community social ties, participation in local organizations, and collective norms, values and trust (Sampson and Groves 1989). Further, impaired social resources in local communities are presumed to negatively influence the behaviour and outcomes of individuals in those places. For the purposes of this study, I focus on the concept of social cohesion which is one component of a community social resource referred to as “collective efficacy” (Sampson, Raudenbush and Earls 1997).

Collective efficacy is a social process with potential implications for parenting behaviours. The concept, first discussed by Bandura (1986), was adapted by Robert Sampson and colleagues to the study of social connections and their relationship to crime in Chicago neighbourhoods. Sampson, Raudenbush and Earls define the concept as “social cohesion among neighbours combined with their willingness to intervene on behalf of the common good” (1997, 918). They argued that within neighbourhoods, the willingness to intervene is contingent on the conditions of mutual trust and solidarity among local residents (1997, 919). From a social disorganization perspective, collective efficacy is presumed to be associated with individual behaviours (e.g., a reduction in interpersonal violence) because it serves to mediate the influence of neighbourhood structural disadvantage on these behaviours (Sampson, Raudenbush and Earls 1997).

Sampson and colleagues delineate two dimensions of collective efficacy: “informal social control” and “social cohesion and trust”. Informal social control captures the extent to which neighbours are likely to intervene locally when, for example, children were misbehaving or performing delinquent acts. On the contrary

social cohesion captures the extent to which residents perceive that their neighbours would be willing to intervene, could be trusted, or shared common values.

Research on collective efficacy and families has focussed primarily on neighbourhood differentiation of child and youth behaviour. For example, Kohen et al. (2002) found that among a sample of Canadian four- and five-year-old children, elevated problem behaviours were associated with residing in neighbourhoods with low levels of social cohesion, net of family characteristics. In addition, Elliot et al. (1996) found that informal social control mediated the effect of neighbourhood adversity on adolescent delinquency as well as social competence and friendships. Finally, Aneshensel and Sucoff (1996) found that social cohesion mediated the relationship between neighbourhood adversity and adolescent depression. An underlying assumption in these studies is that neighbourhood adults will intervene to control the behaviour of other parents' children (c.f., Darling and Steinberg 1993).

Although current research has not specifically addressed the relationship between neighbourhood collective efficacy and parenting behaviours, based on the work aimed at child outcomes it is possible to hypothesize that neighbourhoods high in aspects of collective efficacy may positively influence parenting behaviour. Moreover, these aspects of collective efficacy may lessen the negative influence of disadvantage on parenting behaviours. Two possible mechanisms may underlie the possible "socializing role" of collective efficacy on parenting. The first may be a high-level of "value consensus" among local parents with respect to particular parenting practices (e.g., Coleman and Hoffer 1987). For example, parents' communication with each other

through local organizations, schools and child-centred activities may be associated with a higher level of “value consensus” concerning parenting strategies. Second, parents may adapt parenting strategies as a response to perceived high levels of informal social control. In this case, there is an assumption that parents would notice and respond to neighbours concerns about their own children, and adapt their parenting strategies accordingly.

4.0 Summary and hypotheses

The review of literature and evidence above highlights the shortcoming of traditional research concerned with child development and well-being in its emphasis on within-family processes, and specifically the parent-child dyad. This approach fails to account for the potential influence of external environments, and in particular the various relationships between parents’ social and economic resources and neighbourhood structural and social processes.

Following the work of Furstenberg et al. (1999), my aim in the remainder of this study is to better understand individual and neighbourhood influences on three different parenting practices capturing within-family processes and community-oriented family management strategies. The analyses ahead are organized around three general questions: (1) Who uses these parenting practices and to what effect for children? (2) How are these parenting practices influenced by neighbourhood structural disadvantage

and social processes? (3) How is access to social support associated with parenting practices, and is this relationship affected by the neighbourhood conditions?

In this chapter I have proposed that the social disorganization perspective could be extended to account for the potential influences of neighbourhood structural disadvantage on parenting behaviours. Available evidence has also suggested that it is important to account for the way that neighbourhood disadvantage may condition the availability and utility of parents social resources, i.e., social support, and neighbourhood social process, i.e., social cohesion. Based on the theoretical framework and research evidence presented in this chapter, I propose an ecological model of parenting that assumes that parenting is influenced by individual and contextual factors, and accounts for the relationships between neighbourhoods, parents' social and economic resources, and their parenting behaviours (illustrated in figure 2.1). Separate components of this model are addressed in chapters 4, 5 and 6.

The model proposes that the strategies that parents choose to use are shaped by their own individual preferences and conditions, and also by the social and structural resources in the local community. Consequently, it is necessary to consider influences on parenting behaviour that derive from characteristics of individuals as well as neighbourhoods. At the individual-level, I expect that higher levels of the three parenting practices considered in this study will be associated with greater children's verbal abilities and lower levels of children's problem behaviours (path a). I also expect that parents' own socioeconomic resources will have a direct influence on their parenting behaviours such that higher levels of family SES will be associated with more

positive parenting practices, or specifically higher scores for each of the parenting practices (path b). Finally, I expect that parents' access to social support will be positively associated with parenting practices, that family social SES will be associated with higher levels of parents' perceived access to support, and that social support will mediate the relationship between family SES and parenting practices, or in other words, social support will eliminate or reduce the strength of the relationship between family SES and parenting (path c).

Extending the social disorganization framework to understand the relationship between neighbourhoods and parenting, I also hypothesize three possible means through which ecologically disadvantaged neighbourhoods may influence the family management practices that parents employ. First, neighbourhood disadvantage will be directly and negatively associated with higher average levels of each parenting practice (path d). Second, the relationship between neighbourhood structural disadvantage and parenting will be mediated by the available neighbourhood social resources, i.e., neighbourhood social cohesion will eliminate or reduce the negative influence of structural disadvantage on parenting practices (path e). And third, neighbourhood disadvantage will moderate (interact with) the relationship between parental social support and parenting practices, i.e., the extent to which social support is positively associated with parenting practices will vary according to the neighbourhood structural conditions (path f).

In summary, in the pages ahead the proposed relationships outlined in the conceptual model are tested with respect to their applicability to a sample of five-year-old children and their parents residing in urban neighbourhoods in the city of Winnipeg, where families vary with respect to their socioeconomic levels, and where neighbourhood contexts range with respect to their levels of structural diversity.

Chapter 3

Methodology

1.0 Introduction

The primary objective of this dissertation is to make comparisons between families residing in structurally different neighbourhood environments within the same community. Certain data and methodological requirements underpin this type of analysis and are outlined in this chapter. In section 2 below, I describe in detail the two Statistics Canada data sources used in the study including the National Longitudinal Survey of Children and Youth community component conducted in Winnipeg and the Statistics Canada Census of Population. In section 3, I describe the study area as a whole and the procedures used for establishing neighbourhood boundaries. In section 4, I describe the measures used in the study including dependent and independent variables. And finally in section 5, I describe and provide rationales for the methodological procedures used in different stages of the study.

2.0 Data sources

2.1 *National Longitudinal Survey of Children and Youth community component*

The primary data source in this study was the National Longitudinal Survey of Children and Youth (NLSCY) Winnipeg community component: a community representative survey of young children conducted in 2000. The NLSCY community component was part of a larger initiative done jointly by Statistics Canada, Human Resources Development Canada and communities with the intent of studying children's readiness to learn just before entering the first grade. Winnipeg was one of the first five areas surveyed as part of the initial round of investigations. For each community the target population included all children enrolled in senior kindergarten at the time of the survey. All sampled children were five- or six-years of age. For the Winnipeg survey, the sample was drawn from Winnipeg School District No. 1 (WSD1) covering the central area of the city (see figure 3.1).

The survey content for the community component was based primarily on the existing national NLSCY survey, which is a wide-ranging prospective study of child development among Canadian children aged 0-11 years in the first cycle and conducted by Statistics Canada. The community component questionnaire includes some adaptations aimed at assessing children's outcomes and the possible influences of communities on these outcomes. In addition the community component differed slightly with respect to collection procedures and design from the main survey. For example, the

NLSCY community component was designed as a representative cross-sectional survey in contrast to the prospective design of the main survey.

In contrast to the main NLSCY, for which the sampling unit was the household, the sampling unit for the community component was the child. Children were selected from a frame derived from school board files for each school within the sampling areas of the five communities. The initial frame for all five communities included 7,298 potential children. A simple random sample of children was selected from the frame in each community. Initial sample sizes allowed for a certain percentage of out of scope children; for example, those enrolled in September 1999, but not at the same residence at the time of collection in the spring of 2000. For Winnipeg, the total population size was 2,477 children enrolled in kindergarten in WSD1 in September 1999. About one third (805) of these children were sampled. Each child in the Winnipeg sample corresponded to one household. There were no twins or siblings in the data.

After excluding survey non-responders¹² and children whose residences fell outside of the WSD1 study area¹³, information was available for 610 children and their families or about 76% of the initial sample.

Data collection for each of the first five communities took place between May and June of 2000. Collection occurred in the household only, in contrast to the main NLSCY which also incorporates school collection. In-home interviews were conducted

¹² Survey non-response includes both total non-responders for which Statistics Canada interviewers were unable to contact residents for the entire collection period, and partial non-responders for whom interviewers were able to make initial contact, but unable to complete at least 50% of the survey items (Statistics Canada 2001; 16).

¹³ Thirteen children lived in neighbourhoods outside of the WSD1 study area and were excluded from the analyses.

by Statistics Canada interviewers with the *Person Most Knowledgeable* (PMK) about the selected child. The PMK is the person aged 15 years and older, living in the child's household, who has the greatest knowledge of the child. In the majority of all cases (97%) the PMK was a parent of the child. Among the PMKs who identified themselves as a parent, the majority (98%) were biological parents, and the remainder (2%) were adoptive, foster or step parents. For the small percentage (3%) of PMKs who reported that they were not a parent of the child, all identified themselves as an "other related adult" including grandparents, aunts and uncles. Because of the large proportion of cases in which the PMK was the child's parent, or had sole responsibility for the child, and because the Person Most Knowledgeable was likely to be in a position of primary responsibility over the child, I refer to the PMK as a parent through the remainder of the dissertation. In addition, I use the terms "mother" and "father" in this study when discussing the gender of the PMK since this is an accurate reflection in the vast majority of cases; however, it should be noted that in a small proportion of cases "mother" refers to grandmothers or aunts, and "father" refers to grandparents or uncles.

As is typically the case for components of the NLSCY, mothers in the Winnipeg dataset represented the largest proportion (89%) of reporting PMKs. This limitation did not permit a comprehensive gender analysis of parenting strategies across neighbourhoods. Nonetheless, parents' gender was added to statistical models as a control. Existing research on the influence of neighbourhood environments on parenting practices has focussed solely on mothers, and consequently it is not clear whether these external contexts effect mothers and fathers differently (e.g., Fram 2003; Furstenberg et

al. 1999). However, research on parenting styles and children's outcomes has indicated that there are significant gender differences in both parenting behaviours and consequences for children (Amato and Fowler 2002), and these results suggest that further investigation of parental gender differences with respect to potential neighbourhood effects is warranted. This future research will require data collection designed to compare adequate samples of mothers and fathers at the neighbourhood level.

Each PMK responded to interviewer-administered questions on the socioeconomic and health status of themselves and their spouses; their own parenting behaviours; the health, education, behaviour and social relationships of the selected child; and aspects of their neighbourhood and community. In addition, the interviewers administered the Peabody Picture Vocabulary Test – Revised (PPVT-R) to each sampled child in order to assess their receptive vocabulary.

2.2 *Census of population*

As an independent measure of neighbourhood characteristics, I used socioeconomic and demographic variables derived from the Statistics Canada 2001 Census of Population (precise definitions of the variables used in the study are provided in section 4.2.2 in this chapter). All variables were derived from the census “long form” or section 2B of the questionnaire, which collects detailed information from approximately 1 in 5 households nationally (Statistics Canada 2003, 356).

Although the Census data were collected one year following the NLSCY community component collection in 2000, it is expected that variables derived from these data reasonably represent the conditions in the Winnipeg neighbourhoods at the time of the NLSCY collection. An examination of changes in population size and socioeconomic conditions in Winnipeg based on Census variables collected in 1996 and 2001 revealed that characteristics remain relatively stable over time.

3.0 The study area

Winnipeg School District No. 1 (WSD1) covers 16% of the area of the City of Winnipeg and contains 35% of the city's population (figure 3.1). The area encompasses a significant diversity of socioeconomic and cultural backgrounds; however, it also contains relatively high levels of socioeconomic disadvantage, residential mobility (or the extent to which residents move in and out of neighbourhoods) and ethnic heterogeneity. I was interested in examining how the socioeconomic and demographic make-up of the NLSCY survey respondents from the study area compared with the general populations of the study area as measured by the Census of Population data, as well as to the City of Winnipeg, the Province of Manitoba, and Canada. Following Furstenberg et al. (1999), I compared socioeconomic and demographic variables across each of these geographic 'levels' using both Census data and NLSCY data where appropriate (Table 3.1).

Figure 3.1: Study area, Winnipeg School District Number 1, within the City of Winnipeg

The results showed differences between the geographic levels. Before considering the NLSCY population in the final column of Table 3.1, a comparison of variables derived from the Census indicated that the WSD1 study area was generally more economically disadvantaged, with greater levels of ethnic heterogeneity, and residential mobility or frequent movement of residents in the area, than was the case for the city as a whole, the province or the country. For example, median annual household income was about \$9,000 lower in WSD1 than in Winnipeg or Canada, and about \$4,000 lower than in the province. There was also a greater proportion of visible minority, foreign born and Aboriginal populations in the WSD1 than in the other levels of geography; a greater proportion of single mothers; and a smaller proportion of the population that had lived in the same residence five years previously. In contrast to these other characteristics, the proportion of the adult population that had not completed high school was roughly similar across the WSD1, Winnipeg and Canadian populations, and slightly greater than in the province.

The final column in Table 3.1 shows figures for the same socioeconomic and demographic characteristics, but is based on data reported by the NLSCY respondents for the WSD1 area. In this case, the families of the respondent children reported even higher levels of socioeconomic disadvantage, residential mobility and ethnic heterogeneity. These differences are not entirely unexpected since the NLSCY captures information for families of young children aged five- and six-years which is a population identified as having lower average income-levels in Canadian studies (Frenette, Picot and Sceviour 2004; Kerr and Beaujot 2001).

Table 3.1: Comparison of demographic characteristics across study area, Winnipeg CMA, Manitoba and Canada, 2000-01

Selected census characteristics ^b	2001 Census of population data				2000 NLSCY data
	Study area (WSD1)	Winnipeg (CMA)	Manitoba	Canada	Surveyed families ^a
Median estimated household income (in \$1,000s)	46.7	55.6	50.9	55.0	33.3
% Visible minority population	20.5	12.5	7.9	13.4	25.8
% Without high school certificate	22.4	22.2	28.0	22.0	35.0
% Aboriginal identity population	15.0	8.4	13.6	3.3	23.1
% Single-mother families	27.9	14.6	13.2	12.7	32.8
% Living at same address 5 years ago	51.7	58.6	61.2	58.1	39.9

^a n = 610.

^b Variable definitions in Appendix B.

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

3.1 Neighbourhood boundary construction

The aim of this study is to compare characteristics of respondents residing in different urban areas or ‘neighbourhoods.’ Although there are numerous ways to define the concept of neighbourhood, in this study I rely on a spatial rather than a social definition of the term as is also the case for the vast majority of neighbourhood effects studies (Leventhal and Brooks-Gunn 2000; Sampson, Morenoff and Gannon-Rowley 2002). Accordingly, an important task in this study was to determine the geographic boundaries that would define neighbourhoods.

There were three overarching objectives in defining neighbourhood boundaries. First, as closely as possible, I wanted to capture the local Winnipeg understanding of neighbourhood areas. To accomplish this, I began with Winnipeg’s Neighbourhood Characterization Areas (NCAs). NCAs were adopted by the City of Winnipeg in the

1980s and accurately reflect local knowledge of neighbourhood areas. NCAs are differentiated by housing and social patterns, natural conditions such as rivers and streams, transportation routes such as rail lines and major roadways, and land usage including residential, commercial and industrial land-use patterns. NCAs represented an advantage over Statistics Canada census tracts (CT) which are most commonly applied to delineate neighbourhoods, since research has demonstrated that CTs do not always correspond well to resident-definitions of neighbourhoods (Coulton, Korbin, Chan and Su 2001) or to homogeneous socioeconomic conditions of residents (Fitzgerald, Wisener and Savoie 2004, 18).

Second, to optimize analytical power, I wanted to ensure that children were relatively evenly distributed between neighbourhoods. Power refers to “the probability of rejecting the null hypothesis if it is *not* true” and it is dependent on a number of considerations such as the sample size and distribution between neighbourhoods, as well as the magnitude of the intraclass-correlation (or variation in the dependent across neighbourhoods) and the strength of the effect being considered (Kreft and de Leeuw 1998, 126). In general, large numbers of individuals within large numbers of groups (neighbourhoods) increases analytical power; although Kreft and de Leeuw argue that the complexity of factors involved makes it difficult to arrive at a “rule of thumb” for sufficient sample sizes. While the NLSCY community component data did not consider the possibility of multilevel analysis in its sampling design; there was a reasonably even distribution of respondent children across the study area. Nonetheless, in some cases

neighbourhood boundaries were adjusted to accommodate an adequate distribution of the 610 respondents between neighbourhoods.

And finally, to adjust the existing NCA boundaries to better accommodate the sample distribution, I adjoined geographically contiguous Statistics Canada dissemination areas¹⁴ only when these areas were within the same quartile of socioeconomic disadvantage based on the census variables described below.

After adjustments, there were 36 neighbourhoods within the WSD1 with on average about 17 children per neighbourhood (unweighted)—a minimum of 6 and a maximum of 30.

3.1.1 Neighbourhood variation

An additional consideration in this study was the variation between neighbourhoods with respect to socioeconomic characteristics. Snijders and Bosker (1999) have demonstrated that a restricted range of neighbourhood types can lead to an underestimation of neighbourhood effects. Ideally, samples designed for neighbourhood effects research would include large numbers of respondents within large numbers of neighbourhoods with significant variation between neighbourhood types (Leventhal and Brooks-Gunn 2000). Studies based on national samples provide the greatest quantity and variation in neighbourhoods; however, these studies are typically designed for purposes other than neighbourhood level analyses, and are limited by the numbers of children within each neighbourhood. For example, multilevel studies based on the Canadian NLSCY have included large proportions of neighbourhoods containing less than three

¹⁴ Statistics Canada dissemination areas are small geographic areas containing roughly 400 residents.

respondents (e.g., Boyle and Lipman 1998), or alternatively, have eliminated large proportions of neighbourhoods in order to ensure significant numbers of respondents in each. As an example of the latter case, Romano et al. (2001) eliminated 96% of the census tracts captured in the NLSCY to conduct their multilevel analysis of children's behavioural outcomes.

Since the number of neighbourhoods was limited to 36 in this study, I conducted additional tests to examine their variation. Table 3.2 compares neighbourhoods falling into the highest and lowest average household income quartiles and shows that there were significant differences between the populations of these two neighbourhood categories for a number of factors. The analyses in the following chapters are concerned with the potential influences that these compositional features of neighbourhoods might have on parenting and children's outcomes.

Table 3.2: Comparison of selected characteristics for the highest and lowest income neighbourhoods

Selected neighbourhood characteristics ^a	Average neighbourhood household income quartiles	
	1st	4th
	Lowest income	Highest income
% of population 20 years and over with Bachelor's degree or higher	6.5	27.8 **
% of population self-identified as Aboriginal	31.4	5.1 ***
% of population receiving Government transfer payments	28.8	9.7 ***
% of population living at a different address 1 year previously	25.3	14.3 **
% of recent immigrant population arriving within last 5 years	19.8	10.5 *
% of single-mother families	32.6	13.6 ***
% of population 20 years and over without a high school certificate	30.0	15.1 ***

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$

^a Variable definitions available in Appendix B.

Data source: Statistics Canada 2001 Census.

4.0 Measures

4.1 *Dependent variables*

The study investigates neighbourhood and individual-level associations with two categories of dependent variables derived from the NLSCY community component: first, parenting practices and second, children's behavioural and learning outcomes. With the exception of the children's verbal ability score described below, the dependent variables were scales calculated from multiple-items. To calculate these scales, I followed the general procedure of first determining the factor structure of the set of related items using factor analysis, and next calculating average scores for each identified factor. Average scores were calculated by summing the values (e.g., a response from 0 to 4) for each item that "loaded" into a factor and dividing the sum by the total number of items in that particular factor.

To address the problem of partial missing data (i.e., cases where respondents answered some, but not all of the items related to concepts of interest in the study), I also performed imputation in the construction of average scores. For example, each parent received a scale score based on the sum of their responses to each item identified in a factor. To avoid losing observations for parents who responded partially to the items in the scale, I calculated scales based on the mean for the responses that were provided, but only if 50% or more of the items in a scale were answered. An examination of partial non-respondents for each scale in the study revealed that partial-responders did not differ significantly from full-responders with respect to a number of socioeconomic and

demographic indicators. Thus, partial non-responders were *not* more or less likely to have low family socioeconomic status, to live in single parent families, immigrant or Aboriginal families. In addition, the patterns of non-response were not found to be related to the scales. For example, based on the answers that *were* provided, partial-responders did not have significantly higher or lower scores than those who responded fully. As a result, this method of imputation provided a reasonable estimate of the scores that would have been obtained if there were full item-response, serving to decrease non-response without seriously altering the results for the models fitted in the study.

Dependent variables were also rescaled to 10-point scales such that 10 represented the highest-level of the practice or behaviour, and 1 represented the lowest-level. All dependent variables were continuous and approximately normally distributed in these data. The remainder of this section describes the properties of each dependent variable.

4.1.1 Parenting practices

An objective of this study was to assess different aspects of parenting behaviour that had been identified in the body of research on families and child development. In particular, the aim was to investigate neighbourhood influences on the continuum of parenting practices proposed by Furstenberg and colleagues (1999; Eccles et al. 1993). These researchers argued that there were functional differences between parenting practices targeting the environment within households, and more specifically the behaviours and actions of the child, and the practices targeting the environments beyond the household such as schools, neighbourhoods and larger communities. In order to

assess similar parenting behaviours, I followed Furstenberg et al.'s methodology by creating "higher-order" constructs reflecting different aspects of the parenting continuum based on existing NLSCY parenting subscales (1999, 110).

The parent subscales included a variety of parental behaviours ranging from those focussed exclusively on parent-child interaction to those focussed on parents' interaction with the community, or promotion of children's ability to interact with the community. Subscales are listed in Table 3.3 and specific items in each subscale are provided in Appendix A.

To assess whether the 11 parenting behaviours could be reduced to a smaller number of global concepts, I conducted a factor analysis (Table 3.3). The resulting factor patterns were consistent with three of Furstenberg et al.'s (1999) higher-order parenting constructs: discipline effectiveness, parental investment and parental involvement. I calculated parenting practices scores for each of the three constructs by summing and averaging the subscale scores that loaded most heavily on each factor.

Table 3.3: Parenting practices factor pattern for principal components analysis with varimax rotation

Variables	Factor loading ^a	Scale reliability ^e
<i>Discipline effectiveness</i> ^b		0.74
Harsh discipline	-0.80	
Consistency of rules	0.75	
<i>Parental investment</i> ^c		0.71
Literacy-numeracy skill development	0.73	
Social skill encouragement	0.72	
Parent-child activities	0.71	
Positive/nurturing parenting	0.68	
<i>Parental involvement</i> ^d		0.60
Parental involvement in community	0.76	
Parent interaction with neighbours	0.54	
Parent's use of child-centred community resources	0.53	
Parent's involvement in child's school	0.52	
Parent's advice seeking behaviour.	0.51	

^a Items are included for which the absolute value of the loading is ≥ 0.50 .

^b Factor eigenvalue = 1.14; explained variance 12.2%

^c Factor eigenvalue = 2.88; explained variance 20.3%

^d Factor eigenvalue = 1.34; explained variance 16.2%

^e Cronbach's alpha.

Discipline effectiveness included items related to consistency and harsh discipline (the latter subscale was reversed before constructing the discipline effectiveness scale). Based on average inter-item correlation for both subscales, the reliability coefficient (Cronbach's alpha)¹⁵ for this scale was 0.74. The discipline effectiveness construct is most closely related to what Furstenberg et al. refer to as "traditional in-home family processes" (1999, 81) and reflects Baumrind's (1989)

¹⁵ Cronbach's alpha is a measure of internal consistency based on the average correlation between items. It is assumed that items are positively correlated with each other because they are attempting to measure a common construct therefore a Cronbach's alpha of close to 1 indicates perfect consistency.

category of authoritative parenting. The link between effective discipline and consistent rule setting and positive children's outcomes has been demonstrated frequently in empirical research (Baumrind 1989).

Parental investment included items related to the literacy-numeracy skill development, social skill development, parent child activities and positive/nurturing subscales. The alpha for items in this scale was 0.71. The scale is similar to Furstenberg's investment concept capturing parental strategies aimed at promoting children's skills and exposing them to positive community opportunities (1999, 118).

Finally, *parental involvement* included items related to parents' participation in different aspects of the environment beyond the household such as involvement with community organizations and activities, involvement in the child's school, interaction with neighbours, use of child-centred resources and advice-seeking behaviour. The alpha for items in this scale was 0.60. Although the subscales loaded on a single score in the Winnipeg sample, they are similar to Furstenberg's composite measures for 'institutional connections' and 'positive social networks'. The former is a composite measure reflecting parents' involvement in community organizations, school, and religious organizations, and the latter measures parents' access to formal and informal relationship networks (1999, 273, n. 4).

Based on their orientation toward internal family processes or management of external environmental conditions, the three higher order parenting constructs investigated in this study represent different aspects of Furstenberg's continuum of parenting behaviours.

Figure 3.2: Parenting continuum

4.1.2 Children's outcomes

Receptive verbal ability. Children's receptive verbal ability was assessed by the Peabody Picture Vocabulary Test – Revised (PPVT-R). The test was first developed by Dunn and Dunn (1981) as an assessment of receptive or hearing vocabulary, and has been widely tested and validated across age groups (aged 3 to adult), countries and languages (e.g. Dunn, Theriault-Whalen and Dunn 1993). The PPVT-R score provides an estimate of the child's verbal ability and scholastic aptitude and correlates well with other measures of intelligence and academic achievement. While, the test is not considered to be equivalent to formal IQ tests assessing multiple abilities such as the WISC-R or the McCarthy Scale of Children's Abilities, it has advantages for young children since it is short (15 minutes in length) and does not require written or verbal responses (Kohen, Hertzman and Brooks-Gunn 1998).

The PPVT-R questionnaire was administered by a Statistics Canada interviewer in a face-to-face in-home interview. The standardized score for the main NLSCY survey

has a mean of 100 and a standard deviation of 15 (Statistics Canada 2001). For the Winnipeg sample of 5- and 6-year-olds, scores ranged from 40 to 147 with a mean of 98.4 and standard deviation of 16.4.

Behaviour problems scale: A measure of children's behavioural problems was derived from the Child Behaviour Checklist (Achenbach and Edelbrock 1981) modified for Canadian children on the NLSCY instrument (Statistics Canada 2001). The behaviour score is based on 24 items measuring internalizing and externalizing behaviours scored on a 3-point scale in which a score of 0 indicates an absence of the behaviour problem¹⁶. Detailed definitions of these variables are provided in Appendix B. For the purposes of this study, items were combined to create an overall behaviour score which was rescaled to a 10-point scale, where 1 was an absence of behaviour problems and 10 was the highest degree of problems. For the Winnipeg sample, the mean score was 2.6 and the standard deviation was 1.3. Given general population nature of the NLSCY community component, the variable was not unexpectedly skewed, even after log transformation, such that the majority of children were reported to have fewer behaviour problems.

Oberwittler (2004, 219) has argued that skewed variables do not cause serious obstacles for linear regression because this technique is relatively robust, and in

¹⁶ The NLSCY behaviour items reflect both externalizing and internalizing child behaviours (Achenbach and Edelbrock 1981). The former refers to a group of behaviours that are manifested in children's negative or disruptive outward behaviours and were captured by the NLSCY through items measuring children's physical aggression, indirect aggression, delinquency and hyperactivity. The latter refers to a group of behavioural problems that influence children's internal psychological environments. These behaviours were captured by the NLSCY through items related to children's emotional disorder and anxiety. For the purposes of this study all behaviour items were combined into one scale since evidence suggests that there is substantial co-morbidity between internalizing and externalizing behaviour problems as children frequently exhibit both forms at once (Hinshaw 1987; Liu 2004).

addition, the interpretation and testing of non-linear regression techniques in multilevel analysis are less straightforward (e.g., variance components are difficult to assess, parameter estimates are less robust, and deviance statistics do not exist) (See also Browne, Subramanian, Jones and Goldstein 2005; Guo and Zhao 2000). Based on these arguments, I used the linear variable in instances where I assessed children's behaviour problems as a dependent variable. I also conducted tests with its log-transformation. Since there were virtually no differences in the results, I used the behaviour problems score in its original metric.

4.2 *Independent variables*

4.2.1 Individual-level variables

Social support. The social support scale measures parents' perceptions that they would have access to support in the event of a crisis, rather than the actual reception of support. Parental social support was measured on the NLSCY by 8 items, based in part on the Social Provisions Scale (Cutrona and Russell 1987). The scale measures parents' perceptions of access to three dimensions of social support: guidance, reliable alliance and attachment. Parents rated each item on a 4-point scale where 0 represented strong disagreement and 3 represented strong agreement. Specific items include: (1) If something went wrong, no one would help me; (2) I have family and friends who help me feel safe, secure and happy; (3) There is someone I trust whom I would turn to for advice if I were having problems; (4) There is no one I feel comfortable talking about

problems with; (5) I lack a feeling of closeness with another person; (6) There are people I can count on in an emergency; (7) I feel part of a group of people who share my attitudes and beliefs; and (8) There is no one who shares my interests and concerns. For the purposes of the study, the social support score was rescaled to 10-point scale where 1 was the absence of support and 10 was the highest degree of support. Items 1, 4, 5 and 8 were reversed before created the scale. Among parents of respondent children in the Winnipeg sample, the mean score was 7.3 with a standard deviation of 1.5.

Neighbourhood cohesion. A variable derived from parents' perceptions of the level of social cohesion in the neighbourhood was used separately as individual-level and neighbourhood-level variables. Social cohesion is a summary score based on parents' views of the extent to which the neighbourhood was a place where residents would act collectively to provide assistance to each other when needed. A more detailed description of the variable is below. At the individual-level the minimum score was 0 representing the lowest degree of perceived neighbourhood cohesion, and the maximum score was 10 representing the highest degree of cohesion. The mean score for the Winnipeg sample was 6.2 with a standard deviation of 1.9.

Individual and family controls. Individual-level controls were added to multilevel models to account, in part, for selection bias resulting from the fact that individuals are not randomly assigned to the neighbourhoods in which they live; rather, they exert some choice in these decisions (Duncan, Connell and Klebanov 1997). These controls were derived from the NLSCY data and measured characteristics of children, parents and families. Descriptive statistics are provided in Table 3.4. Variables included

the gender of the child (boy = 1, girl = 0); in some models the child's behavioural problems scale as described above was added as a control; the gender of the parent (mother = 1, father = 0); the age of the parent in years; the single parent status of the household (single = 1, not single = 0); parent health quality scale (1 = poor, 5 = excellent); the number of children in the household (three or more children = 1, less than three children = 0); and the family socioeconomic status (SES).

Family SES measured the relative position of the family in a hierarchical social structure based on their access to economic, educational, and occupational resources. The measure of SES was calculated for each household assigned to a responding child and was derived from five sources: the level of education of the parent, the level of education of the spouse/partner, the prestige of the parent's occupation, the prestige of the occupation of the spouse/partner, and household income. The components of family SES were standardized using the means and standard deviations of the variables for all households as observed in cycle 3 of the main NLSCY survey. Thus, standards were established based on families in the Canadian sample with selected children aged 0 to 16 (Statistics Canada 2001, 35). The mean SES score for the Winnipeg sample was 0 with a standard deviation of 0.56 and minimum and maximum values of -2 and 2, respectively.

It is important to note that family socioeconomic status is treated as a continuous measure in this study in order to examine its relationship to parenting and child outcomes across the full spectrum of SES levels present in the general population dataset. Nonetheless, some evidence suggests that the relationship between SES and individual behaviours and outcomes may be most important among those at the lowest

levels of SES. For example, Hartnagel (2000, 121) points out that while the research findings are mixed, the bulk of existing literature demonstrates that the highest levels of crime can be found among individuals at the lowest socioeconomic class levels.

Sample-size constraints in this study did not permit a more detailed examination of neighbourhood effects, parenting and child outcomes for families falling into the very lowest SES category; however, further investigation is warranted in this area.

Table 3.4: Descriptive statistics

	Mean	Standard Deviation	Minimum	Maximum
<i>Individual-level variables (n = 610 respondents)</i>				
Child boy	0.52	0.50	0	1
Parent mother	0.89	0.32	0	1
Parent age (years)	33.30	7.03	15	60
Single parent	0.38	0.48	0	1
Parent health quality	3.86	1.01	1	5
3+ children in the household	0.35	0.48	0	1
Child behavioural problems	2.61	1.33	1	10
Family SES	0.00	0.56	-2	2
Social support	7.39	1.53	1	10
Social cohesion	6.22	1.87	1	10
Discipline effectiveness	7.05	1.18	1	10
Parental investment	6.89	1.41	1	10
Parental involvement	5.89	1.41	1	10
<i>Neighbourhood-level variables (n=36 neighbourhoods)</i>				
Socioeconomic disadvantage	0.00	1.00	-3	2
Residential mobility	0.00	1.00	-2	2
Ethnic heterogeneity	0.00	1.00	-2	3
Social cohesion	6.29	0.81	5	8

Data sources : 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

4.2.2 Neighbourhood-level variables

Neighbourhood structural characteristics. To assess neighbourhood differences in socioeconomic resources and population characteristics in the Winnipeg study area, a range of variables were constructed from the 2001 Census (see Table 3.5). Detailed definitions of these variables are provided in Appendix C. All variables were derived from the 2B form of the Statistics Canada Census which represents a 30% sample of the population and were mapped to the neighbourhood boundaries used in this study (for a more detailed explanation of this process see Fitzgerald, Wisener and Savoie 2004).

I conducted a factor analysis in order to assess whether the Census variables could be reduced to a smaller number of overarching concepts. Consistent with empirical research on social disorganization theory based on American neighbourhoods (e.g., Sampson, Raudenbush and Earls 1997) the factor analysis results indicated that the census variables loaded on three separate factors: *socioeconomic disadvantage*, *residential mobility* and *ethnic heterogeneity*.

Table 3.5 shows that variables most associated with socioeconomic disadvantage load on the same factor. This factor is characterized by particularly high loadings for low education, Aboriginal population,¹⁷ proportion of the population receiving Government transfers, lower average household incomes, unemployment, single-mother-led households, and the incidence of individuals living below the poverty line.

¹⁷ Several studies have noted that greater concentrations of Aboriginal than non-Aboriginal people live in low-income neighbourhoods, and this is particularly the case in Winnipeg (e.g., Hatfield 1997; Heisz and McLeod 2004; Richards 2001). Based on the 2001 Census, Aboriginal people comprised about 31% of the population residing in Winnipeg's low-income neighbourhoods, an increase of 6% from the previous Census (Heisz and McLeod 2004: 65). Aboriginal people living in low-income neighbourhoods also tend to face greater challenges than non-Aboriginal people such as lower personal income levels, educational attainment, employment participation, and residential stability (Richards 2001).

Variables most highly loading on the residential mobility factor included the proportion of the population living alone, the proportion of recent movers, the proportion of owner occupied housing (negative contribution) and the proportion of the population spending more than 30% of their income on shelter. Finally, variables loading on the ethnic heterogeneity factor included the proportion of recent immigrants, and the proportion of visible minority population.

For the analyses in this study, I created three factor regression scores for the overarching concepts revealed in the factor analysis. Each score was weighted by its factor loading. Table 3.4 shows that the mean for each factor score was 0 and the standard deviation was 1.

Table 3.5: Neighbourhood census variable factor pattern for principal components analysis with varimax rotation

Variables	Factor loading ^a
<i>Socioeconomic disadvantage</i> ^b	
% Population aged 20 years and over without high school	0.94
% Aboriginal Identity	0.83
% Government transfers	0.80
Average household income in \$1000s	-0.78
% Unemployment rate - 15 years and over	0.75
% Single-mother families	0.73
% Incidence of low income in 2000 for economic families	0.71
<i>Residential mobility</i> ^c	
% Living alone	0.88
% Movers within past year	0.85
% Owner-occupied household	-0.84
% Households spending 30% or more on shelter	0.71
<i>Ethnic heterogeneity</i> ^d	
% Visible minority	0.92
% Recent immigrants (last 5 years)	0.85

^a Items are included for which the absolute value of the loading is ≥ 0.70 .

^b Factor eigenvalue = 6.10; explained variance 38.1%

^c Factor eigenvalue = 4.58; explained variance 28.6%

^d Factor eigenvalue = 2.88; explained variance 18.0%

Neighbourhood social cohesion. Cohesion was based on a summary score of parental reports of five items assessing their perceptions of the extent to which the neighbourhood was a place where residents would act collectively to provide assistance to each other when needed. Individual items were rated on a 3-point scale and included: (1) if there is a problem, neighbours get together to deal with it; (2) there are adults in the neighbourhood that children can look up to; (3) people are willing to help their neighbours; (4) you can count on adults in the neighbourhood to watch that children are

safe and out of trouble; and (5) when I am away, I know my neighbours will keep their eyes open for possible trouble. The summary score for social cohesion was reversed and rescaled so that 10 reflected the highest level of perceived neighbourhood cohesion, and 1 reflected the lowest level. Parents' scores were averaged within each neighbourhood to arrive at the neighbourhood cohesion score. The mean score across the 36 neighbourhoods was 6.29 with a minimum mean score of 5 and a maximum mean score of 8.

It should be noted that measuring neighbourhood phenomenon by aggregating individual survey responses represents a potential weakness in this study. It has been argued elsewhere that measures related to social interaction can be meaningful individual attributes but may not always accurately apply to neighbourhoods since they may be more likely to reflect individual preferences or opinions (Coulton, Korbin and Su 1996). This problem may be compounded when the numbers of respondents within each neighbourhood are small. While ideal circumstances would dictate that social cohesion would be measured by large numbers of respondents or perhaps even independent raters to get a more accurate perception of social interaction in the neighbourhood, this is not possible through data currently available to study Canadian populations. Consequently, the social cohesion measure based on aggregated survey responses used here should be interpreted with some caution, and at best represents the collective perceptions of parents with young children in the Winnipeg neighbourhoods being studied.

5.0 Analytic techniques

In the study I investigated hypotheses related to variation in child outcomes and parenting practices both across the WSD1 as a whole and between neighbourhoods in the study area. These investigations required two different analytical strategies which are detailed in the two remaining sections of this chapter; however, to begin with there were two general procedures that were consistent for both types of analysis.

First, I assessed both moderating and mediating effects of third variables on the relationship between independent variables (i.e., either individual- or neighbourhood-level variables) and dependent variables (i.e., parenting and child outcomes). More specifically, Baron and Kenney (1986) describe the *moderating function of third variables* as one that effects the direction and strength of the relationship between an independent variable and an outcome variable (p. 1174). The existence of a moderating effect is assessed through the presence of a significant product term or interaction between an independent variable and a third variable of interest. As an example, in this study I am interested in variation in the relationship between an individual characteristic such as parental access to social support and parenting practices across different neighbourhood environments. To examine these relationships, I test for the presence of “cross-level interactions” in which a variable describing neighbourhood conditions may affect the relationship between a family characteristic and parenting practices. A significant product or interaction term would demonstrate that the relationship between the family characteristic and parenting practices will be either stronger or weaker at

different levels of the neighbourhood condition. In this case, the strength of the relationship between parents' access to social support and their use of various parenting practices would vary according to the level of neighbourhood disadvantage.

Baron and Kenney (1986) also describe the *mediating function of third variables* as one in which the third variable partially or fully accounts for the relationship between the independent variable and the dependent variable. For example, in the study I test hypotheses concerning the extent to which parental characteristics, such as access to social support, account for or mediate the relationship between family socioeconomic conditions and parenting practices. To test for mediating relationships in this study, I employ a stepwise approach outlined by Baron and Kenny (1986, 1177) who describe three criteria that must be met. First, the independent variable (e.g., family socioeconomic status) must significantly predict the mediating variable (e.g., parental social support). Second, the mediating variable must significantly predict the dependent variable (e.g., parenting practices). Finally, when the dependent variable is regressed on the independent variable and the mediating variable, the relationship between dependent variable and the mediating variable remains significant, while the relationship between the dependent variable and the independent variable is reduced to statistically non-significant level. Thus, having met the other criteria, social support would play a mediating role, if its addition in the third model rendered the relationship between family socioeconomic status and parenting practices non-significant.

A second strategy consistent for both aggregate and multilevel analyses in this study is the weighting procedure. The NLSCY community component collected in 2000

was based on an equal probability simple random sample where each respondent in the community was given an equal weight corresponding to the ratio of the population size to the sample size (for Winnipeg this figure was about 3.6). The equal probability of being selected within the community meant that no rescaling to adjust for sampling design was required; consequently, weights were not assigned in the statistical analyses conducted in this study.

5.1 Individual-level analyses

The analyses in chapter 4 (and parts of chapters 5 and 6) assessed relationships across the entire sample, and consequently I used conventional fixed-effects ordinary least squares (OLS) regression to examine predictors of the parenting and child outcome variables. However, since families reside in neighbourhoods and there is a chance that individuals living in close proximity may be more similar to each other than to those living in other neighbourhoods, it was necessary to determine the extent to which non-independence among these individuals might influence inferences.

For this reason, I estimated models using conventional OLS standard error estimation and compared these results to models using robust standard error estimation grouped by neighbourhood (using the HLM 6.0 ordinary least squares regression procedure). The latter are used when the clustering of cases (e.g., by neighbourhood) requires a relaxation of the assumption of independence. In tests with the Winnipeg data, the direction and strength of the estimated coefficients remained very similar across the

different models; however, the standard error estimates increased to adjust for the non-independence of individuals within neighbourhoods. Thus, by accounting for clustering within neighbourhoods, robust standard errors permitted more conservative statistical tests of the hypotheses in Chapter 4. Results based on robust standard errors are reported for the individual-level analyses presented in chapter 4.

5.2 *Multilevel analyses*

To address hypotheses related to the association between neighbourhood environments and individual outcomes in chapters 5 and 6 it was necessary to statistically account for the clustering of sampled children and their parents within neighbourhoods. For these purposes, I estimated a series of multilevel models using HLM 6.0 (Kreft and de Leeuw 1998; Raudenbush and Bryk 2002; Snijders and Bosker 1999; Teachman and Crowder 2002). When data are clustered, individuals within the same cluster (e.g., neighbourhood) may not be completely independent from each other since they will likely be exposed to similar influences. Traditional single-level strategies applied to this type of data will not fully account for the possible correlation among grouped individuals, and consequently will produce overly liberal standard error estimates (Teachman and Crowder 2002; 289-290). Multilevel procedures address the statistical challenges that result when individuals are clustered within larger groups, by permitting partitioning of the variance in outcomes among individual- and neighbourhood-levels.

Since there was only one responding child per household in the Winnipeg NLSCY sample, and children were nested within neighbourhoods, the models estimated in this study represented only two levels: the individual child/parent-level and the neighbourhood-level. The object of the analyses was to estimate both child outcomes and parenting practices as a function of individual characteristics and neighbourhood conditions.

Using a multilevel strategy it was possible to assess three related aspects of these relationships: (1) the relative importance of the neighbourhood context in predicting the outcome of interest, or in other words, the proportion of variance in outcomes explained by differences in individuals as compared to differences in neighbourhoods; (2) the extent to which variation in the outcome of interest could be explained by individual-level and neighbourhood-level correlates, e.g., whether neighbourhood conditions influenced individual outcomes over and above their individual circumstances; and (3) the influence of neighbourhood-level characteristics on the association between individual characteristics and the outcome, or more specifically, the presence of significant cross-level interactions. In the remainder of this section the multilevel model, assumptions and hypothesis testing procedures are briefly described.

5.2.1 Multilevel model specification

As a first step in conducting multilevel analyses I examined outcome variables separately and without individual or neighbourhood-level correlates to determine whether a significant proportion of the variance for each outcome was attributable to the neighbourhood-level (Raudenbush and Bryk 2002, 69). The random intercept or

“empty” model represents the simplest case of multilevel modelling and is equivalent to conventional ANOVA with random effects (Raudenbush and Bryk 2002, 69-72). The model can be expressed in two-levels with the following equations. At the individual-level,

$$Y_{ij} = \beta_{0j} + r_{ij} \quad (\text{Equation 5.1})$$

where, Y_{ij} is the outcome for the i^{th} individual within the j^{th} neighbourhood, β_{0j} is the mean level of the outcome in question (intercept) for each neighbourhood, and r_{ij} is the individual residual (or the difference between the neighbourhood mean for the outcome and the level of the outcome for each individual in the sample—the i^{th} individual in the j^{th} neighbourhood) (Raudenbush and Bryk 2002, 69-70).

At the neighbourhood-level,

$$\beta_{0j} = \gamma_{00} + u_{0j} \quad (\text{Equation 5.2})$$

where β_{0j} is each neighbourhood’s mean outcome score which is equal to the grand mean γ_{00} , or the average of all neighbourhoods means, plus the neighbourhood level residual, u_{0j} or the difference between the population mean and the mean for each neighbourhood (Raudenbush and Bryk 2002, 70).

Based on the variance components derived from the neighbourhood and individual-level residuals in the random intercept models, I calculated intraclass correlation coefficients (ICC) for each outcome. The ICC indicates the proportion of the total variance in the outcome variable that is explained by the neighbourhood-level and is equal to the variance between neighbourhoods (τ_{00}) divided by the sum of the

between-neighbourhood variance (τ_{00}) and the individual-level variance (σ^2)

(Raudenbush and Bryk 2002, 72).

Possible ICC values range from 0 to 1 where 0 would indicate that no parents share common neighbourhood-level parenting scores, and 1 would indicate that 100% of the parents in each neighbourhood share identical parenting scores. Thus, an ICC value less than 0.5 indicates that there is greater variability within neighbourhoods than between neighbourhoods, while a value greater than 0.5 indicates that there is greater variability between neighbourhoods than within them. An ICC value of 0 would indicate that single-level, rather than multilevel analysis, is justified.

As a next step, to assess whether the characteristics of individuals and neighbourhoods were associated with the outcomes of interest in this study, I estimated outcomes as a function of correlates at each level. In some cases, I also wanted to test whether the individual-level correlates varied significantly from one neighbourhood to the next, and whether this variation could be modelled as a function of neighbourhood characteristics in the Winnipeg sample.

As an example, adding an individual-level correlate (X_{ij}) yields the following individual-level equation,

$$Y_{ij} = \beta_{0j} + \beta_{1j}X_{1ij} + r_{ij} \quad (\text{Equation 5.3})$$

where β_{1j} represents the effect of the individual correlate on the j^{th} neighbourhood, and the subscript j indicates that the correlate is permitted to vary between neighbourhoods (Raudenbush and Bryk 2002, 80). In this case, both the intercept (β_{0j} which is the average of neighbourhood means for the outcome variable, Y), and the slope for the

correlate (β_{1j}) are treated as random variables at the neighbourhood level and can be modelled as a function of neighbourhood-level characteristics as demonstrated in the following two equations.

$$\beta_{0j} = \gamma_{00} + \gamma_{01} Z_{1j} + u_{0j} \quad (\text{Equation 5.4})$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11} Z_{1j} + u_{1j} \quad (\text{Equation 5.5})$$

In this case, Z_{1j} is the neighbourhood-level correlate, γ_{00} and γ_{10} are the intercepts, γ_{01} and γ_{11} are the regression coefficients indicating the impact of the neighbourhood characteristic, and u_{0j} and u_{1j} are the neighbourhood-level residuals. In equation 5.4, γ_{01} represents the additive effect of the neighbourhood characteristic on the average level of the outcome of interest. In equation 5.5, γ_{11} represents a cross-level interaction between the neighbourhood characteristic and the individual-level correlate X_{ij} .

After combining the individual-level and neighbourhood-level equations into a single equation, the full multilevel model is represented by the following equation.

$$Y_{ij} = \gamma_{00} + \gamma_{10} X_{ij} + \gamma_{01} Z_{1j} + \gamma_{11} Z_{1j} X_{ij} + (u_{0j} + u_{1j} + r_{ij}) \quad (\text{Equation 5.6})$$

The equation represents the individual, neighbourhood, and cross-level influences on the outcome variable, Y_{ij} , and is distinguished from a conventional fixed-effects OLS model by the residual term $(u_{0j} + u_{1j} + r_{ij})$ (Raudenbush and Bryk 2002, 80; Teachman and Crowder 2002, 286). The variances of these residual terms (τ_{00} , τ_{11} and σ^2 , respectively) represent the between-neighbourhood variation in the dependent variable that is not explained by the neighbourhood-level correlate (τ_{00}), the between-neighbourhood variation in the effects of the individual-level correlate on the dependent variable that is not explained by the neighbourhood correlate (τ_{11}), and the within-neighbourhood

variation in the dependent variable that is not explained by the individual-level and neighbourhood correlates (σ^2).

If estimates for τ_{00} and τ_{11} are greater than zero, there is variation between contexts with respect to both intercepts and individual-level slopes (Teachman and Crowder 2002, 286). If γ_{11} is greater than zero, the neighbourhood-level correlate explains at least part of the variation in the relationship between the individual-level variable, X_{1ij} , and the outcome, Y_{ij} , across neighbourhoods. Consequently, in this case there would be a significant cross-level interaction between the neighbourhood correlate and the individual correlate-outcome slope. In contrast, when τ_{00} and τ_{11} are equal to zero, there is no residual variation across contexts in either the average level of the dependent variable or the effects of the individual-level correlates and conventional fixed-effects modelling techniques are sufficient.

However, if τ_{00} and τ_{11} are not equal to zero, but are too small to reach statistical significance, a caveat has been raised. For example, Snijders and Bosker (1999; see also Diez Rouz 2004) have argued that when between-neighbourhood variance components for a given slope (e.g., τ_{11}) are not statistically significant, but the coefficient for the neighbourhood-level correlate, γ_{11} , reaches significance, it is more prudent to accept the significant interaction term than to reject it on the basis of the non-significant variance component. This is due to the fact that the power to detect significance in variance components is influenced by the sample size (and specifically the number of neighbourhoods and the number of respondents within each neighbourhood), but this is not the case with the power to detect fixed effects. Thus, Snijders and Bosker (1999)

demonstrate that variance components are difficult to detect in data with small group sizes (i.e., the number of respondents within neighbourhoods), but using the same data, there is sufficient power to detect the fixed effect of a neighbourhood characteristic (1999, 96). Diez Rouz (2004; 1954) adds that the challenge of working with data that are not ideal for multilevel analyses is a common scenario in social science research where samples designs frequently do not account for multilevel structures and doing so may be cost-prohibitive.

Given the relatively small group sizes and number of neighbourhoods in this study, the possible implications of significant associations between neighbourhood characteristics and individual-level variables were considered despite the presence of non-significant variance components in some cases.

An important consideration in developing the multilevel models in this study was the issue of centring independent continuous variables. Centring refers to the process of subtracting the same value (typically the mean) from each score in a continuous variable. The procedures and implications of centring for multilevel models have been summarized in Kreft and de Leeuw (1998, 105- 112) and Raudenbush and Bryk (2002, 31-35). Briefly, researchers typically rely on one of three methods for handling variables in multilevel models; each has different implications for model results. Variables can be (1) uncentred or left in their original metric; (2) centred around their group-means, e.g., each observation would be centred around its corresponding neighbourhood mean score for the variable; or (3) centred around the grand-mean, i.e.,

each score would be centred around the sample mean for that variable (Raudenbush and Bryk 2002; 32).

The location of the mean for individual-level variables is particularly important in multilevel models since it affects, among other aspects, the definition of the level-1 intercept (as demonstrated in, Oberwittler 2004; 2005) The choice of centring options should be based on the hypotheses to be tested. Group-mean centring of individual-level variables prevents the estimates of the groups or neighbourhood means from being adjusted for the compositional differences in the variable across neighbourhoods. Thus, when the research goal is to test for the presence of neighbourhood-level effects over and above individual-level conditions, using group-mean centring could lead to an overestimation of neighbourhood effects. Conversely, grand-mean centring of an individual-level variable makes it possible to disentangle the individual- and neighbourhood-effects on an outcome variable by accounting for compositional differences in the variable across neighbourhoods.

In this study, the object was to assess whether there were neighbourhood-level influences on parent and child outcomes over and above individual-level circumstances, consequently it was necessary to allow individual-level variables to be adjusted for the individual composition of the each neighbourhood. As a result, I used grand-mean centering when variables were continuous and left binary variables in their original metric.

The Winnipeg community component data were “unbalanced” since there were unequal numbers of respondents within each neighbourhood. This is frequently the case

in data collected for purposes other than multilevel designs (e.g., see Romano et al. 2001). In unbalanced cases, maximum likelihood procedures are used to arrive at estimates for the fixed effects and variance components (Raudenbush and Bryk 2002, 280). To test whether fixed effects, γ , are significantly different than zero, single parameter T-tests were used. To test whether variance components were significantly different than zero, chi-squared tests for random intercepts and slopes were performed. Model fit was assessed by examining the explained variance at each level of analysis and across models (Raudenbush and Bryk 2002, 149-152).

Chapter 4

Individual factors associated with parenting practices

1.0 Introduction

The review of literature in Chapter 2 pointed to a general research consensus that both parenting practices and children's outcomes are more closely related to individual-level factors than neighbourhood or larger contextual factors. As a result, before examining the associations between neighbourhood conditions and parenting strategies in the subsequent chapters, the broad aims of this chapter are first to investigate whether socioeconomic resources and other family background characteristics are associated with different parenting practices; second to investigate whether and how parenting practices are associated with children's outcomes; and third, to investigate whether parents' perceptions of their own access to social support and the conditions in their local neighbourhood environments are associated with their use of different parenting practices.

The parenting practices considered in this dissertation approximate those examined in Furstenberg et al.'s (1999) study of Philadelphia neighbourhoods: discipline effectiveness, parental investment and parental involvement. The procedures for deriving these variables were discussed in Chapter 3. Briefly, these practices are summary constructs that represent different components of parenting behaviour including aspects of within-family processes, and strategies concerned with the

environment beyond the household that promote children's skills and opportunities for interaction. In particular, discipline effectiveness is a measure of the traditional models of socialization defined by responsiveness, firm discipline and consistency of rules within the home. Parental investment measures parents' strategies to encourage children, to develop children's social and learning competencies, and to provide opportunities for children to interact with others in the local area. Finally, parental involvement measures parents' institutional connections and positive social networks (e.g., to schools or other local institutions or organizations).

1.1 Summary of current research findings

1.1.1 Parenting and family socioeconomic resources

A frequently cited finding in family research is that parents with limited socioeconomic resources have diminished capacities to parent effectively either because they suffer greater degrees of stress (Lempers et al. 1989; Conger et al. 1993a; 1993b) or because they may be chronically exposed to a culture of poverty (Fram 2003; McLeod, Kruttschnitt and Dornfeld 1994; McLoyd 1990). However, available evidence from recent Canadian studies suggests that the association between family socioeconomic variables and parenting practices—encompassing dyadic interactions between the parent and child (e.g., parenting behaviours characterized by responsiveness, harshness, firm discipline, positive interaction or consistency)—is positive but relatively weak. Thus, according to these studies, family socioeconomic status (SES) is not strongly associated

with parenting practices. This finding is consistent across studies that have examined SES as a composite variable (Miller, Jenkins and Keating 2002) and those that have examined the separate effects of economic hardship, education and occupational status (Chao and Willms 2002). Based on large general population samples of Canadian children, these studies suggest that SES does not prescribe certain parenting practices; rather there is a significant amount of variation in dyadic parenting practices among parents who have similar levels of SES and family background characteristics.

Furstenberg et al.'s (1999) work suggests that parenting practices aimed more fully at conditioning the environment beyond the household for children (e.g., parental investment which entails promotive and protective actions by parents, and parents' institutional involvements in the local community) are more strongly associated with family socioeconomic resources and family background characteristics than is the case for dyadic parenting practices such as discipline effectiveness. In particular, levels of parents' involvement in the community significantly increased along with levels of family SES (1999, 126).

1.1.2 Factors associated with children's outcomes

Studies examining children's educational and behavioural outcomes suggest that positive parenting practices are associated with higher levels of behavioural and academic competency for children. Importantly, however, the strength of the relationship varies by the outcome and parenting practice being considered (Chao and Willms 2002; Demo and Cox 2000; Furstenberg et al. 1999; Landy and Tam 1996; Miller, Jenkins and Keating 2002). In particular, Furstenberg's work suggests that

dyadic parenting practices, such as discipline effectiveness, were most strongly associated with lower levels of adolescents' problem behaviours and psychological adjustment; whereas strategies such as parental investment in children's skills and parents' own involvement in organizations and activities beyond the household were more strongly associated with higher levels of adolescents' academic competence and activity involvement.

Studies have also linked family socioeconomic resources with children's outcomes. For example, studies have found a relationship between higher levels of family SES and greater prevalence of children's positive behaviours and academic competency (Offord and Lipman 1996; Willms 2002). Less clear is the extent to which parenting practices may influence the association between socioeconomic resources and child outcomes. Based on the national NLSCY sample, two Canadian studies have investigated whether parenting mediates the relationship between family SES and child outcomes (Chao and Willms 2002; Landy and Tam 1996; Miller, Jenkins and Keating 2002). Although the results vary for the age of the child, the type of child outcome and parenting practice, results generally indicate that parenting practices only modestly mediate the effect of SES on child outcomes. Instead, based on the NLSCY measures, both parenting practices and family SES appear to have independent effects on child outcomes (Miller, Jenkins and Keating 2002, 175).

1.1.3 The influence of social support

The link between family socioeconomic resources and social isolation was discussed in Chapter 2. Theory and research suggest that families who experience

poverty may also be more likely to experience social isolation or lower perceived social support. Moreover, parents' perceived social support has been linked to the use of particular parenting practices. For instance, in a number of studies, greater access to support has been linked to higher levels of parental nurturing and consistency (Ceballo and McLoyd 2003; Crnic, Greenberg, Robinson and Ragozin 1984; Jarrett 1995; McLoyd 1990; Taylor and Roberts 1995), and in contrast, isolation or a lack of perceived social support has been demonstrated to be linked to higher levels of abusive and/or neglectful parenting (Garbarino 1977). However, this research has been primarily concerned with traditional family process modes of parenting, and consequently, has not examined the relationship between social support and family management modes of parenting. Research also suggests that having access to social support may mediate any negative effect that low family socioeconomic resources may have on parenting practices. Thus, social support may buffer the stress associated with living in low socioeconomic circumstances (Leventhal and Brooks-Gunn 2000).

1.1.4 Parents' perceptions of their neighbourhood environments

The research evidence presented in the first two chapters of this dissertation suggested that individuals' perceptions of their local neighbourhood environments likely influence their actions and behaviours. With respect to parenting practices, Furstenberg et al.'s (1999) qualitative work indicated that parents' views of their neighbours and neighbourhoods shaped their parenting strategies (but also see, Eccles et al. 1993; Furstenberg et al. 1999; Jarrett 1995; Stack 1974). Specifically, parents from the Philadelphia sample who perceived their neighbours to be untrustworthy or who

perceived that the neighbourhood was dangerous “adopted highly individualistic styles of parenting” ranging from greater restriction and harshness to searching for safe activities and services beyond the neighbourhood (1999, 100).

1.2 Summary of hypotheses

This chapter investigates whether evidence from the Winnipeg NLSCY sample of 5- and 6-year-old children and their parents corresponds to major findings about individual-level factors and parenting practices. Based on current literature, I investigate five specific hypotheses:

Hypothesis 1. Higher levels of family SES will be associated with higher scores for each of the parenting practices, but SES will be more strongly associated with parental involvement than parents’ use of discipline effectiveness or parental investment.

Hypothesis 2. Higher parental discipline effectiveness, parental investment and parental involvement scores will be associated with lower children’s behavioural problems scores and higher children’s verbal ability scores.

Hypothesis 3. (H3a) Higher levels of family SES will be associated with lower child behavioural problem scores and higher child verbal ability scores, and (H3b) parenting practices will partially mediate these relationships.

Hypothesis 4. (H4a) Higher parental social support scores will be associated with higher levels of family SES. (H4b) Social support will also be positively associated with reported levels of discipline effectiveness, parental investment and parental involvement. (H4c) Parents' perceived access to social support will mediate the relationship between SES and parenting practices.

Hypothesis 5. (H5a) Higher parental assessments of neighbourhood cohesion will be associated with higher scores for each parenting practice, and (H5b) parental assessments of neighbourhood social cohesion will mediate the relationship between family SES and parenting practices.

2.0 Results

2.1 Parent, child and family characteristics: How are they associated with parenting practices?

Hypothesis 1 proposes that higher levels of family SES will be associated with higher scores for each of the parenting practices, but this relationship will be stronger for

parental involvement than for parents' discipline effectiveness or investment. To address this hypothesis, Table 4.1 presents ordinary least squares regression models estimating discipline effectiveness, parental investment and parental involvement. The results indicated that, together, the gender, age, and family structure variables accounted for relatively small proportions of the variation in parenting practices—roughly 3% of the variation in discipline effectiveness, 2% of parental investment and 11% of parental involvement. Note that the generally small proportions of variation in parenting and child outcomes explained in this study correspond to results presented in other studies of Canadian children and families using national NLSCY data (Kohen, Hertzman and Brooks-Gunn 1999; Kohen et al. 2002), but also to results in studies of families in other settings (Furstenberg et al. 1999).

Net of the other variables, the composite family SES variable contributed modestly, but statistically significantly, to variation in each of the parenting practices. As described in chapter 3, SES is a composite measure derived from family income, mother's and father's occupational status, and mother's and father's education, and is scaled to have a mean of zero and a standard deviation of one for families in the Winnipeg sample. For each one point increase in SES, discipline effectiveness scores increased by 0.2 ($p \leq 0.001$) points (all parenting scales range from 1 to 10), parental investment increased by 0.3 ($p \leq 0.05$) points, and parental involvement increased by 0.5 ($p \leq 0.001$) points.

These results suggest that, net of the control variables, family SES is relatively weakly associated with variation in parenting practices; however, in support of

hypothesis 1, the association is stronger for parental involvement in activities and organizations beyond the household, than for parental investment in the child or discipline effectiveness (or traditional within-family parenting practices).

Table 4.1: OLS estimates of parenting practices, Winnipeg 2001

Independent variables	Discipline effectiveness	Parental investment	Parental involvement
Intercept	5.87 *** (0.37)	6.81 *** (0.44)	4.03 *** (0.47)
Boy	0.00 (0.10)	-0.06 (0.11)	-0.02 (0.12)
Mother	0.22 (0.16)	0.02 (0.19)	0.70 *** (0.16)
Age of parent (years)	0.01 † (0.01)	0.00 (0.01)	0.03 ** (0.01)
Parent health quality	0.17 ** (0.05)	0.09 (0.06)	0.10 * (0.05)
Single-parent family	-0.06 (0.10)	-0.09 (0.13)	-0.21 (0.13)
3+ children in household	-0.02 (0.09)	-0.25 † (0.13)	-0.05 (0.13)
Family SES	0.19 ** (0.07)	0.29 * (0.13)	0.49 *** (0.10)
N	564	563	564
F	3.75 ***	2.88 **	11.10 ***
R ²	0.04	0.03	0.12
Adjusted R ²	0.03	0.02	0.11

Notes: Effects of independent variables expressed as unstandardized partial slopes and robust (standard error of b in parenthesis).

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.1$

Data source: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg.

2.2 *Parenting and children's outcomes*

Table 4.2 shows OLS models predicting children's verbal ability and behavioural problems. Model 1 in this table was a base model which examined the association between parenting practices and child outcomes, exclusive of other variables. The model addressed the second hypothesis that higher parenting practice scores will be associated with better child outcomes, or specifically, higher verbal ability scores and lower problem behaviour scores. Results indicated that there is variation in the strength and direction of the relationship across the different combinations of parenting practices and child outcomes. Thus, with respect to children's receptive verbal ability, both parental investment in children and parental involvement in activities and organizations beyond the household are significantly and positively associated with children's verbal ability scores. Net of the other variables, a one-point increase in the 10-point parental involvement score was associated with a 2.2 ($p \leq 0.001$) point increase in children's PPVT-R scores. A one-point increase in the 10-point parental investment score was associated with 1.6 point increase in the PPVT-R score. However, discipline effectiveness was positively, but not significantly, associated with verbal ability.

Results for behavioural problems showed a different pattern. Net of the other parenting practices, discipline effectiveness was most strongly and negatively associated with behavioural problems scores. Each one-point increase in discipline effectiveness was associated with a 0.4-point drop in the 10-point behavioural problems score. In contrast, higher parental involvement scores were associated with higher child behavioural problem scores. In this case, the effect was modest ($b = 0.08$, $p \leq 0.05$). One

possible explanation for this result is that parents, who have greater involvement in organizations and activities beyond the household, may do so because they seek assistance when their children have behavioural problems. Finally, net of the other variables, parental investment showed no association with child behavioural problems.

Table 4.2: OLS regression estimates of child outcomes, Winnipeg 2001

Independent variables	Receptive verbal ability			Behavioural problems		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Intercept	68.26 *** (5.95)	102.17 *** (4.07)	85.13 *** (6.06)	5.13 *** (0.42)	3.51 *** (0.38)	5.06 *** (0.48)
Boy		-2.33 (1.44)	-2.27 (1.43)		0.18 (0.12)	0.18 (0.10)
Mother		5.83 * (2.53)	4.79 * (2.30)		0.18 (0.14)	0.17 (0.14)
Parent age (years)		-0.07 (0.07)	-0.11 (0.08)		-0.02 * (0.01)	-0.02 * (0.01)
Parent health quality		-0.44 (0.61)	-0.76 (0.65)		-0.20 *** (0.05)	-0.15 ** (0.05)
Single-parent family		-3.77 ** (1.19)	-3.32 ** (1.02)		0.43 *** (0.11)	0.44 *** (0.11)
3+ children in the family		-6.07 *** (1.29)	-5.64 *** (1.27)		0.15 (0.10)	0.16 (0.11)
Family SES		8.30 *** (0.92)	7.13 *** (0.90)		-0.11 (0.12)	-0.11 (0.11)
<i>Parenting practices</i>						
Discipline effectiveness	0.83 (0.55)		0.47 (0.61)	-0.43 *** (0.07)		-0.41 *** (0.06)
Parental investment	1.64 *** (0.43)		1.31 ** (0.46)	0.00 (0.06)		0.05 (0.06)
Parental involvement	2.22 *** (0.61)		1.32 * (0.66)	0.08 * (0.04)		0.13 *** (0.04)
<i>F</i>	18.29 ***	14.38 ***	12.62 ***	33.55 ***	7.39 ***	15.56 ***
<i>R</i> ²	0.09	0.15	0.19	0.15	0.09	0.22
Adjusted <i>R</i> ²	0.08	0.14	0.17	0.14	0.07	0.21

Notes: Effects of independent variables expressed as unstandardized partial slopes and (robust standard error of b in parenthesis).

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$

Data source : 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg.

Model 2 in Table 4.2 included child, parent and family background variables (exclusive of parenting practices) in order to assess hypothesis 3a suggesting that higher levels of family SES will be associated with lower child behavioural problem scores and higher child verbal ability scores. The results showed different patterns of association

for each child outcome. With respect to verbal ability scores, when the reporting parent was a mother¹⁸ the score was 5.8 points ($p \leq 0.05$) higher than when the parent was a father, being a single parent decreased the score by 3.8 points compared with other family composition types ($p \leq 0.01$) and having three or more children in the household decreased the score by 6.1 points ($p \leq 0.001$) compared to having fewer than three children in the household. Higher levels of family SES were strongly associated with higher verbal ability scores. Model 2 results for verbal ability indicated that children's scores increased by about 8.3 points ($p \leq 0.001$) for each one-point increase in SES.

However, results for behavioural problems (model 2) indicated that SES was not significantly associated with variation in this score. However, being in a single-parent family was associated with higher behavioural problem scores in contrast to other family types ($b = 0.43$ $p \leq 0.001$), each one-point increase in parent health quality was associated with a 0.20 ($p \leq 0.001$) point drop in child behavioural problems, and each one-year increase in parental age was associated with a slight drop in child behavioural problems ($b = 0.02$, $p \leq 0.05$).

Hypothesis 3b states that parenting practices will mediate the relationship between family socioeconomic status and child outcomes. To assess this hypothesis, model 3 included child and family controls, SES and parenting practice variables. The hypothesis was not fully supported by the results for either child outcome. However, the addition of parenting practice variables partially mediated the relationship between SES

¹⁸ As was described in greater detail in Chapter 3, for ease of discussion in this study I refer to "parents", "mothers" and "fathers". However, parents in the NLSCY survey are represented by the Person Most Knowledgeable (PMK) about the child, which in the vast majority of cases is the child's biological parent, but in some cases is someone other than the biological parent who nonetheless is a primary caregiver for the child. "Mothers" and "fathers" in this study refer to female and male PMKs.

and children's verbal ability scores. In this case, results showed a 14% decrease in the coefficient for SES from model 2 to model 3 ($b = 8.3$ and 7.1 , respectively). Moreover, the effects of being a mother, in a single-parent family, and having three or more children in the household also decreased slightly, but remained significant with the addition of parenting practices to the model. In general, the results indicated that some portion of the relationship between SES and children's verbal ability scores was mediated by parenting practices, though this effect was not strong.

In contrast, child behavioural problems were not mediated by parenting practices. Given that SES was not associated with child behavioural problems in model 2, parenting practices were inconsequential to this relationship in model 3. However, results show that parenting is more important to behaviour than family background. In particular the effect size for discipline effectiveness is larger than the effect size of SES. Thus, being in a family with an above average level of SES is less influential for children's decreased risk of problem behaviour than having a parent who reports higher levels of discipline effectiveness.

2.3 Perceived social support and parenting practices

To assess the association between family SES and social support, an ordinary least squares model predicting variation in parents' perceived levels of social support is presented in Table 4.3. In addition to the SES measure, the model controlled for sex, age and family structure variables. Results demonstrated that, net of the other variables,

family SES is only modestly but positively associated with social support. A one-point increase in SES is associated with a 0.3-point ($p \leq 0.05$) increase in the 10-point social support score. This finding provides some support for hypothesis 4a that scores for parental access to social support will increase along with levels of family socioeconomic resources.

Table 4.3: OLS estimates of parental social support predicted by SES and family factors, Winnipeg 2001

Independent variables	
Intercept	-1.04 *** (0.47)
Boy	-0.22 † (0.12)
Mother	0.25 (0.27)
Parent age (years)	0.02 † (0.01)
Parent health quality	0.14 * (0.07)
Single-parent family	-0.13 (0.15)
3 + children in the household	-0.20 (0.12)
Family SES	0.26 * (0.12)
<i>F</i>	3.65 ***
<i>R</i> ²	0.04
Adjusted <i>R</i> ²	0.03

Notes: Effects of independent variables expressed as unstandardized partial slopes and robust (standard error of b in parenthesis).

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.1$

Data source: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg.

Table 4.4 presents the relationship between parenting practices and parents' perceptions of their own access to social support. Models included sex, age, and family structure controls, family SES and the parent social support score. For each parenting practice score, the results in this model were consistent with hypothesis (4b) that parents' perceived access to social support would be positively associated with parenting practice scores.

Moreover, for each of the three models presented in Table 4.4 the addition of social support mediated the relationship between SES and parenting practices as expected in hypothesis (4c). The mediating role was greatest in the parental investment model where the effect of family SES on investment decreased by about one-third (34%) and was rendered statistically non-significant, from 0.29 ($p \leq 0.05$) in the base model shown in Table 4.1 to 0.19 ($p > 0.1$) in Table 4.4. The SES coefficients were also reduced by about 16% in the discipline effectiveness model (from 0.19 $p \leq 0.01$ in Table 4.1 to 0.16 $p \leq 0.05$ in Table 4.4), and by only about 6% in the parental involvement model (from 0.49 $p \leq 0.001$ in Table 4.1 to 0.46 $p \leq 0.001$ in Table 4.4). In the latter case, the minimal reduction in the contribution of SES to greater parental involvement after adding social support to the model suggests that social support did not significantly mediate the relationship between SES and parental involvement. Rather both SES and social support contributed significantly and independently to variation in parental involvement.

Table 4.4: OLS estimates of parenting practices predicted by perceived support and individual factors, Winnipeg 2001

Independent variables	Discipline effectiveness	Parental investment	Parental involvement
Intercept	5.91 *** (0.36)	6.96 *** (0.42)	4.27 *** (0.46)
Boy	-0.02 (0.10)	-0.06 (0.11)	0.01 (0.12)
Mother	0.19 (0.16)	-0.05 (0.18)	0.58 *** (0.16)
Age of parent (years)	0.01 (0.01)	0.00 (0.01)	0.03 ** (0.01)
Parent health quality	0.18 *** (0.05)	0.07 (0.06)	0.07 (0.05)
Single-parent family	-0.03 (0.10)	-0.08 (0.13)	-0.17 (0.14)
3+ children in household	-0.03 (0.09)	-0.21 (0.13)	0.03 (0.13)
Family SES	0.16 * (0.07)	0.19 (0.12)	0.46 *** (0.10)
Parent social support	0.11 ** (0.03)	0.18 *** (0.04)	0.16 *** (0.03)
<i>F</i>	5.24 ***	5.15 ***	11.88 ***
<i>R</i> ²	0.07	0.07	0.15
Adjusted <i>R</i> ²	0.06	0.06	0.14

Notes: Effects of independent variables expressed as unstandardized partial slopes and robust (standard error of b in parenthesis).

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.1$

Data source: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg.

2.4 Parents' perceptions of neighbourhood conditions and parenting practices

In Table 4.5 the association between parents' views of the conditions in their local neighbourhoods and their parenting practices are examined. As is the case for other analyses in this chapter, these models are based on individual-level data. All models include gender, age and family structure controls, as well as the family SES measure.

Results showed some support for hypothesis 5a that parents' views of the level of cohesion in the neighbourhood are positively associated with their reported levels of discipline effectiveness, parental investment and parental involvement. Thus, net of the control variables, parents who viewed their neighbours as more likely to, for example, assist or intervene if there were problems also tended to report higher levels of each parenting practice. In addition, these results provided some support for hypothesis 5b. For each parenting practice, the addition of the neighbourhood cohesion variable in model 1 was associated with a decrease in the size of the SES coefficient from its size in the base model in Table 4.1. This was particularly the case for the discipline effectiveness and parental investments models, for which the SES coefficients decreased by about 21% and 24%, respectively.

Table 4.5: OLS estimates of parenting practices predicted by individual and neighbourhood factors, Winnipeg 2001

Independent variables	Discipline effectiveness Model 1	Parental investment Model 1	Parental involvement Model 1
Intercept	5.43 *** (0.36)	6.40 *** (0.45)	3.19 *** (0.55)
Boy	-0.01 (0.10)	-0.07 (0.12)	-0.01 (0.11)
Mother	0.19 (0.14)	0.00 (0.21)	0.48 ** (0.16)
Age of parent (years)	0.01 † (0.01)	0.00 (0.01)	0.03 *** (0.01)
Parent health quality	0.19 *** (0.05)	0.07 (0.06)	0.06 (0.05)
Single-parent family	0.03 (0.10)	-0.04 (0.13)	0.00 (0.13)
3+ children in household	-0.06 (0.08)	-0.24 † (0.13)	0.07 (0.12)
Family SES	0.15 † (0.08)	0.22 † (0.12)	0.43 *** (0.10)
Neighbourhood cohesion	0.07 *** (0.02)	0.09 ** (0.03)	0.18 *** (0.03)
<i>F</i>	4.63 ***	3.13 ***	14.23 ***
<i>R</i> ²	0.06	0.04	0.17
Adjusted <i>R</i> ²	0.05	0.03	0.16

Notes: Effects of independent variables expressed as unstandardized partial slopes and robust (standard error of b in parenthesis).

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.1$

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

3.0 Chapter 4 discussion and summary

The individual-level models presented in this chapter provided a preliminary assessment of parent, child and family factors associated with three parenting practices before examining their relationship to neighbourhood conditions and social support in the following two chapters. The parenting practices include *discipline effectiveness*, a measure of parents' strategies to manage children's behaviours; *parental investment*, a measure of parents' strategies to promote children's skills and expose them to community opportunities; and *parental involvement*, a measure of parents' participation in different aspects of the environment beyond the household. As was explained in chapter 2, these parenting practices approximate the behaviours studied by Furstenberg et al. (1999; Eccles et al. 1993; Baumrind 1989) and represent different points on a continuum of "traditional in-home family processes" to community-oriented "family management strategies" (Furstenberg et al. 1999, 81-82). In this section, I discuss a number of key findings concerning these parenting practices.

1. Family SES levels are most strongly associated with parents' family management practices

Contrary to evidence from other studies indicating that living in poverty is a strong predictor of poor parenting practices (e.g., Lempers et al. 1989; Conger et al. 1993a; 1993b), in this study, a family's access to socioeconomic resources was only

modestly associated with parenting practice scores. Nonetheless, this finding varied according to the type of parenting being considered. The results showed that, net of other individual variables, the strength of the association between family SES and parenting was greater for parental involvement than for either discipline effectiveness or parental investment. This finding lends some support to the hypothesis that parents' willingness or ability to become involved in activities and organizations in the community is greater when their levels of family socioeconomic resources are higher. Furstenberg et al. (1999, 126) reported similarly that parents with the highest education and income levels were the most likely to also report being involved in their communities. The more modest association between SES and the other parenting variables presented in this chapter corresponds to findings from the national NLSCY sample in which SES was not found to be a strong predictor of family process modes of parenting, and suggests that "positive and negative parenting practices are apparent in all types of families" (e.g., Chao and Willms 2002, 164; Miller, Jenkins and Keating 2002).

2. Parenting practices were differently associated to different child outcomes

Parenting practices were differently associated with the two child outcomes considered in this study: verbal ability and problem behaviour. Regression models tested for the relative influence of all parenting practices and individual socioeconomic and demographic characteristics on each child outcome. Results indicated that children's verbal ability scores were higher when parents also reported high levels of parental investment and involvement; however, parents' discipline effectiveness did not

contribute significantly to variation in children's verbal ability. These findings coincide with Furstenberg et al. (1999, 113) who reported that, net of other variables, parents' family management practices mattered more for adolescents' academic competence than family processes such as discipline effectiveness. The connection between parental involvement and children's verbal ability also corresponds to propositions from research on the effect of parents' social capital (i.e., resources realized through relationships with others) on children's educational outcomes. Thus, Coleman and Hoffer (1987) and numerous other researchers (Furstenberg and Hughes 1995; Sampson, Morenoff and Earls 1999) have made the case that parents with high levels of social capital are more likely to also raise children who fare positively with respect to educational attainment.

In contrast to the findings for verbal abilities, parents discipline effectiveness mattered most for variation in children's problem behaviours in the analyses presented in this chapter. This result is not unexpected given the large body of research linking positive child behaviour to parents' use of firm, rational and responsive parenting strategies (e.g., Baumrind 1978). However, the results also showed that, irrespective of the other variables in the model, parental involvement was *positively* associated with children's problem behaviours. Thus, parents of children with the greatest degree of problem behaviours also reported the highest levels of involvement in the community. Although their result was not significant, Furstenberg et al. (1999, 113) also reported that greater adolescent problem behaviours were associated with more developed parental social networks. The finding suggests that searching for solutions for children's problem behaviours may be one impetus for parents to connect to the community

beyond the household, and this would be consistent regardless of the level social and economic resources available to the family.

3. Parenting only partially mediated the relationship between family SES and children's outcomes

In line with Chao and Willms (2002), results in this chapter indicated that parenting only partially mediated the relationship between SES and child outcomes. The child verbal ability score was significantly associated with family SES, such that children in families with lower SES also tended to have lower verbal ability scores. Parental involvement and parental investment together served to mediate or explain part of the relationship between SES and verbal ability, but this effect was moderate (i.e., a 14% reduction in the SES coefficient). This finding suggests that parenting may not be the most important factor explaining the relationship between family SES and child outcomes. As Chao and Willms (2002) contend, the partial mediation brings into question the notion that poverty affects children *primarily* because of its role in diminishing parents ability to parent effectively (e.g., Lempers et al. 1989; Conger et al. 1993a; 1993b; McLeod, Kruttschnitt and Dornfeld 1994; McLoyd 1990). Instead, to a great degree the results here suggest that parenting and SES have separate influences on child verbal abilities.

4. Social support was positively associated with all parenting practices

Numerous studies have documented the positive relationship between parents' social support and traditional family process modes of parenting such as nurturing and

consistency (Ceballo and McLoyd 2003; Crnic, Greenberg, Robinson and Ragozin 1984; Hashima and Amato 1994; Jarrett 1995; McLoyd 1990; Taylor and Roberts 1995); however, the results in this chapter also showed that greater perceived social support was associated with greater reported use of family management strategies such as parental investment and parental involvement. In addition, the results lend some support to the finding that social support may serve as a buffer against economic stress experienced within families (Benin and Keith 1995; McLoyd 1990), since the addition of social support served to mediate the relationship between family SES and discipline effectiveness and parental investment.

5. Parents' perceptions of the local environment were associated with their parenting practices

The individual-level results presented in this chapter indicated that after controlling for family-level factors, higher neighbourhood social cohesion scores—or parents' perceptions of the willingness of neighbours to assist or intervene when problems arose—were associated with higher scores for each of the parenting practices. This finding corresponds with evidence from ethnographic studies of parents indicating that their views of the immediate neighbourhood environment shape their parenting decisions (Eccles et al. 1993; Furstenberg et al. 1999; Jarrett 1995; Stack 1974).

Overall, the results presented in this chapter demonstrated that parenting practices were positively associated with children's outcomes, but were also influenced

by individual or family characteristics including socioeconomic resources, access to social support and perceptions of neighbourhood environments. However, there were differences in the strength of these relationships across the different parenting practices. The analyses in the following two chapters extend the examination more specifically to neighbourhood influences on parenting.

Chapter 5

Neighbourhood factors associated with parenting practices

1.0 Introduction

In the previous chapter, results based on individual-level analyses indicated that the factors specific to parents, children and families explained some variation in parenting practices and the association that these practices had with children's outcomes. The results also provided preliminary evidence that parents' views of the conditions in their local neighbourhoods were associated with variation in their parenting practices over and above any effect of individual characteristics.

In this chapter the focus shifts to the potential influence of the neighbourhood context on parenting and child outcomes. As discussed in Chapter 2, although several researchers have argued that parents play a pivotal role in shaping the outside context for their children, the relationship between parenting and the neighbourhood context has been relatively understudied (Furstenberg et al. 1999; Klebanov et al. 1997; Jarrett 1995; Jarrett 1999; Leventhal and Brooks-Gunn 2000; Simons et al. 2002). Moreover, in Chapter 2 I proposed that the link between parenting, child outcomes and external contexts could be viewed from within a social disorganization framework. Specifically, this approach could provide an improved account of the interactions between parents' individual circumstances and neighbourhood structural and social processes as they

influence parenting strategies and ultimately children's outcomes. In this chapter, I begin to investigate these relationships.

The chapter has two broad aims. The first is to examine whether structural characteristics of neighbourhoods are associated with parenting practices and whether neighbourhood social processes influence that relationship, and the second is to examine how the relationship between parenting and child outcomes is influenced by neighbourhood conditions. An overarching issue investigated in this chapter and the next is whether the predictive value of neighbourhood conditions holds over and above individual-level characteristics, or specifically, the extent to which differences in parenting practices and/or the relationship between parenting and child outcomes are attributable to individual circumstances of families or some neighbourhood quality.

1.1 Chapter organization and summary of hypotheses

In this chapter I investigate whether and how neighbourhood structural characteristics (i.e., concentrated disadvantage, residential stability and ethnic heterogeneity) and neighbourhood social processes (i.e., social cohesion) are associated with parenting practices and child outcomes among the NLSCY sample of five- and six-year-olds and their parents in Winnipeg neighbourhoods. The results are presented in two sections: the first is concerned with the prediction of parenting practices and how neighbourhood factors are related, and the second with the prediction of the child outcomes, but specifically whether parenting is associated with child outcomes

differently, in different neighbourhood contexts. Within these sections, I consider a number of specific hypotheses derived from the literature presented in Chapter 2, including:

Hypothesis 1: Structural features of neighbourhoods (i.e., concentrated disadvantage, residential stability, and immigrant concentration) are significant negative predictors of (H1a) positive parenting practices at the aggregate neighbourhood-level, and (H1b) parenting practices at the individual-level, net of relevant individual-level socio-demographic variables.

Hypothesis 2: Higher levels of neighbourhood social cohesion are associated with positive parenting practices (H2a) at the aggregate neighbourhood-level and (H2b) at the individual-level, net of relevant individual-level socio-demographic variables.

Hypothesis 3: Neighbourhood social cohesion partially mediates the association between the structural features of neighbourhoods and parenting practices, net of relevant individual-level socio-demographic variables.

Hypothesis 4: (H4a) Child verbal ability and behavioural problem outcomes vary significantly across neighbourhoods. (H4b) The association between parenting practices and child verbal ability and behavioural problem outcomes varies significantly across neighbourhoods.

Hypothesis 5: (H5a) The positive relationship between parenting and child outcomes will be diminished in neighbourhoods characterized by greater structural

disadvantage. (H5b) However, this effect will be mediated by neighbourhood social cohesion.

2.0 Results

2.1 *Neighbourhoods and parenting practices*

2.1.1 Aggregate-level results

The first set of analyses investigated the aggregate-level association between neighbourhood social composition variables and average parenting practice scores. Table 5.1 presents models for the three parenting practices presented in Chapter 4—discipline effectiveness, parental investment and parental involvement. For each parenting practice, model 1 included factor scores measuring socioeconomic disadvantage, high residential mobility (or population turnover) and ethnic heterogeneity. Model 1 results provide partial support for hypothesis 1a; however, results vary across parenting practices. An increase of one-point in concentrated socioeconomic disadvantage was significantly associated with a 0.2 point decrease in the average level of discipline effectiveness in the neighbourhood ($p \leq .05$). Although the direction of the association to discipline effectiveness was the same for residential mobility and ethnic heterogeneity scores, neither reached significance.

Model 1 results for parental investment indicated that only heterogeneity was significantly associated. A one-point increase in heterogeneity was associated with a 0.3 point drop in the average neighbourhood investment score ($p \leq 0.001$). In contrast,

parental involvement was significantly and negatively associated with all of the neighbourhood social composition variables. Thus, higher levels of each of the neighbourhood social composition variables were significantly associated with lower levels of the average neighbourhood involvement score.

Model 2 investigated the association between neighbourhood social cohesion and average parenting scores, exclusive of the other independent variables. In support of hypothesis 2a, results indicated that, at the aggregate-level, the average neighbourhood social cohesion score was significantly and positively associated with each of the parenting practices.

In the third model, the mediating effect of neighbourhood cohesion on neighbourhood structural features was examined. The results provided some support for hypothesis 3, indicating that the addition of social cohesion partially mediated the effect of neighbourhood socioeconomic disadvantage on average discipline effectiveness scores. In this case, the negative association between neighbourhood disadvantage and discipline effectiveness scores was reduced. The coefficient for disadvantage increased by 53% (but was also rendered insignificant) from model 1 to model 2 ($b = -0.15$ ($p \leq .05$) and $b = -0.07$ ($p > 0.1$), respectively). The negative influence of the coefficients for residential mobility and ethnic heterogeneity were also reduced with the addition of the social cohesion score; however, these variables were not significant in model 1.

Table 5.1: Neighbourhood-level OLS regression models of parenting characteristics on neighbourhood characteristics

	Discipline effectiveness			Parental investment			Parental involvement		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Intercept	7.09 *** (0.07)	5.11 *** (0.53)	5.11 *** (0.88)	6.95 *** (0.08)	5.55 *** (0.66)	6.51 *** (0.98)	6.00 *** (0.07)	3.28 *** (0.66)	5.30 *** (0.85)
Socioeconomic disadvantage ^a	-0.15 * (0.07)		-0.07 (0.08)	-0.09 (0.08)		-0.07 (0.09)	-0.28 *** (0.07)		-0.25 ** (0.08)
Residential mobility ^a	-0.11 (0.07)		0.06 (0.10)	-0.07 (0.08)		-0.03 (0.11)	-0.19 ** (0.07)		-0.13 (0.10)
Racial/ethnic heterogeneity ^a	-0.13 † (0.07)		-0.05 (0.08)	-0.28 *** (0.08)		-0.27 ** (0.09)	-0.34 *** (0.07)		-0.31 *** (0.07)
Neighbourhood social cohesion ^b		0.31 *** (0.08)	0.31 * (0.14)		0.22 * (0.10)	0.07 (0.16)		0.43 *** (0.10)	0.11 (0.13)
F	3.11 *	14.05 ***	3.92 **	5.27 ***	4.56 *	3.90 **	16.92 ***	17.15 ***	12.73 ***
R ²	0.23	0.29	0.34	0.33	0.12	0.33	0.61	0.32	0.62
Adjusted R ²	0.15	0.27	0.25	0.27	0.09	0.25	0.58	0.50	0.57

Note: Effects of independent variables expressed as unstandardized partial slopes, (standard error of b in parentheses).

^a Factor scores based on Census data.

^b Average neighbourhood cohesion scores based on NLSCY data aggregated to the neighbourhood-level.

*** p ≤ 0.001; ** p ≤ 0.01; * p ≤ 0.05; † p ≤ 0.1

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

With respect to parental involvement, the addition of social cohesion in model 3 reduced the negative influence of residential mobility which was also rendered non-significant. However, the coefficients for socioeconomic disadvantage and ethnic heterogeneity were only modestly diminished with the addition of social cohesion—both having a less negative association with average parental involvement levels.

Taken together, the results in Table 5.1 suggest that social cohesion is associated with the variation in parenting practices at the aggregate level, and partially mediates the negative association of neighbourhood social structural features such as concentrated socioeconomic disadvantage, high residential mobility and high ethnic heterogeneity. A multilevel analysis strategy was employed to investigate the extent to which neighbourhood features influence individual parenting practices over and above relevant individual-level parent, child and family characteristics (Tables 5.2 and 5.3).

2.1.2 Multilevel analyses: Proportion of variance in parenting explained by neighbourhoods

As a first step, I estimated the between- and within-neighbourhood variability of parenting practices by estimating unconditional random intercept (“empty”) models for each parenting variable (Table 5.2). An absence of any neighbourhood clustering of parenting practices would suggest that neighbourhoods are irrelevant to understanding differences in parenting practices; rather these differences would be attributable to characteristics unique to the parent or family. In the empty models, the variance in each parenting variable was decomposed into between- and within-neighbourhood components.

The intraclass correlation coefficient (ICC) represents the proportion of the total variance in the dependent variable that exists between neighbourhoods with values ranging from 0 to 1 and larger values indicating a greater relative impact of neighbourhood context (Raudenbush and Bryk 2002, 71). The null model is a one-way analysis of variance of random effects containing the dependent variable only, the ICC is calculated by dividing the neighbourhood-level variance (τ_{00}) by the total of neighbourhood-level (τ_{00}) and individual-level (σ^2) variance, $ICC = \tau_{00} / (\tau_{00} + \sigma^2)$.

Table 5.2: Linear multilevel empty models of parenting practices, Winnipeg 2001

	Discipline effectiveness	Parental investment	Parental involvement
Intercept	7.05 *** (0.07)	6.91 *** (0.08)	5.96 *** (0.10)
Variance components			
Neighbourhood-level, τ_{00}	0.0723 ***	0.1297 ***	0.2281 ***
Individual-level, σ^2	1.3243	1.8709	1.7852
ICC	0.05	0.07	0.11

Notes: Intercept represents average neighbourhood mean parenting scores and is expressed as unstandardized partial slope and (standard error). ICC represents Intraclass Correlation Coefficient, $ICC = \tau_{00} / (\tau_{00} + \sigma^2)$.

*** $p \leq 0.001$

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg.

Empty model results showed that the neighbourhood-level variation (τ_{00}) was statistically significant ($p \leq 0.001$) for each parenting practice. The calculated ICC values indicated that about 5% of the variation in discipline effectiveness, 7% of parental investment and 11% of parental involvement were attributable to the neighbourhood-level. These results suggested that parents of the same Winnipeg neighbourhoods were moderately more similar to each other in terms of their parenting

practices than were residents drawn from different neighbourhoods. In addition, the results suggested that neighbourhoods accounted for a slightly greater proportion of the explained variance for parenting practices oriented toward managing the environment beyond the household for children (e.g., parental involvement and investment), than for traditional parent-child dyadic parenting practices (e.g., discipline effectiveness). This division is consistent with Furstenberg et al. (1999, 152).

In general, the ICC values based on the NLSCY Winnipeg data are modest but not unexpected. Furstenberg et al (1999, 152) reported that 1% to 15% of the variance in parenting variables could be explained by the neighbourhood rather than individual-level conditions in the Philadelphia sample. Similarly, in their review of neighbourhood effects research, Leventhal and Brooks-Gunn (2000) found that neighbourhoods generally accounted for about 5-10% of the variation in child outcomes, after controlling for a variety of family level variables. In part this may be due to the complexity of the possible relationships between contexts and individuals.

It is noteworthy, however, that seemingly low ICC results may nonetheless be associated with important differences between people residing in different neighbourhoods. Along these lines, Duncan and Raudenbush (2001; Sampson 2001, 17) have cautioned against dismissing the potential influence of neighbourhoods based on low intraclass correlation coefficients. Instead, they demonstrate that low ICCs are not incompatible with large “effect sizes that program evaluators commonly view as moderate or even large” (Duncan and Raudenbush 2001, 127).

2.1.3 Multilevel analyses of parenting practices predicted by individual and neighbourhood variables

As a next step in the analysis, multilevel linear regression models explaining parenting practices were computed for discipline effectiveness, parental investment and parental involvement (Table 5.3). Model 1 for each parenting practice includes only relevant individual-level independent variables; while neighbourhood-level variables are included in the remaining models. In the interest of parsimony, the individual-level variables were limited to those that made significant contributions to the model, and consequently differed for each parenting practice.

To begin with, a comparison of model 1 results to the empty model in Table 5.2 indicated that relatively large proportions of the between-neighbourhood variation in discipline effectiveness and parental involvement scores were explained by the individual characteristics of respondents; however, this was not the case for parental investment. Thus, the between-neighbourhood variance (τ_{00}) of discipline effectiveness was reduced from 0.0723 in the empty model to 0.0370 in model 1 after adding the relevant individual-level variables. In other words, about 49% of the variation of average discipline-effectiveness scores between neighbourhoods was explained by the individual-level variables family SES and parental health quality. Results for parental involvement showed a similar reduction (43%) in between-neighbourhood variance from the empty model ($\tau_{00} = 0.2281$) to model 1 ($\tau_{00} = 0.1311$). In contrast, there was a smaller reduction (9%) in the neighbourhood-level variance for parental investment after adding relevant individual-level variables ($\tau_{00} = 0.1297$ and $\tau_{00} = 0.1183$, respectively).

Before controlling for the influence of individual-level variables in model 2, I examined the effect of the three Census-based neighbourhood variables measuring socioeconomic disadvantage, residential mobility and ethnic heterogeneity. The results show that, alone, the three structural variables explain relatively large proportions of the between-variation in each parenting score. The average neighbourhood discipline effectiveness score was about 7.08 ($p \leq 0.001$) and this average varies significantly across neighbourhoods ($\tau_{00} > 0$). Only socioeconomic disadvantage and residential mobility significantly predict neighbourhood variation in discipline effectiveness. As the coefficients for these variables decrease there is an increase in the coefficient for discipline effectiveness. Together, disadvantage and mobility explained about 58% of the between-neighbourhood variance from the empty model in Table 5.2 ($\tau_{00} = 0.0723$, $p \leq 0.001$) to model 2 in Table 5.3 ($\tau_{00} = 0.0298$, $p \leq 0.05$).

The average neighbourhood parental investment score in model 2 is 6.94 ($p \leq 0.001$) and also varies significantly across neighbourhoods. In this case, only the ethnic heterogeneity variable significantly predicts neighbourhood variation in investment. A lower level of heterogeneity is associated with greater parental investment, and the addition of heterogeneity to the model explains about 33% of the between neighbourhood variance of parental investment reported in the empty model.

Finally, an increase in the parental involvement score in model 2 is associated with decreases in the coefficients for all three structural variables; and the average score, 5.99 ($p \leq 0.001$), does not vary significantly across neighbourhoods ($\tau_{00} > 0$, $p > 0.1$). This implies that a very large proportion of the between neighbourhood variance in

parental involvement, estimated in the empty model, was captured by the three neighbourhood structural variables. Thus, as a result of controlling for the neighbourhood-level variables, τ_{00} was reduced by 93%, from 0.2281 ($p \leq 0.001$) in the empty model for parental involvement (Table 5.2) to 0.0156 ($p > 0.1$) in Table 5.3.

Model 3 in Table 5.3 includes the Census-based neighbourhood variables as well as the individual controls. This model addressed hypothesis 1b that neighbourhood social composition variables would explain variation in parenting scores across neighbourhoods above and beyond relevant individual-level characteristics. The hypothesis was only partially supported by the model 3 results. The three neighbourhood structural variables were, with one exception, negatively associated with all parenting practices; however, contrary to the expectations of hypothesis 1b, the associations between the neighbourhood variables and parenting practices did not always reach significance.

First, net of the individual-level variables, only socioeconomic disadvantage and neighbourhood mobility were significantly associated with neighbourhood-level variation in the average discipline effectiveness score. Thus, as the socioeconomic disadvantage and residential mobility coefficients increased, the average discipline effectiveness score in the neighbourhood decreased (0.11 points for each one-point increase in both disadvantage and mobility). Second, ethnic heterogeneity was the only significant predictor of parental investment, above and beyond the other variables. As the neighbourhood-level heterogeneity coefficient increased, the average level of parental investment decreased (0.24 points for each one-point increase in heterogeneity).

In addition, contrary to the other relationships, neighbourhood socioeconomic disadvantage was slightly positively associated with average neighbourhood parental investment scores; however, this relationship was not significant ($p > 0.1$). Finally, increases in each of the neighbourhood variable coefficients were associated with decreases in average parental involvement scores (0.34, 0.14 and 0.13 points for one-point increase in heterogeneity, mobility and disadvantage, respectively).

In order to investigate the proportion of reduction in variance after adding the neighbourhood structural variables, τ_{00} estimates from model 3 were compared to those in the empty model (Table 5.2) for each parenting practice. The combination of individual and neighbourhood variables in model 3 explained about 72% of the between-neighbourhood variation in average discipline effectiveness from the empty model in Table 5.2. This was an increase of about 14% from the explained variance with neighbourhood factors alone. Model 3 factors explained about 31% of the between-neighbourhood variation in average parental investment, unchanged from the percentage explained with neighbourhood factors alone. And finally, model 3 factors explained a majority (94%) of the between neighbourhood variation in average parental involvement, also unchanged from the percentage explained after accounting for neighbourhood factors alone.

Model 4 investigated the association between neighbourhood social cohesion and variation in parenting practices, net of relevant individual characteristics. Results provided partial support for hypothesis 2b given that the average neighbourhood cohesion score was positively associated with all parenting scores; however, the

coefficients only reached significance for discipline effectiveness (0.21, $p \leq 0.01$) and parental involvement (0.33, $p \leq 0.001$). Looking at the proportional reduction in error variance from the empty models for these two parenting practices, neighbourhood social cohesion alone explained about 74% of the between-neighbourhood variance in discipline effectiveness scores after controlling for the relevant individual-level variables, and about 67% of the variance in parental involvement. Thus, with respect to discipline effectiveness, social cohesion accounted for as much of the between-neighbourhood variance as the combined neighbourhood structural variables.

Table 5.3: Linear multilevel models of parenting practices, Winnipeg 2001

	Discipline effectiveness					Parental investment				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	7.05 *** (0.06)	7.08 *** (0.05)	7.08 *** (0.05)	7.07 *** (0.05)	7.08 *** (0.05)	7.02 *** (0.09)	6.94 *** (0.07)	7.05 *** (0.07)	7.03 *** (0.09)	7.05 *** (0.07)
<i>Neighbourhood-level variables</i>										
Socioeconomic disadvantage ^a		-0.16 ** (0.05)	-0.11 * (0.05)		-0.08 (0.06)		-0.09 (0.07)	0.02 (0.08)		0.03 (0.08)
Residential mobility ^a		-0.13 * (0.05)	-0.11 * (0.04)		-0.05 (0.06)		-0.07 (0.06)	-0.06 (0.06)		-0.03 (0.07)
Racial/ethnic heterogeneity ^a		-0.09 (0.06)	-0.09 (0.06)		-0.07 (0.06)		-0.26 ** (0.08)	-0.24 ** (0.08)		-0.23 ** (0.08)
Social cohesion ^b				0.21 ** (0.08)	0.12 (0.10)				0.12 (0.13)	0.05 (0.13)
<i>Individual-level variables</i>										
<i>Parent age (years)</i>										
Parental health quality	0.16 ** (0.05)		0.14 ** (0.05)	0.14 ** (0.05)	0.14 ** (0.05)					
Three + children in the house						-0.35 ** (0.11)		-0.35 ** (0.11)	-0.34 ** (0.11)	-0.35 ** (0.11)
Family SES	0.19 * (0.08)		0.13 (0.10)	0.16 † (0.08)	0.12 (0.10)	0.32 ** (0.12)		0.30 * (0.13)	0.29 * (0.12)	0.30 * (0.13)
<i>Variance components</i>										
Neighbourhood-level, τ_{00}	0.0370 *	0.0298 *	0.0204	0.0189	0.0224	0.1183 ***	0.0872 **	0.0893 **	0.1178 ***	0.0938 **
Individual-level, σ^2	1.3225	1.3266	1.3221	1.3208	1.3210	1.8214	1.8647	1.8163	1.8206	1.8171

Notes: Standard errors for coefficients are in parentheses. Individual- and neighbourhood-level predictors are grand-mean centred.

^a Factor scores based on 2001 Census data.

^b Average neighbourhood cohesion scores based on NLSY data aggregated to the neighbourhood-level.

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.1$

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

Table 5.3: *Continued*

	Parental involvement				
	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	5.41 *** (0.15)	5.99 ***	5.45 *** (0.12)	5.41 *** (0.13)	5.45 *** (0.13)
<i>Neighbourhood-level variables</i>					
Socioeconomic disadvantage ^a		-0.30 ***	-0.13 * (0.07)		-0.09 (0.07)
Residential mobility ^a		-0.16 **	-0.14 ** (0.05)		-0.06 (0.09)
Racial/ethnic heterogeneity ^a		-0.36 ***	-0.34 *** (0.04)		-0.30 *** (0.05)
Social cohesion ^b				0.33 *** (0.09)	0.17 (0.14)
<i>Individual-level variables</i>					
Mother	0.63 *** (0.15)		0.62 *** (0.14)	0.65 *** (0.15)	0.62 *** (0.15)
Parent age (years)	0.03 *** (0.01)		0.03 *** (0.01)	0.03 *** (0.01)	0.03 *** (0.01)
Parental health quality	0.09 * (0.05)		0.09 * (0.05)	0.08 † (0.05)	0.09 * (0.05)
Three + children in the house					
Family SES	0.47 *** (0.10)		0.38 ** (0.11)	0.43 *** (0.10)	0.38 *** (0.11)
<i>Variance components</i>					
Neighbourhood-level, τ_{00}	0.1311 ***	0.0156	0.0138	0.0762 **	0.0102
Individual-level, σ^2	1.5732	1.78	1.5681	1.5704	1.5686

Notes: Standard errors for coefficients are in parentheses. Individual- and neighbourhood-level predictors are grand-mean centred.

^a Factor scores based on 2001 Census data.

^b Average neighbourhood cohesion scores based on NLSCY data aggregated to the neighbourhood-level.

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.1$

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

Finally, model 5 assessed the extent to which neighbourhood social cohesion mediated the association between the neighbourhood structural features and each parenting practice. The addition of neighbourhood social cohesion reduced the magnitude and significance of neighbourhood structure coefficients for both discipline effectiveness and parental involvement. The results for these parenting practices support hypothesis 3 suggesting that the association between neighbourhood structural conditions and parenting are partially mediated by neighbourhood social processes, or specifically by the extent of social cohesion in the neighbourhood.

2.2 Neighbourhoods and the association between parenting and children's outcomes

In this section, the focus shifts to children's verbal abilities and behavioural problems as outcomes. To address hypotheses 4 and 5, I conducted a series of multilevel analyses to investigate first, neighbourhood variation in child outcomes, and second, neighbourhood variation in the relationship between parenting and children's outcomes. Results are presented separately for verbal ability and behavioural problems, respectively.

2.2.1 Multilevel analysis of children's verbal ability scores

Table 5.4 shows models predicting children's verbal ability (PPVT-R) scores. This variable was normally distributed permitting use of linear models that assume normal distribution of errors. In support of hypothesis 4a, results from the empty model

(model 1) indicated that the between-neighbourhood variance was statistically significant ($\tau_{00} = 34.3$, $p \leq 0.001$). The intraclass correlation coefficient calculated from the variance components was 0.125, indicating that about 13% of the variation in children's reading scores was between rather than within neighbourhoods. While the majority of variance is at the individual-level, this ICC figure was high relative to results from Furstenberg et al. (1999, 152) who reported that neighbourhoods accounted for 7% of the variation in adolescents' academic competence scores in Philadelphia.

Model 2 tested for the presence of neighbourhood variation in the relationship between parenting practices and children's verbal abilities. This conditional model included only individual-level parenting variables and relevant socio-demographic controls, and consequently provided an indication of the total variation in the individual-level intercept (average reading ability score) and slopes across neighbourhoods. Initial testing (results not shown) indicated that only the parental involvement and parental investment variables contributed significantly to variation in children's verbal ability scores. Therefore, discipline effectiveness was excluded from the analysis in model 2 and subsequent models. The average verbal ability score in model 2 was about 98, and this figure varied significantly from one neighbourhood to the next ($\tau_{00} = 9.93$, $p \leq 0.01$).

With the introduction of the individual-level variables in this model, there was a 78% reduction from the empty model in the estimated variation in the average verbal ability score between neighbourhoods ($\tau_{00} = 34.29$ and $\tau_{00} = 9.93$, respectively). The estimate of the within-neighbourhood variance of verbal ability, σ^2 , decreased by 11% from the estimate in the empty model. Based on these model 2 variance estimates, the

intraclass correlation coefficient decreased to 4.5%. Thus, after controlling for individual-level socio-demographic and family variables, a reduced amount of the variation in children's verbal ability scores was accounted for at the neighbourhood-level.

Table 5.4: Linear multilevel models of children's verbal ability (PPVT-R) scores, Winnipeg 2001

	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	99.01 *** (1.17)	98.01 *** (2.47)	97.89 *** (2.49)	97.91 *** (2.43)	97.87 *** (2.45)
Boy		-2.33 † (1.33)	-2.18 † (1.34)	-2.14 (1.34)	-2.15 (1.35)
Single parent		-2.68 * (1.05)	-2.93 ** (1.06)	-2.77 * (1.06)	-2.77 * (1.07)
Mother		5.24 * (2.23)	5.24 * (2.25)	5.13 * (2.20)	5.14 * (2.20)
3+ children in household		-5.34 *** (1.21)	-5.48 *** (1.21)	-5.56 *** (1.23)	-5.56 *** (1.23)
Family SES		6.63 *** (0.88)	6.74 *** (0.90)	6.75 *** (0.90)	6.75 *** (0.91)
Parental involvement		1.28 * (0.61)	1.40 * (0.63)	1.52 * (0.64)	1.55 * (0.65)
Neighbourhood socioeconomic disadvantage ^a				-0.89 * (0.48)	-0.81 (0.50)
Neighbourhood social cohesion ^b					0.36 (0.74)
Parental investment		1.28 ** (0.44)	1.23 * (0.46)	1.04 * (0.42)	1.01 * (0.43)
Neighbourhood socioeconomic disadvantage ^a				0.49 † (0.32)	0.48 † (0.28)
Neighbourhood ethnic heterogeneity ^a				0.90 * (0.39)	0.89 * (0.39)
Neighbourhood social cohesion ^b					-0.16 (0.53)
<i>Variance components</i>					
Neighbourhood-level, τ_{00}	34.29 ***	9.93 **	8.24 *	7.71 *	7.83 *
Parental involvement			5.46 **	5.48 **	5.72 **
Parental investment			0.39 †	0.11	0.14
Individual-level, σ^2	239.94	212.96	203.49	203.33	203.62

Notes: Standard errors for coefficients are in parentheses. Individual-level SES and parenting practices are grand mean centred, other individual level variables are left in original metric (0, 1). Neighbourhood-level predictors are grand-mean centred.

^a Factor scores based on 2001 Census data.

^b Average neighbourhood cohesion scores based on NLSCY data aggregated to the neighbourhood-level.

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.1$

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

The socio-demographic controls were strongly associated with the verbal ability score. In particular, net of the other variables, a one-point increase in family SES over the average level of SES for families in the sample was associated with a 6.6 point

increase in the verbal ability score. Children in families with three or more children in the household had a 5.3-point lower verbal ability score than children in families with fewer children. Additionally, the results indicated that when the reporting parent (PMK) was a mother, children's verbal ability scores were 5.2 points higher than if the parent was a father. When the parent was single, children's scores were 2.7 points lower than for those in two-parent families; and boys scored 2.3 points lower than girls ($p \leq 0.1$).

After accounting for the socio-demographic controls, parental investment and parental involvement contributed significantly to variation in verbal ability scores. Each additional point in these parenting scores increased children's verbal ability scores by 1.28 points.

In model 3, to test whether these parenting scores varied significantly across neighbourhoods (hypothesis 4b), the regression slopes for the three parenting practices were permitted to vary across neighbourhoods. In this model, the variance components for each parenting practice represented the total amount of variation in these practices across neighbourhoods. Only the variance component for the parental involvement score differed significantly from zero, indicating that it varied significantly across neighbourhoods; however, the variance component for parental investment nearly reached significance ($p \leq 0.1$). In the model, the coefficients for parenting practices represent the average effect of each these practices across neighbourhoods and the average is weighted by the amount of information provided by each neighbourhood (Teachman and Crowder 2002). In this case, the average effect for parental involvement

increased slightly, but decreased for parental investment. Both coefficients remained statistically significant.

To investigate whether particular features of neighbourhoods were associated with the observed neighbourhood-variation in parenting practices contextual variables were added in model 4. Specifically, this model tested hypothesis 5a that the positive association between parenting and children's outcomes would be lower in neighbourhoods with greater structural disadvantage. This effect is referred to as a 'cross-level interaction' between the individual-level influence of parenting on children's outcomes and the neighbourhood-level structural variables. If a significant cross-level interaction exists, the steepness of the slope (i.e., parenting – child outcome slope) will vary across neighbourhoods and can be explained by particular neighbourhood features (Raudenbush and Bryk 2002; Snijders and Bosker 1999, 67).

Initial analyses (results not shown) indicated that not all of the neighbourhood structural variables were significantly associated with the parenting practice slopes. Consequently in model 4, parental involvement is modelled as a function of neighbourhood socioeconomic disadvantage, while parental investment is modelled as a function of neighbourhood socioeconomic disadvantage and ethnic heterogeneity.

There was a significant and negative cross-level interaction between the parental involvement slope and neighbourhood socioeconomic disadvantage ($b = -0.89$, $p \leq 0.05$). In this case, as the neighbourhood socioeconomic disadvantage coefficient increased, the positive relationship between parental involvement and child verbal ability scores decreased. Put another way, the same level of parental involvement was

less positively associated with children's verbal ability scores in socioeconomically disadvantaged neighbourhoods than in other neighbourhoods.

To illustrate this cross-level interaction between parental involvement and neighbourhood socioeconomic disadvantage, figure 5.1 graphs the steepness of the parental involvement slope for two typical neighbourhoods with high- and low-levels of socioeconomic disadvantage. The figure shows a strong positive association between parental involvement and child verbal ability where neighbourhood socioeconomic disadvantage was low (represented by those falling at the 25th percentile of neighbourhood socioeconomic disadvantage), but less strong where disadvantage was high (represented by those falling at the 75th percentile of neighbourhood socioeconomic disadvantage). This finding is consistent with the hypothesis that the influence of parental involvement on child verbal ability varies by the degree of structural disadvantage in the local neighbourhood.

Figure 5.1: Cross-level interaction between neighbourhood socioeconomic disadvantage and the slope of children's reading ability on parental involvement, Winnipeg 2000-01

Notes: Neighbourhood SES disadvantage and parental involvement are grand-mean centred. Low SES represents neighbourhoods at the 25th percentile of neighbourhood disadvantage and high SES represents those at the 75th percentile.
Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

With respect to parental investment, neighbourhood ethnic heterogeneity and socioeconomic disadvantage were both positively associated with the slope; however, disadvantage did not reach significance ($p \leq 0.1$). The positive heterogeneity coefficient indicated that in neighbourhoods with the highest level of ethnic diversity, the influence of parental investment on child verbal ability scores was stronger than in other neighbourhoods. This cross-level interaction is illustrated in figure 5.2 where the relationship between investment and verbal ability was much stronger in neighbourhoods where ethnic heterogeneity was highest (e.g., represented by neighbourhoods falling at the 75th percentile).

Figure 5.2: Cross-level interaction between neighbourhood heterogeneity and the slope of children's reading ability on parental investment, Winnipeg 2000-01

Notes: Neighbourhood heterogeneity and parental investment are grand-mean centred. Low heterogeneity represents neighbourhoods at the 25th percentile of neighbourhood heterogeneity and high heterogeneity represents those at the 75th percentile.

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

In model 5, the neighbourhood social cohesion variable is added to the slopes associated with parental investment and parental involvement to investigate whether neighbourhood social cohesion mediates the relationship between neighbourhood structural variables and the parenting slopes (Hypothesis 5b). Results indicate that social cohesion does not significantly contribute to the explanation of either slope. In addition, separate tests (not shown) revealed that independent of the other neighbourhood effects, neighbourhood social cohesion does not significantly alter the relationship between parenting and verbal ability.

2.2.2 Multilevel analyses of children's behaviour problems scores

Table 5.5 shows a series of models associated with children's problem behaviour scores.¹⁹ In the empty model, the between-neighbourhood variance is small and nearly statistically significant ($\tau_{00} = 0.46$, $p \leq 0.1$). Based on the individual and neighbourhood-level variance components, the intraclass correlation coefficient was 3%, which is low but similar to the results for adolescent behaviour problems (4%) reported in Furstenberg et al. (1999, 152); and results for children's indirect aggression (3%) and physical aggression (5%) based on the national sample of the NLSCY (Foster et al. 2001). However, the high p-value ($p \leq 0.1$) for the neighbourhood-level variance component in this study suggests that the problem behaviours of children do not vary significantly across the Winnipeg neighbourhoods in the sample and consequently hypothesis 4a is not supported. Nonetheless, since the magnitude of the ICC for behaviour coincides with findings from other studies in which neighbourhood-level variance components were significant, and additionally, that the statistical power with which to detect the intercept variation in this study is relatively limited, I proceeded to the next models to test the remaining hypotheses.

¹⁹ The child behavioural score is roughly normally distributed; however, additional tests were performed with a log-transformed version of this independent variable. The results were similar for both versions of the variable, and consequently for ease of interpretation, the non-transformed variable is presented here.

Table 5.5: Linear multilevel models of children's problem behaviour scores, Winnipeg 2001

	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	2.59 *** (0.06)	2.46 *** (0.05)	2.48 *** (0.05)	2.48 *** (0.05)	2.49 *** (0.05)
Parent age (years)		-0.02 * (0.01)	-0.02 * (0.01)	-0.02 * (0.01)	-0.02 * (0.01)
Single parent		0.44 *** (0.10)	0.42 *** (0.10)	0.44 *** (0.10)	0.44 *** (0.10)
Parent health quality		-0.17 *** (0.05)	-0.15 ** (0.05)	-0.16 *** (0.05)	-0.17 *** (0.05)
Discipline effectiveness		-0.40 *** (0.06)	-0.42 *** (0.06)	-0.43 *** (0.06)	-0.43 *** (0.06)
Neighbourhood ethnic heterogeneity ^a				0.08 † (0.05)	0.08 (0.05)
Neighbourhood social cohesion ^b					0.06 (0.07)
Parental involvement		0.14 *** (0.04)	0.14 *** (0.04)	0.13 ** (0.04)	0.12 *** (0.04)
Neighbourhood residential mobility ^a				0.05 * (0.02)	0.01 (0.04)
Neighbourhood social cohesion ^b					-0.11 (0.07)
<i>Variance components</i>					
Neighbourhood-level, τ_{00}	0.046 †	0.009	0.018	0.015	0.009
Discipline effectiveness			0.048 *	0.042 *	0.044 *
Parental involvement			0.015	0.013	0.010
Individual-level, σ^2	1.735	1.395	1.304	1.309	1.312

Notes: Standard errors for coefficients are in parentheses. Individual-level parent age, health quality and parenting practices are grand mean centred, other individual level variables are left in original metric (0, 1). Neighbourhood-level predictors are grand-mean centred.

^a Factor scores based on 2001 Census data.

^b Average neighbourhood cohesion scores based on NLSCY data aggregated to the neighbourhood-level.

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.1$

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

In addition to the relevant socio-demographic and family controls, model 2 included discipline effectiveness and parental involvement. Parental investment was excluded from the model since it did not contribute significantly to variation in behaviour problems, net of the other variables. The coefficients for parenting practices indicated that a one-point increase in the parental discipline coefficient was associated with a 0.4 point decrease in children's problem behaviour; and a one-point increase in

parental involvement was associated with a 0.14 point increase in problem behaviours. Together, the individual-level variables in this model reduced the estimated variance of children's behaviour problems across neighbourhoods by about 80% from its variance in the empty model. In addition, the neighbourhood-level variance component is rendered statistically non-significant.

In model 3, I tested for variation in the relationships between parenting practices and behavioural problems across neighbourhoods by permitting the two parenting slopes to vary randomly across neighbourhoods (hypothesis 4b). The hypothesis is only partially supported since there was a statistically significant amount of neighbourhood variation in the discipline effectiveness slope ($\tau_{00} = 0.48$, $p \leq 0.05$); however, the parental involvement variance component did not reach significance.

To further test for the relationship between neighbourhood structural characteristics and variation in the parenting-child behaviour relationships, the parenting slopes were modelled as a function of neighbourhood structural variables (Model 5). With respect to the discipline effectiveness slope, neither socioeconomic disadvantage nor residential mobility contributed to its variation across neighbourhoods, but the coefficient for ethnic heterogeneity was positive and nearly statistically significant ($p \leq 0.1$). The direction of the relationship indicated that at increasingly higher level of neighbourhood ethnic heterogeneity, the positive relationship between discipline effectiveness and children's behaviour problems decreased in strength. Thus, the same level of discipline effectiveness would have a less positive influence on children's behavioural problems in neighbourhoods with high heterogeneity than those with low

heterogeneity. However, the modest size of the heterogeneity coefficient and its lack of statistical significance suggested that hypothesis 5a was not supported in this case.

Although the between-neighbourhood variance component for the parental involvement score was not statistically significant, model 5 also tested for cross-level interactions between neighbourhood structural variables and this parenting practice. In such a case Snijders and Bosker (2001) have argued that it is more prudent to accept any significant interaction terms rather than reject them on the basis of the non-significant variance component results. This, they argue, is because the probability of the interaction result being in error is less than 0.05 (assuming $p < 0.05$), in contrast the probability of an error in the variance component result can be much higher (2002, 96).²⁰

The parental involvement slope was modelled as a function of neighbourhood mobility. The cross-level interaction for this relationship was significant and positive, indicating that as the level of neighbourhood residential mobility became greater, so did the strength of the relationship between parental involvement scores and children's behaviour problems scores. This relationship is illustrated in figure 5.3. The relationship between parental involvement and behaviour is positive (increasing) in both high and low mobility neighbourhoods; however, the slope is steeper in neighbourhoods with high mobility. The generally increasing slopes for both neighbourhood types suggests that parents who are more involved may do so because of their children's behaviour

²⁰ More specifically, Snijders and Bosker (2001) argue although the normal test for considering whether to test for cross-level interactions is a significant random slope for an individual-level variable (X), if there are theoretical reasons to consider an interaction between X and a neighbourhood-level variable (Z), this interaction ($X \times Z$) can be tested even if X does not have a significant random slope. The reason for this is that if there is a significant cross-level interaction, the test for this interaction has a higher power to detect significance than is the case for test for the random slope.

problems. And in addition, the steeper slope for neighbourhoods with greater levels of disadvantage suggests that involvement for parents who reside in neighbourhoods with greater residential movement may be less effective at stemming problem behaviours. However, the initially small proportion of the variance explained by neighbourhood residential mobility suggests that these findings must be considered with some caution.

Figure 5.3: Cross-level interaction between neighbourhood mobility and the slope of children's behaviour problems on parental involvement, Winnipeg 2000-01

Notes: Neighbourhood mobility and parental involvement are grand-mean centred. Low mobility represents neighbourhoods at the 25th percentile of neighbourhood mobility and high mobility represents those at the 75th percentile.

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

Finally, to investigate hypothesis 5b that social cohesion mediates the cross-level interactions between neighbourhood structural variables and parenting, the cohesion variable was added once again in model 5. In this case, the neighbourhood cohesion

variable has no significant influence on the already non-significant relationship between heterogeneity and discipline effectiveness. However, social cohesion significantly reduces the strength of the relationship between mobility and parental involvement. In separate tests (not shown) cohesion was also significantly associated with the involvement slope when entered alone. Its mediating role in model 5 reflects a similarity in the concepts being measured: social cohesion and residential mobility have a bivariate correlation of $\rho = 0.6$.

3.0 Chapter 5 discussion and summary

In this chapter I investigated whether and how neighbourhood contexts were associated with parenting practices and child outcomes among the sample of five-year-olds and their parents in Winnipeg neighbourhoods. The goals of these analyses were, first, to assess whether structural characteristics of neighbourhoods were associated with parenting practices and whether this relationship was mediated by neighbourhood social cohesion; and second, to understand how the relationship between parenting and child outcomes was influenced by these same neighbourhood conditions. A number of observations can be drawn from these analyses.

1. There is some evidence that average levels of each parenting practice vary across neighbourhoods

Consistent with multilevel studies of other types of individual behaviour (e.g., Duncan and Raudenbush 1999, 33; Foster et al. 2001; Coulton, Korbin and Su 1999; Oberwittler 2004); results in this chapter indicated that differences between individuals were more important in explaining parenting practices than differences between neighbourhoods. Nonetheless, for each parenting practice, the proportion of variance explained at the neighbourhood-level was both statistically significant and large relative to results from other studies on parents (e.g., Furstenberg et al. 1999, 152; Leventhal and Brooks-Gunn 2000; Rankin and Quane 2002). The between neighbourhood differences were somewhat larger for parental involvement and parental investment than discipline effectiveness. This result coincided with results from Rankin and Quane (2002) and Furstenberg et al. (1999) who also found that parenting oriented toward family management practices and involvement in the community varied between neighbourhoods to a greater extent than within-family processes. Rankin and Quane (2002) observe that this finding is not entirely unexpected since parental involvement is to some extent dependent on the availability of activities, groups or institutions which likely vary by neighbourhood.

2. Neighbourhood structural disadvantage explains relatively large proportions of the existing variation in average parenting practices across neighbourhoods

From the social disorganization perspective, structural variables such as socioeconomic disadvantage, residential mobility and ethnic heterogeneity are presumed to be clustered together within local areas, and are also presumed to at least partially explain variation in the ability of local communities to realize common values or solve common problems (Kornhauser 1978, 120). Past research has primarily focussed on the links between these structural conditions and problem child and neighbourhood outcomes including delinquency and crime (Sampson, Morenoff and Gannon-Rowley 2002). However, additional research has suggested that the structural conditions of neighbourhoods may also have direct associations with some parenting practices (e.g., Briggs 1998; Cantillon 2006; Caughy, Brodsky, O'Campo, and Aronson 2001; Gorman-Smith, Tolan, and Henry 2000; Furstenberg et al. 1999; Klebanov, Brooks-Gunn and Duncan 1994; McLoyd 1990; Simons et al. 2002). Consistent with these studies, results from both aggregate and multilevel analyses in this chapter indicated that lower levels of the three derived Census measures of neighbourhood structural disadvantage were generally associated with higher levels of average neighbourhood parenting practices. Moreover, multilevel analyses indicated that in some cases the relationships between structural variables and parenting practices held over and above relevant individual-level characteristics; however, there were differences between the parenting practices in this respect.

Higher levels of neighbourhood socioeconomic disadvantage and residential mobility were associated with lower average neighbourhood parental discipline effectiveness scores. Together these structural variables explained about 58% of the variation in discipline effectiveness across neighbourhoods (after controlling for individual variables this figure increases to 72%). The direction of the relationship between these two structural variables and discipline effectiveness held after individual controls were taken into account. These results are consistent with past research indicating that parenting strategies such as paternal warmth, responsiveness and monitoring are negatively influenced by the level of neighbourhood poverty (Klebanov, Brooks-Gunn and Duncan 1994), and by the level of residential turnover in the neighbourhood (Cantillon 2006).

Average neighbourhood parental investment scores were negatively associated with neighbourhood levels of ethnic heterogeneity. This variable alone explained about one-third of the variation in parental investment across neighbourhoods, and this proportion did not change significantly after controlling for individual effects. The proportion (32%) of the variance explained for investment suggests that there is room to further specify the characteristics of neighbourhoods that influence parental investment. Nonetheless, the importance of neighbourhood heterogeneity in explaining variation in parental investment is notable. The result is contrary to findings presented by Furstenberg et al. (1999) in which parental investment was greatest in neighbourhoods with greater racial and ethnic diversity. They attribute this finding to the fact that, along with restrictiveness, parental investment may be "...the most practical option available

to parents living in poor minority neighbourhoods...” (1999, 158). The difference in the direction of the effect of heterogeneity between this study and Furstenberg’s study could be attributable to differences in the composition of the minority populations in the two cities. For instance, African-American residents formed the majority (40%) of the population in Philadelphia neighbourhoods in Furstenberg’s study, but in the Winnipeg study area, visible minority residents formed about 20% of the population and this population was distributed among many different groups. The greater population heterogeneity in Winnipeg neighbourhoods may serve as an impediment for these parents to utilize strategies that are more oriented to the local community.

Together, the three neighbourhood structural variables explained a very large proportion (93%) of the variation in average neighbourhood parental involvement scores. The size of the contribution of heterogeneity was greater than for the other two structural variables; however, lower levels of each of the structural variables were associated with higher average parental involvement levels, over and above individual controls. This finding demonstrates the strong connection between the parental involvement measure used in this study and the local neighbourhood structural context, and is consistent with findings presented by Furstenberg et al. (1999, 261) who reported that “the most advantaged parents living in the most advantaged settings enjoy the greatest number of institutional connections and the most positive social networks...” (1999, 163).

3. Some evidence suggests that neighbourhood structural conditions also moderate the relationship between parenting practices and children's outcomes

In addition to having a direct influence on average parenting practices, results in this chapter demonstrates that neighbourhood structural disadvantage may also influence the relationship between parenting and children's outcomes. For example, the relationship between parental involvement and children's verbal ability varied significantly across neighbourhoods, and this variation was partially accounted for by the level of socioeconomic disadvantage in the neighbourhood. Although parental involvement was positively associated with verbal ability in both low- and high-disadvantage neighbourhoods; the positive influence of parental involvement on verbal ability was lower in more disadvantaged neighbourhoods.

4. Neighbourhood social cohesion does not completely mediate the relationship between structural variables and average parenting across neighbourhoods

From the social disorganization perspective, the quality of neighbourhood social processes, including neighbourhood social cohesion, was expected to mediate the negative influence of neighbourhood structural disadvantage on individual outcomes, and particularly violent behaviour (Sampson, Raudenbush and Earls 1997). Past research has also suggested that neighbourhood social cohesion may also play a role in the reduction of children's problem behaviours (Aneshensel and Sucoff 1996; Kohen et al. 2002). The results in this chapter demonstrate that the mediating effect of social cohesion may also play some role in explaining variation in parenting behaviours.

Results showed that the effect of neighbourhood structural disadvantage on average levels of discipline effectiveness and parental involvement was only partially mediated by the level of neighbourhood social cohesion. For both parenting variables, the effect of socioeconomic disadvantage and residential mobility were rendered insignificant after the addition of neighbourhood social cohesion; however, in the parental involvement model, the effect of ethnic heterogeneity remained a significant explanatory variable after accounting for social cohesion.

This chapter raises further questions about the underlying reasons for the observed variation in parenting practices and their consequences for children across contexts. Parents' differential access to social support networks provides one possible explanation. Wilson (1987) and others (Belle 1983; Ceballo and McLoyd 2002) have argued that families clustered in neighbourhoods with higher rates of poverty and associated social problems, may also be isolated from networks that would afford opportunities to access greater social and economic resources. However, in addition some researchers have argued that the kind of social support network to which parents have access may differentially influence whether they use that support in their parenting efforts. The next chapter will examine the influence that parents' access to supportive social relationships has on the association between neighbourhood contexts, parenting and children's outcomes.

Chapter 6
Parenting, social support and neighbourhood contexts

1.0 Introduction

In the previous chapter the results indicated that at least part of the variation in parenting practices, child outcomes and the association between the two could be explained by conditions in the studied neighbourhoods. Consistent with other research, the majority of variation in parenting and child outcomes was explained by the characteristics and actions of individuals. Nonetheless, the structural conditions of neighbourhoods—or specifically the levels of socioeconomic disadvantage, residential mobility and ethnic heterogeneity—in combination with the level of social cohesion, explained part of the existing variation between neighbourhoods in parenting and child outcomes over and above individual characteristics.

In this chapter the focus shifts to parents' access to social support, and particularly how neighbourhood social and structural conditions influence the relationship between social support, parenting and child outcomes. Social support has been described as a crucial social resource fostering individual well-being by reducing stress (Scheiman 2005; Pearlin et al. 1981). With respect to parenting practices, researchers have suggested that isolation from functional social networks and perceived social support often results in more harsh and less effective parenting strategies (Crnic,

Greenberg, Robinson and Ragozin 1984; Jarrett 1995; McLoyd 1990, 1998; Taylor and Roberts 1995; Dressler 1985).

The individual-level analyses presented in chapter 4 of this study showed that, before considering the neighbourhood conditions, parents' access to social support was significantly positively associated with parenting practices. Thus, parents' who reported that they had higher levels of access to supportive social relationships also reported higher levels of discipline effectiveness, parental involvement and parental investment. This was particularly the case for parenting strategies that were oriented toward managing the conditions outside of the home (i.e., parental involvement) than toward managing the within-family environment (i.e., discipline effectiveness). In addition, social support partially mediated the relationship between families' SES and parenting practices such that the level of SES became a less important determinant of positive parenting practices after parents' access to social support was taken into account.

The overarching objective of this chapter is to investigate whether and how social and economic resources within neighbourhoods influence parents' access to and use of social support. More specifically, I test the applicability of three hypotheses concerned with the interplay between individuals' social support and broader contextual environments. As was described in more detail in chapter 2, the stress-buffering hypothesis proposes that social support is of primary benefit to those living in stressful circumstances, and consequently, it would be expected to offset the potentially harmful effects of residing in structurally disadvantaged neighbourhoods (Cohen and Wills 1985). In this view social support would have the most positive influence on parenting

and child outcomes for those in the most disadvantaged neighbourhoods (e.g., Leventhal and Brooks-Gunn 2000). The attenuation hypothesis assumes that for a variety of reasons those living in the most stressful conditions may not benefit from the available social support, and consequently, it would be expected that in the most disadvantaged neighbourhoods the positive influence of social support on parenting and child outcomes would be weaker than in more advantaged neighbourhoods (Ceballo and McLoyd 2002, 1312). And finally, the main-effects hypothesis (Cohen and Wills 1985) proposes that social support positively influences outcomes regardless of whether individuals face stressful events or not. From this view, it is expected that social support and neighbourhood conditions will have independent effects on parenting outcomes, and that the strength of the relationship between support and parenting outcomes will be the same across different neighbourhood conditions.

1.1 Chapter organization and summary of hypotheses

A central question in this chapter is whether “stressful” neighbourhood conditions, characterized by high levels of structural disadvantage and low levels of social cohesion, influence the relationship between support and parenting behaviours, or ultimately between support and the relationship between parenting and child outcomes.

The results are presented in three sections. In the first section I investigate who has access to social support by examining distribution of social support across individuals and neighbourhoods. The purpose is to assess whether there is an association

between parents' reported access to social support and their socioeconomic levels, and/or neighbourhood structural conditions. Based on previous research it is hypothesized that on the whole parents in diminished socioeconomic circumstances would report lower access to social support. For example researchers have often reported an association between economic deprivation and social isolation (Briggs 1998; Fernandez and Harris 1992; Sampson and Morenoff 2004; Wilson 1987).

In the second section, I investigate the relationship between parents' social support and their parenting practices. I test the differing propositions that the relationship between support and positive parenting will be stronger in neighbourhoods with greater structural disadvantage (stress-buffering hypothesis), or that the relationship will be weaker in these neighbourhoods (attenuation hypothesis), or will remain the same across neighbourhood conditions (main-effects hypothesis). In addition I test the proposition that any influence that neighbourhood structural conditions have on the parenting-social support relationship will be influenced by neighbourhood social processes, or more specifically by neighbourhood social cohesion. The hypotheses to be tested in this section are:

Hypothesis 1: Net of individual-level factors, parents' social support will have a stronger effect on positive parenting practices in structurally disadvantaged versus advantaged neighbourhood contexts (stress-buffering hypothesis).

Hypothesis 2: Net of individual-level factors, parents' social support will have a weaker effect on positive parenting practices in structurally disadvantaged versus advantaged neighbourhood contexts (attenuation hypothesis).

Hypothesis 3: Net of individual-level factors, parents' social support will have a generalized positive effect on parenting practices, independent of neighbourhood structural conditions (main-effects hypothesis).

Hypothesis 4: Neighbourhood social cohesion will mediate the influence of neighbourhood structural factors on the relationship between social support and parenting.

In the third section, I extend the investigation to children's verbal abilities and behavioural outcomes, and specifically to the ways that parental social support may influence these outcomes and whether this influence varies across neighbourhood contexts. In general, the results in this section address the propositions that parents serve as a primary conduit through which neighbourhood environments may influence children (and this may be particularly so for young children); and that parents' access to supportive social relationships may positively influence children's outcomes.

Specifically, I test the following hypotheses:

Hypothesis 5: Net of relevant individual-level factors, (H5a) parents' social support will be positively associated with children's verbal ability and behavioural outcomes, (H5b) the relationship between parents' social support and children's outcomes will be stronger in neighbourhoods with greater

structural disadvantage, and (H5c) the strength of this relationship will be reduced when neighbourhood social cohesion is accounted for.

Hypothesis 6: Net of relevant individual-level factors, (H6a) parents' social support will moderate (strengthen) the relationship between parenting practices and children's outcomes, and (H6b) this moderating effect will be greater in neighbourhoods with higher levels of structural disadvantage.

2.0 Results

2.1 *Who has access to social support? Social support, family and neighbourhood SES*

As a first step I investigated the association between family-level socioeconomic status and parents' reported social support scores. For this purpose, I used the Winnipeg sample as a whole, grouping parents into quartiles based on their family SES scores and comparing mean social support scores across quartiles (Figure 6.1). The range of average social support scores across SES quartiles was relatively narrow (7.1 to 7.64), nonetheless the scores generally increased with each higher level of family socioeconomic status. The largest difference was between the second and third quartiles where average social support scores jumped from 7.19 to 7.64, respectively. There was a slight decrease from the 3rd to the 4th quartile, suggesting that the relationship between SES and support may not be linear; however, this difference was not statistically significant.

Figure 6.1: Parental social support by family socioeconomic status quartiles, Winnipeg 2000

† Difference from 3rd quartile is statistically significant ($p \leq 0.05$).

‡ Difference from 4th quartile is statistically significant ($p \leq 0.05$).

Data source: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg.

To assess the relationship between neighbourhood structural conditions and social support, I grouped the neighbourhood structural variables—socioeconomic disadvantage, residential mobility and ethnic heterogeneity—into quartiles (figure 6.2). The results of this aggregate level analysis indicated that there was only a small amount of variation in social support scores across neighbourhood types. Thus, the differences in mean social support scores between successive quartiles were not statistically significant for any of the neighbourhood structural measures.

Nonetheless, the patterns of association generally indicated that on average parents residing in neighbourhoods with greater structural disadvantage perceived that

they had lower access to social support. Notably, average social support was the lowest in the fourth quartile or the most structurally disadvantaged neighbourhoods for each of the three neighbourhood measures. However, differences between the first and second quartiles for socioeconomic disadvantage and residential mobility presented an exception to the general decreasing pattern. In this case, support scores for the first quartile (representing the most structurally advantaged neighbourhoods) were lower than those for the second quartile. Though not statistically significant, this finding coincides with the individual-level relationship between social support and SES in figure 6.2, and suggests that the relationship between perceived access to social support and socioeconomic and mobility conditions may not be linear (or may level off when neighbourhood disadvantage is at the highest level).

To test for the presence of a curvilinear relationship in multivariate models in this study, I estimated models with the addition of the squared family level SES and neighbourhood structural variables. The quadratic terms for these variables did not reach significance, suggesting that the curvilinear relationships did not hold after accounting for the other variables.

Figure 6.2: Average parental social support by neighbourhood structural features quartiles, Winnipeg 2000-01

† Difference from the 4th quartile of the variable is statistically significant ($p \leq 0.05$).

‡ Difference from the 3rd quartile of the variable is statistically significant ($p \leq 0.01$).

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

2.2 The influence of social support on parenting across neighbourhood contexts

2.2.1 How is parents' social support associated with parenting practices and does the relationship vary across neighbourhood contexts?

Results to this point have indicated that parents in the lowest quartile of socioeconomic status reported slightly lower levels of access to social support. Moreover, average levels of parent support were slightly lower in neighbourhoods characterized by the three measures of structural disadvantage, suggesting that in these places there was a tendency toward parents reporting that they had diminished access to

support; however, this pattern was not statistically significant across all quartiles. In addition results presented earlier in chapter 4 indicated that, overall, parents with greater support also reported more constructive parenting practices. Thus, at the individual-level, higher scores of parents' perceived access to social support were associated with higher scores for each of the parenting variables, and social support mediated the negative association between lower levels of family socioeconomic status and parenting practices.

To further investigate the relationship between support, parenting and neighbourhood environments, I next examined the influence of neighbourhood structural conditions on the association between parents' social support and their parenting practices. For each parenting outcome I conducted a series of multilevel models testing for neighbourhood variation in social support net of individual-level controls, and for the presence of significant cross-level interactions between social support and neighbourhood structural conditions (Table 6.1).

Findings in this table demonstrate a number of points. First, in line with the individual-level OLS results from chapter 4, parental support is positively associated with each of the parenting practices net of individual controls in all of the multilevel models presented in table 6.1. Second, the social composition of individuals in neighbourhoods explains a relatively large proportion of neighbourhood variation in parenting practices. Thus, as a result of controlling for the individual variables in model 1—i.e., the combination of social support and the individual control variables—the neighbourhood level variance (τ_{00}) is reduced by 52% for parental discipline

effectiveness, 36% for parental investment, and 47% for parental involvement over the τ_{00} in the empty model (see Table 5.2).

Table 6.1: Linear multilevel models of social support as a moderator of the influence of neighbourhood structural conditions on parenting, Winnipeg 2000-01

	Discipline effectiveness			Parental investment			Parental involvement		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Intercept (γ_{00})	6.76 *** (0.18)	6.75 *** (0.18)	6.74 *** (0.17)	7.10 *** (0.16)	7.09 *** (0.16)	7.08 *** (0.16)	5.52 *** (0.18)	5.52 *** (0.18)	5.52 *** (0.18)
Boy (γ_{10})	0.03 (0.08)	0.04 (0.08)	0.04 (0.08)	-0.02 (0.11)	-0.01 (0.11)	-0.03 (0.11)	0.06 (0.11)	0.06 (0.11)	0.05 (0.11)
Child behaviour problems (γ_{20})	-0.32 *** (0.04)	-0.31 *** (0.04)	-0.32 *** (0.04)	0.01 (0.05)	0.01 (0.06)	0.00 (0.06)	0.11 ** (0.04)	0.11 ** (0.04)	0.11 ** (0.04)
Mother (γ_{30})	0.25 † (0.15)	0.27 † (0.15)	0.30 † (0.15)	-0.06 (0.18)	-0.05 (0.17)	-0.01 (0.18)	0.56 ** (0.15)	0.55 ** (0.15)	0.55 *** (0.15)
Parent's age (years) (γ_{40})	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.03 *** (0.01)	0.03 *** (0.01)	0.03 *** (0.01)
Single parent (γ_{50})	0.14 (0.09)	0.14 (0.10)	0.13 (0.09)	-0.06 (0.12)	-0.03 (0.12)	-0.04 (0.12)	-0.19 (0.14)	-0.19 (0.14)	-0.20 (0.14)
Parent health quality (γ_{60})	0.11 * (0.04)	0.11 * (0.04)	0.09 * (0.04)	0.08 (0.06)	0.07 (0.06)	0.06 (0.06)	0.08 (0.05)	0.08 † (0.05)	0.08 (0.05)
3 + children in household (γ_{70})	0.02 (0.09)	0.02 (0.09)	0.02 (0.09)	-0.22 † (0.13)	-0.21 † (0.13)	-0.21 (0.13)	0.02 (0.13)	0.02 (0.13)	0.01 (0.13)
Family SES (γ_{80})	0.11 † (0.07)	0.10 (0.07)	0.10 (0.07)	0.19 † (0.12)	0.18 † (0.12)	0.21 † (0.12)	0.41 *** (0.11)	0.41 *** (0.11)	0.41 *** (0.11)
Parental social support (γ_{90})	0.10 ** (0.03)	0.10 ** (0.03)	0.09 ** (0.03)	0.17 *** (0.04)	0.17 *** (0.04)	0.17 *** (0.04)	0.15 *** (0.03)	0.16 *** (0.03)	0.16 *** (0.03)
Neighbourhood socioeconomic disadvantage ^a (γ_{91})			0.03 (0.03)			0.10 * (0.04)			0.01 (0.04)
Neighbourhood residential mobility ^a (γ_{92})			0.08 *** (0.02)			0.02 (0.04)			-0.01 (0.03)
Neighbourhood ethnic heterogeneity ^a (γ_{93})			0.02 (0.03)			0.00 (0.04)			-0.03 (0.03)
<i>Variance components</i>									
Neighbourhood-level, τ_{00}	0.035 *	0.031	0.020	0.083 **	0.076 *	0.079 *	0.121 ***	0.125 **	0.123 ***
Parents' perceived social support, τ_{99}		0.003	0.001		0.015	0.020		0.001	0.001
Individual-level, σ^2	1.124	1.120	1.121	1.678	1.647	1.637	1.507	1.503	1.510

Notes: Standard errors for coefficients are in parentheses. Individual-level SES, parent health quality, parent age, child behavioural problems and parent social support are grand mean centred, other individual level variables are left in original metric (0, 1). Neighbourhood-level predictors are grand-mean centred.

^a Factor scores based on 2001 Census data.

^b Average neighbourhood cohesion scores based on NLSCY data aggregated to the neighbourhood-level.

*** p = 0.001; ** p = 0.01; * p = 0.05; † p = 0.1

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

Third, social support does not vary significantly across neighbourhoods, though it comes close in the parental investment model. In model 2, the social support variable was permitted to vary randomly across neighbourhoods. Thus, the coefficient for social support (γ_{90}) in model 2 represented the average effect of this variable across neighbourhoods, and for each parenting practice was significantly and positively related to parenting. However, the model 2 variance components for the social support slope (τ_{99}) did not reach statistical significance. Nonetheless, the relatively limited statistical power with which to detect variation in the parenting slopes across neighbourhoods suggests that the existence of variation cannot be entirely ruled out (e.g., see Browning 2002; Snijders and Bosker 2001, 75). Consequently, in model 3, for each parenting practice I also tested for the presence of cross-level interactions between support and neighbourhood structural conditions.

And fourth, consistent with hypothesis 3, (main-effects) there were no significant cross-level interactions between neighbourhood structural conditions and social support for the parental involvement model. Thus, social support maintained a positive association with involvement irrespective of the neighbourhood structural conditions measured in this study. In contrast, significant cross-level interactions existed for parental discipline effectiveness and parental investment, and these results partially supported hypothesis 1 (stress-buffering) that social support would be more strongly associated with positive parenting in more structurally disadvantaged neighbourhoods. Although the between-neighbourhood variance components for social support in these two models were not statistically significant, the significant cross-level interactions are

discussed below. As was mentioned in chapter 5, Snijders and Bosker (2001) have argued that it is more prudent to accept any significant interaction terms than to reject them on the basis of non-significant variance component results.

With respect to the discipline effectiveness model, the coefficients for each of the three neighbourhood structural variables were positive; however, only the coefficient for neighbourhood residential mobility was statistically significant ($\gamma_{92} = 0.08$, $p \leq 0.001$). In this case, the coefficient indicated that the positive association between parental support and discipline effectiveness became stronger as the level of residential mobility in neighbourhoods became greater.

This relationship is illustrated in figure 6.3 which depicts the varying steepness of the slope for parental support in two types of neighbourhoods: those with a low-level of residential mobility (represented by those falling at the 25th percentile of neighbourhood mobility) and those with high levels of residential mobility (represented by those at the 75th percentile). The slope was steeper in neighbourhoods with higher mobility suggesting that the positive influence of support on parental discipline effectiveness was strongest when the neighbourhood conditions were least stable. Thus, other factors being equal, at the highest level of social support (10 on support scale) parents living in highly mobile neighbourhoods would have discipline effectiveness scores nearly 1.2 points higher (on a 10-point scale) than parents living in residentially stable neighbourhoods. In contrast, for parents with no access to social support (1 on the social support scale) the level of residential mobility in the neighbourhood would be inconsequential.

Figure 6.3: Cross-level interaction between neighbourhood residential mobility and the slope of discipline effectiveness on social support, Winnipeg 2000-01

Notes: Neighbourhood mobility and parental social support are grand-mean centred. Low mobility represents neighbourhoods at the 25th percentile of residential mobility and high mobility represents those at the 75th percentile.

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

The coefficients for each of the three neighbourhood structural variables were also positive in the parental investment model; however, only the coefficient for socioeconomic disadvantage was statistically significant ($\gamma_{91} = 0.10, p \leq 0.05$). Figure 6.4 shows that in general terms parental investment increases along with social support; however, the positive influence of social support was stronger in neighbourhoods that were the most socioeconomically disadvantaged. Thus, the slope in neighbourhoods with higher levels of socioeconomic disadvantage (75th percentile) was steeper than was the case in more advantaged neighbourhoods (25th percentile). After controlling for the other variables in the model, at the highest level of social support (10 on support scale)

parents living in socioeconomically disadvantaged neighbourhoods would have parental investment scores about 1.3 points higher (on a 10 point scale) than parents living in socioeconomically advantaged neighbourhoods. However, without support (1 on the social support scale) neighbourhood SES would have no effect.

Figure 6.4: Cross-level interaction between neighbourhood socioeconomic disadvantage and the slope of parental investment on social support, Winnipeg 2000-01

Notes: Neighbourhood socioeconomic disadvantage and parental social support are grand-mean centred. Low disadvantage represents neighbourhoods at the 25th percentile of socioeconomic disadvantage and high disadvantage represents those at the 75th percentile.

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

2.2.2 Neighbourhood cohesion as a mediator of the influence of structural disadvantage on the support parenting relationship

To test hypothesis 4 that the influence of neighbourhood structural conditions on the social support/parenting practices relationship would be mediated by the level of neighbourhood cohesion, I calculated additional models for parental discipline

effectiveness and parental investment. Only the models for discipline effectiveness showed evidence that neighbourhood social cohesion moderated the association between social support and parenting, and also mediated the effects of neighbourhood structural conditions on this relationship. The discipline effectiveness models are presented in Table 6.2.

Table 6.2: Linear multilevel models of the influence of neighbourhood social cohesion on the social support/discipline effectiveness relationship, Winnipeg 2000-01

	Model 1	Model 2	Model 3
Intercept (γ_{00})	6.74 *** (0.17)	6.73 *** (0.17)	6.73 *** (0.17)
Boy (γ_{10})	0.04 (0.08)	0.04 (0.08)	0.04 (0.08)
Child behaviour problems (γ_{20})	-0.32 *** (0.04)	-0.32 *** (0.04)	-0.32 *** (0.04)
Mother (γ_{30})	0.29 † (0.15)	0.30 * (0.15)	0.30 * (0.15)
Parent's age (years) (γ_{40})	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
Single parent (γ_{50})	0.12 (0.09)	0.12 (0.09)	0.12 (0.09)
Parent health quality (γ_{60})	0.10 * (0.04)	0.10 * (0.04)	0.10 * (0.04)
3 + children in household (γ_{70})	0.02 (0.09)	0.02 (0.09)	0.02 (0.09)
Family SES (γ_{80})	0.10 (0.07)	0.10 (0.07)	0.10 (0.07)
Parental social support (γ_{90})	0.10 ** (0.03)	0.09 ** (0.03)	0.09 ** (0.03)
Neighbourhood residential mobility ^a (γ_{91})	0.08 *** (0.02)		0.05 (0.03)
Neighbourhood social cohesion ^b (γ_{92})		-0.11 ** (0.03)	-0.06 (0.04)
<i>Variance components</i>			
Neighbourhood-level, τ_{00}	0.0224	0.0231	0.0208
Parents' perceived social support, τ_{99}	0.0005	0.0006	0.0009
Individual-level, σ^2	1.1187	1.1186	1.1186

Notes: Standard errors for coefficients are in parentheses. Individual-level SES, parent health quality, parent age, child behavioural problems and parent social support are grand mean centred, other individual level variables are left in original metric (0, 1). Neighbourhood-level predictors are grand-mean centred.

^a Factor scores based on 2001 Census data.

^b Average neighbourhood cohesion scores based on NLSCY data aggregated to the neighbourhood-level.

*** p = 0.001; ** p = 0.01; * p = 0.05; † p = 0.1

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

The significant cross-level interactions in models 1 and 2 indicated that, separately, mobility and cohesion influenced the social support/discipline effectiveness relationship. In model 1, net of the individual-level controls, residential mobility alone positively influenced the relationship between support and parenting (as was also demonstrated in Table 6.1 above). In model 2, the coefficient for neighbourhood cohesion was negative ($\gamma_{92} = -0.11$, $p \leq 0.01$) indicating that the strength of the relationship between support and parenting was lower when levels of neighbourhood cohesion were higher. This relationship is illustrated in figure 6.5 which shows the steeper support-discipline effectiveness slope for neighbourhoods that were characterized by lower levels of neighbourhood social cohesion. As was the case with the result for residential mobility, this finding supports the stress-buffering hypothesis rather than the attenuation hypothesis, as the highest levels of social support are most beneficial when the neighbourhood environment is the least cohesive.

Model 3 results indicate that neighbourhood social cohesion mediates the effect of residential mobility on the social support/discipline effectiveness relationship. The addition of neighbourhood cohesion in model 3 has the effect of reducing the size of the neighbourhood residential mobility coefficient by about 38% and rendering it non-significant. This result suggests that when the level of social cohesion is held constant (controlled for) there is a reduction in the steepness of the slope for high mobility neighbourhoods. For instance, social support slopes in high- and low-residential mobility neighbourhoods where the social cohesion levels were the same would be more similar to each other than in neighbourhoods where cohesion levels were permitted to

vary. Thus, the addition of social cohesion in model 3 reduced the buffering effect of parents' social support in highly mobile neighbourhoods.

Figure 6.5: Cross-level interaction between neighbourhood cohesion and the slope of discipline effectiveness on social support, Winnipeg 2000-01

Notes: Neighbourhood residential cohesion and parental social support are grand-mean centred. Low cohesion represents neighbourhoods at the 25th percentile of neighbourhood social cohesion and high cohesion represents those at the 75th percentile.

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

2.3 Parents' social support and children's outcomes

Results to this point have demonstrated that parents' perceived access to social support was associated with their parenting styles such that higher levels of social support were associated with higher levels of parental discipline effectiveness, parental involvement and parental investment. In addition, the results pointed to a limited amount

of variation in the relationship between support and parenting between neighbourhoods. This result was partially explained for discipline effectiveness and parental investment by the structural conditions in the neighbourhood. The direction of these cross-level interactions supported hypothesis 2 that the relationship between positive parenting practices and social support would be stronger in neighbourhoods with greater structural disadvantage since social support served as a buffer against stressful environmental conditions.

In this final section I extend the investigation of the association between neighbourhood environments, social support and parenting by examining their relationship to children's outcomes. Specifically, I consider (1) the relationship between parents' support and children's outcomes and neighbourhood influences on this relationship, and (2) the moderating effect of social support on parenting practices as they influence children's outcomes, and whether these relationships vary by neighbourhood conditions.

2.3.1 Is parental social support associated with children's outcomes? Does this relationship differ across neighbourhood environments?

To examine these questions, I modeled children's verbal abilities and problem behaviours as a function of parents' social support, individual controls (including the three parenting practice variables), and neighbourhood structural variables. A number of points can be drawn from the children's verbal ability results presented in Table 6.3. First, as expected, parents' social support was positively associated with children's verbal ability scores, and this relationship held in each of the models, regardless of

individual controls and/or neighbourhood variables. The addition of the social support variable in model 2 also had the effect of reducing the strength of the positive relationship between parenting practices and children's verbal abilities. In particular the coefficients for parental investment and parental involvement were reduced by 25% and 16%, respectively.

Second, consistent with other findings to this point in the study, a considerable proportion of between neighbourhood variance was in fact due to compositional factors or the individual characteristics of families who lived in the neighbourhoods. Thus, the individual variables in model 2 together explained about 22% of the individual-level variance (σ^2) in children's verbal abilities over the variance reported in the empty model (Table 5.4), but about 70% of the neighbourhood-level variance (τ_{00}).

Third, parental social support varied significantly across neighbourhoods. Thus, in model 3 when the social support slope was permitted to vary randomly at the neighbourhood-level, the resulting variance component ($\tau_{99} = 3.22$, $p \leq 0.01$) was statistically different from zero.

Fourth, in model 4 the neighbourhood variation in social support was partially explained by neighbourhood structural variables, with significant cross-level interactions between social support and socioeconomic disadvantage, and a nearly significant interaction between social support and residential mobility ($p \leq 0.1$). Together neighbourhood structural variables explained about one-half of the between-neighbourhood variation in social support slopes, represented by a reduction of 52% from the unconditional slope variance in model 3 ($\tau_{99} = 3.22$) to model 4 ($\tau_{99} = 1.56$).

Fifth, social support did not serve as a buffer against high levels of neighbourhood socioeconomic disadvantage; on the contrary, social support was most strongly associated with higher verbal ability scores when socioeconomic disadvantage was low. This finding was contrary to hypothesis 5b. The negative coefficient for socioeconomic disadvantage (γ_{91}) indicated that in neighbourhoods with higher levels of disadvantage the positive association between parents' social support and children's verbal abilities was weaker than in more advantaged neighbourhoods. The relationship is illustrated in Figure 6.6 which shows a steeper social support/verbal ability slope for neighbourhoods that were *most socioeconomically advantaged*.

Figure 6.6: Cross-level interaction between neighbourhood socioeconomic disadvantage and the slope of verbal ability on social support, Winnipeg 2000-01

Notes: Neighbourhood socioeconomic disadvantage and parental social support are grand-mean centred. Low disadvantage represents neighbourhoods at the 25th percentile of socioeconomic disadvantage and high disadvantage represents those at the 75th percentile.

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

The coefficient for residential mobility (γ_{92}) in model 5 did not reach significance ($p \leq 0.1$) ; however, contrary to the result for socioeconomic disadvantage the positive sign for this coefficient would have indicated that higher levels of neighbourhood residential mobility were associated with greater strength in the relationship between parents' support and children's verbal abilities. While this result was not significant the differences in the signs for these neighbourhood structural variables suggests the need for further investigation as to the differing influences of mobility, disadvantage and heterogeneity.

Finally, when the level of neighbourhood social cohesion was held constant the influence of neighbourhood socioeconomic disadvantage and residential mobility were rendered non-significant (model 5).

Table 6.3: Linear multilevel models of children's verbal ability (PPVT-R) scores--the influence of parent's social support, Winnipeg 2000-01

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept (γ_{00})	98.04 *** (2.45)	98.95 *** (2.39)	98.59 *** (2.43)	98.43 *** (2.43)	98.44 *** (2.48)	98.40 *** (2.48)
Boy (γ_{10})	-2.30 † (1.31)	-2.47 † (1.42)	-2.43 † (1.40)	-2.40 † (1.40)	-2.22 (1.37)	-2.22 † (1.37)
Single parent (γ_{20})	-2.67 * (1.05)	-2.94 ** (1.06)	-3.34 ** (1.04)	-3.37 ** (1.03)	-3.32 ** (1.04)	-3.35 ** (1.06)
Mother (γ_{30})	5.20 * (2.23)	4.84 * (2.23)	5.41 * (2.16)	5.66 ** (2.19)	5.19 * (2.16)	5.27 * (2.18)
3+ children in household (γ_{40})	-5.33 *** (1.22)	-5.49 *** (1.21)	-5.52 *** (1.18)	-5.51 *** (1.16)	-5.50 *** (1.21)	-5.49 *** (1.20)
Family SES (γ_{50})	6.55 *** (0.87)	6.35 *** (0.87)	6.12 *** (0.88)	6.05 *** (0.88)	5.95 *** (0.90)	5.94 *** (0.89)
Discipline effectiveness (γ_{60})	0.47 (0.56)	0.11 (0.55)	0.18 (0.56)	0.14 (0.54)	0.06 (0.54)	0.07 (0.54)
Parental investment (γ_{70})	1.20 ** (0.44)	0.90 † (0.47)	0.86 † (0.47)	0.86 † (0.47)	0.91 * (0.46)	0.91 * (0.47)
Parental involvement (γ_{80})	1.25 * (0.62)	1.05 (0.68)	1.00 (0.67)	1.00 (0.67)	1.00 (0.68)	1.01 (0.67)
Parental social support (γ_{90})		1.03 * (0.49)	1.24 * (0.52)	1.23 * (0.52)	1.38 ** (0.47)	1.38 ** (0.48)
Neighbourhood socioeconomic disadvantage ^a (γ_{91})					-1.16 * (0.52)	-1.25 † (0.63)
Neighbourhood residential mobility ^a (γ_{92})					0.99 † (0.41)	0.87 (0.65)
Neighbourhood ethnic heterogeneity ^a (γ_{93})					-0.68 (0.60)	-0.73 (0.59)
Neighbourhood social cohesion ^b (γ_{94})				-0.53 (0.76)		-0.27 (1.06)
<i>Variance components</i>						
Neighbourhood-level, τ_{00}	10.19 **	9.35 **	10.08 **	10.01 **	12.38 ***	12.35 **
Parents' perceived social support, τ_{99}			3.22 **	3.56 **	1.56 †	1.96 †
Individual-level, σ^2	212.9	217.2	210.1	210.0	208.3	208.2

Notes: Standard errors for coefficients are in parentheses. Individual-level parental social support, SES and the three parenting practice variables are grand mean centred, other individual level variables are left in original metric (0, 1). Neighbourhood-level predictors are grand-mean centred.

^a Factor scores based on 2001 Census data.

^b Average neighbourhood cohesion scores based on NLSCY data aggregated to the neighbourhood-level.

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.1$

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

Table 6.4 presents the results for a similar series of analyses for children's behavioural problems. Overall, the results from these models did not support hypotheses 4a, b or c. First, despite the fact that the direction of the social support coefficient was negative, indicating that greater parental support was associated with lower levels of children's problem behaviours, social support was not significantly associated with children's problem behaviours after controlling for other individual characteristics. For example, after controlling for individual level variables in model 3, the support coefficient decreased by a magnitude of 66% from model 1 and was rendered non-significant ($p \leq 0.1$).

Second, the relationship between behaviour and support did not vary significantly across neighbourhoods net of other control variables. The results from models 4 to 6 showed that the neighbourhood-level variation in the parents' social support slope was very small and non-significant. Moreover, contrary to hypotheses 4b and 4c, there were no significant cross-level interactions between social support and neighbourhood structural and/or social process variables in these models. This second finding is not surprising given the relatively small neighbourhood variation in children's problem behaviours reported in chapter 5 ($ICC = 3\%$).

Table 6.4: Linear multilevel models of children's behavioural problems--the influence of parent's social support, Winnipeg 2000-01

	Model 1	Model 2	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept (γ_{00})	2.62 *** (0.07)	2.47 *** (0.06)	2.46 *** (0.05)	2.45 *** (0.06)	2.47 *** (0.06)	2.47 *** (0.06)	2.48 *** (0.06)
Parents' age (years) (γ_{01})		-0.02 * (0.01)	-0.02 ** (0.01)	-0.02 * (0.01)	-0.02 * (0.01)	-0.018 * (0.01)	-0.02 * (0.01)
Single parent (γ_{02})		0.45 *** (0.11)	0.44 *** (0.10)	0.46 *** (0.11)	0.47 *** (0.11)	0.46 *** (0.11)	0.46 *** (0.11)
Parental health quality (γ_{03})		-0.21 *** (0.04)	-0.17 *** (0.05)	-0.14 *** (0.04)	-0.16 *** (0.04)	-0.16 *** (0.04)	-0.16 *** (0.04)
Parental discipline effectiveness (γ_{04})			-0.40 *** (0.06)	-0.41 *** (0.06)	-0.42 *** (0.06)	-0.42 *** (0.06)	-0.42 *** (0.06)
Parental involvement (γ_{05})			0.14 *** (0.04)	0.15 *** (0.04)	0.15 *** (0.04)	0.15 *** (0.04)	0.15 *** (0.04)
Parental social support (γ_{06})	-0.08 * (0.03)	-0.05 † (0.03)		-0.03 (0.03)	-0.04 (0.03)	-0.03 (0.03)	-0.04 (0.03)
Neighbourhood socioeconomic disadvantage ^a (γ_{61})					0.02 (0.03)	0.00 (0.03)	0.00 (0.03)
Neighbourhood residential mobility ^a (γ_{62})					0.04 * (0.02)	0.01 (0.04)	0.01 (0.04)
Neighbourhood ethnic heterogeneity ^a (γ_{63})					0.07 ** (0.02)	0.05 † (0.03)	0.05 † (0.03)
Neighbourhood social cohesion ^b (γ_{64})						-0.09 * (0.04)	-0.07 (0.07)
<i>Variance components</i>							
Neighbourhood-level, τ_{00}	0.061 *	0.005	0.009	0.021	0.013	0.017	0.012
Parents' perceived social support, τ_{66}					0.0002	0.0002	0.0002
Individual-level, σ^2	1.690	1.630	1.395	1.387	1.387	1.382	1.388

Notes: Standard errors for coefficients are in parentheses. Individual-level parental support, SES, parental health quality and the three parenting practice variables are grand mean centred, other individual level variables are left in original metric (0, 1). Neighbourhood-level predictors are grand-mean centred.

^a Factor scores based on 2001 Census data.

^b Average neighbourhood cohesion scores based on NLSCY data aggregated to the neighbourhood-level.

*** p = 0.001; ** p = 0.01; * p = 0.05; † p = 0.1

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

2.3.2 Does parental social support moderate the effect of parenting on children's outcomes?

Given that support was only weakly associated with children's behavioural outcomes in the previous section, in this final section I limited my investigation to children's verbal ability outcomes. In particular I examined the possibility that while both parental social support and parenting practices have direct influences on children's verbal ability scores, they could also interact with each other in their influence on children. Specifically, I considered whether parents' social support played a moderating role between parenting practices (in this case, involvement and investment) and children's verbal abilities. This model, illustrated in figure 6.6, was tested separately for respondents residing in high and low structurally disadvantaged neighbourhoods.

Figure 6.7: Support as a moderator of the relationship between parenting and children's verbal abilities across different neighbourhood contexts

To examine neighbourhood differences in individual-level social support by parenting interactions, I divided the sample based on scores falling above and below the

median neighbourhood socioeconomic disadvantage factor score. I performed separate analyses for each of these neighbourhood structural features and each parenting practice. Each model controls for relevant individual-level factors as well as main-effects and interaction terms for social support and parenting practices.

Results for high and low socioeconomic disadvantage neighbourhoods are presented in Table 6.5 and demonstrate that the relationships between child verbal abilities and parental involvement and investment were not consistently moderated by parental social support for high and low socioeconomically disadvantaged neighbourhoods. With respect to parental investment, model 1 (for more advantaged neighbourhoods) shows no significant interaction between social support and parental investment; however, there was a significant interaction between these two factors in model 2 (for more disadvantaged neighbourhoods). In this case, higher parental investment was related to higher children's verbal ability scores when parental support was low. This result lends support to the attenuation hypothesis since the positive influence of social support on the parental investment-child verbal ability relationship was weaker in more disadvantaged neighbourhoods.

Table 6.5: OLS individual-level regression models of children's verbal ability (PPVT-R) scores--test of moderating effect of support, Winnipeg 2000-01

	Parental investment models		Parental involvement models	
	Low neighbourhood disadvantage ^a	High neighbourhood disadvantage ^b	Low neighbourhood disadvantage ^a	High neighbourhood disadvantage ^b
	Model 1	Model 2	Model 1	Model 2
Intercept	81.02 *** (3.85)	85.09 *** (3.36)	82.94 *** (3.66)	87.46 *** (3.15)
Parental social support	1.78 *** (0.34)	0.84 ** (0.31)	1.14 ** (0.35)	0.75 * (0.31)
Parental investment	0.46 (0.41)	1.37 *** (0.36)	1.01 * (0.39)	1.43 *** (0.35)
Social support × Investment	0.61 (0.26)	-0.64 ** (0.22)	0.89 ** (0.26)	-0.05 (0.19)
<i>Control variables</i>				
Boy	-0.67 (1.00)	-4.04 *** (0.92)	-0.76 (1.00)	-4.25 *** (0.93)
Mother	7.61 *** (1.56)	2.13 (1.53)	7.07 *** (1.56)	1.46 (1.55)
Single parent	-2.13 (1.20)	-3.44 *** (0.94)	-2.08 (1.20)	-3.64 *** (0.94)
3+ children in the household	-7.48 *** (1.14)	-3.53 *** (0.93)	-7.94 *** (1.12)	-3.90 *** (0.94)
Family SES	7.06 *** (0.92)	7.07 *** (0.93)	6.64 *** (0.92)	6.23 *** (0.95)
<i>F</i>	25.59 ***	24.15 ***	27.88 ***	20.74 ***
<i>R</i> ²	0.18	0.16	0.19	0.14
Adjusted <i>R</i> ²	0.17	0.15	0.18	0.13

Notes: Standard errors for unstandardized b coefficients are in parentheses. Data are weighted by individual-level child weight.

^a Low neighbourhood disadvantage based on children of families who reside in the neighbourhoods below the median neighbourhood socioeconomic disadvantage factor score unweighted n = 282 (n = 1030, weighted) children in 18 neighbourhoods.

^b High neighbourhood disadvantage based on children of families who reside in the neighbourhoods above the median neighbourhood socioeconomic disadvantage factor score unweighted n = 328 (n = 1199, weighted) children in 18 neighbourhoods.

*** p < 0.001; ** p < 0.01; * p < 0.05

Data sources: 2000 National Longitudinal Survey of Children and Youth, community component Winnipeg; and Statistics Canada 2001 Census.

The models for parental involvement showed that there was a significant interaction in model 1 (advantaged neighbourhoods). In this case, greater parental involvement was associated with higher verbal ability scores when parental support was also high. This result also supported the attenuation hypothesis since social support was more advantageous in less stressful neighbourhood environments.

3.0 Chapter 6 discussion and summary

In this chapter I have considered the relationships between parents' access to social support, neighbourhood structural and social conditions, and parenting and children's outcomes. A primary objective was to assess three hypotheses regarding the relationship between social support and parenting: the stress-buffering hypothesis proposed that social support would offset the potentially harmful effects of residing in structurally disadvantaged neighbourhoods; the attenuation hypothesis proposed that the positive influence of social support would be reduced when neighbourhood conditions were disadvantaged; and the main-effects hypothesis proposed that social support would positively influence outcomes regardless of whether individuals faced stressful events or not. A number of key findings can be drawn from these analyses.

1. There was some evidence that more disadvantaged socioeconomic conditions were associated with lower levels of parents' perceived social support

There was a slight tendency among parents of lower socioeconomic means to also report lower levels of social support; however, the distribution of levels of support across SES quartiles for Winnipeg parents assessed by the NLSCY was relatively narrow. The results in this study are consistent with research on the association between social support and socioeconomic status in the U.S. (Campbell, Marsden and Hurlbert 1986); and European countries (Ostergren 1991), where there is some evidence that in the general population access to social support varies positively with socioeconomic

status, even though the ranges of observed variations in these studies are small. Other research has suggested that the parents of the lowest socioeconomic means may face greater social isolation and consequently a diminished level of perceived or actual access to social support (Pearlin and Johnson 1977; Weinraub and Wolf 1983).

In addition, analyses in this chapter showed that the distribution of average levels of social support across neighbourhoods was also weakly associated with neighbourhood structural conditions measured by the derived Census variables socioeconomic disadvantage, residential mobility, and ethnic heterogeneity. Average neighbourhood social support levels were lowest where neighbourhood structural disadvantage was high. This result suggests that social stressors, which may be more prevalent in disadvantaged neighbourhood settings, may also be associated with lower levels of perceived social support—a finding that is consistent with Wilson's (1987) isolation theory in which he posits that the geographic concentration of socioeconomic disadvantage is linked to a reduction in the usefulness of social networks available in those places. Nonetheless, the limited statistical differences found in this chapter suggest that different levels of social support may exist across all family SES levels and neighbourhood types. Indeed, ethnographic studies of ethnic enclaves in the U.S. have demonstrated that very high levels of support can be available within groups that are generally the most isolated from the larger community (Small 2002; Stack 1974). Thus, socioeconomic levels do not tell the whole story with respect to social support.

2. Social support was more strongly associated with discipline effectiveness and parental investment in disadvantaged neighbourhoods than in advantaged neighbourhoods

Multilevel results indicated that despite the slight tendency for Winnipeg parents in more structurally disadvantaged neighbourhoods to report lower levels of social support, when support was available it was more strongly associated with positive parenting practices in the most disadvantaged neighbourhoods. Nonetheless, as has been demonstrated throughout this study, the results differed across the parenting practices and neighbourhood conditions.

Significant results were reported for discipline effectiveness and parental investment. In the former case, after accounting for other factors, the level of residential mobility in neighbourhoods was found to moderate the relationship between social support and discipline effectiveness such that the strength of the relationship between social support and parenting was greatest in neighbourhoods with the highest levels of residential mobility. In the latter case, the level of socioeconomic disadvantage was found to moderate the relationship between social support and parental investment such that the strength of the relationship between social support and parenting was greatest in neighbourhoods with the greatest levels socioeconomic disadvantage.

These findings are consistent with the stress-buffering hypothesis, and coincide with research suggesting that access to social support may be more strongly and positively associated with discipline effectiveness and parental investment in disadvantaged neighbourhoods because support is most effective as a buffer against the

strain resulting from the most stressful environments (Leventhal and Brooks-Gunn 2000, 324; Belle 1983; Cohen and Wills' 1985; Elder et al. 1995; Fram 2003; Garbarino and Sherman 1980; Klebanov, Brooks-Gunn and Duncan 1994; McLoyd 1990; Stack 1974).

The stronger association between perceived access to support and parenting in more disadvantaged neighbourhoods could also be explained by what Hashima and Amato (1994) have argued are differences in the importance of different types of social support for advantaged and disadvantaged parents. Specifically, they found that *received support*, defined as the actual reception of various types of tangible support such as assistance with childcare, was equally beneficial across socioeconomic levels and settings. However, *perceived* social support, the type of support approximated in this study and defined generally as the perception that social support would be available in the event of a crisis, was most beneficial to parents with the lowest socioeconomic means. They argued that a possible reason for this finding was that parents in disadvantaged circumstances are particularly vulnerable in crises situations and when problems arise these parents' perceptions of the unavailability of support elevate their stress-levels, which subsequently influences their parenting behaviour (1994, 400).

3. Social support has a positive influence on parental involvement independent of the neighbourhood structural conditions

There were no statistically significant cross-level interactions between neighbourhood structural variables and social support in the parental involvement models in this chapter. This finding is consistent with the main-effects hypothesis

(Cohen and Wills 1985) that regardless of the neighbourhood conditions, social support has a positive influence on individual well-being. In this case, parental social support and neighbourhood conditions appear to have independent effects on variation in the involvement score. Notably, social support was positively associated with parental involvement regardless of the level of structural disadvantage.

4. There was some evidence that neighbourhood social cohesion diminished the buffering effect of social support for parental discipline effectiveness in disadvantaged neighbourhoods

As described in chapter 2, the social disorganization perspective hypothesizes an association between the level of structural disadvantage in a neighbourhood and its social processes (Kornhauser 1978; Sampson and Groves 1989, Shaw and McKay 1942/1969). Specifically, from this perspective it could be expected that the quality and extent of community social resources will mediate the influence of neighbourhood disadvantage on parenting behaviours. In addition to the tests of the direct relationship between neighbourhood conditions and parenting, in this chapter I conducted further tests to assess whether neighbourhood social cohesion might mediate the effect of neighbourhood structural disadvantage on the social support/parenting practice relationship. Results indicated that social cohesion only partially mediated the effect of residential mobility on the social support/discipline effectiveness relationship, reducing its effect by about one-third. Thus, after accounting for neighbourhood social cohesion, the buffering effect of parents' social support in highly mobile neighbourhoods was

reduced. This finding lends some support to the proposition that highly functioning neighbourhood social processes may offset the influence of other forms of structural disadvantage in those places; however, though the results in this case were statistically significant, they were not large in substantive terms.

5. After accounting for individual controls, parents' social support was associated with higher children's verbal ability scores

Results showed that parents' social support was positively associated with children's verbal ability scores and negatively associated with children's behaviour problem scores. However, this relationship did not hold for children's problem behaviours after the addition of individual level controls, and this was particularly the case for parental discipline effectiveness. This result is consistent with research showing a strong relationship between this type of parenting (e.g., authoritative parenting styles) and lower levels of problem behaviour among children (Baumrind 1967; 1970; Chao and Willms 2002, Miller, Jenkins and Keating 2002).

6. Parents' social support was least strongly associated with children's verbal abilities in neighbourhoods that were most disadvantaged

Multilevel tests revealed that the relationship between parents' social support and children's verbal ability also varied significantly across neighbourhoods, suggesting that parents' social support was more important to children's verbal abilities in some neighbourhood environments than in others. About one-half of the variation between

parents' social support and children's verbal ability was explained by neighbourhood structural variables, but primarily by the contribution of neighbourhood socioeconomic disadvantage. Notably, however, the effect of socioeconomic disadvantage on the social support/verbal ability relationship was consistent with the attenuation hypothesis (Ceballo and McLoyd 2002). Thus, contrary to the pattern observed when parenting was the dependent variable, when child verbal ability was the dependent variable higher levels of neighbourhood disadvantage *diminished* the strength of the relationship between social support and children's verbal abilities, net of individual-level controls.

The attenuation hypothesis was also supported in additional tests of the moderating effect of social support on parenting practices in high and low socioeconomic disadvantage neighbourhoods. In this case, in more disadvantaged neighbourhoods the positive influence of social support on the parental investment/child verbal ability relationship was lower. Similarly, in more disadvantaged neighbourhoods the positive influence of social support on the parental involvement/child verbal ability relationship was lower.

Ceballo and McLoyd (2002) and other researchers (Belle 1983; Brodsky 1999; Dressler 1985) have suggested that one reason that social support may lose its positive influence in disadvantaged environments is that the available support resources in these places may themselves be sources of stress since they may require reciprocal actions that may be draining or stressful. Based on qualitative evidence, Belle (1983; Eccles et al. 1993; Furstenberg et al. 1999) has observed that, frequently, successful parents residing

in disadvantaged and potentially dangerous milieus choose to intentionally isolate themselves and their children from local social networks.

To attempt to understand the seemingly contradictory results for parenting and children's outcomes in this study several points should be considered. First, neighbourhood affluence may have important independent affects on children's achievement outcomes. While this study has demonstrated that both parenting and parents' level of social support have positive effects on children's verbal abilities, evidence also suggests that the association between this child achievement outcome and neighbourhood socioeconomic *advantage* is strong. Along this line, numerous studies have documented the independent effects of neighbourhood affluence (measured in a variety of ways) on children's verbal abilities over and above family and parent characteristics including social support (for a review see Leventhal and Brooks-Gunn 2000). This result has also been verified using the NLSCY national sample of Canadian children (Kohen et al. 2002; Kohen, Hertzman and Brooks-Gunn 1999). Possible reasons for the protective effect of affluent neighbourhoods on children's verbal abilities may involve the availability of higher quality child-centred resources in these places (Leventhal and Brooks-Gunn 2000), and/or the greater likelihood for parents in these more affluent places to engage more in activities that promote children's achievement (Klebanov et al. 1997).

Chapter 7

Conclusion

This study contributes to the body of quantitative research evidence suggesting that the structural and social conditions of neighbourhoods influence the behaviours and outcomes of individuals. The results have implications both for research on parenting and the role of neighbourhood conditions and social support, and also for current policy and program debates about sustainable communities in a period of increasing concentrated urban poverty in Canada. In this concluding chapter, before discussing some key policy contributions of the dissertation, I begin with a brief précis of the major themes and research implications in this examination of parenting in Winnipeg neighbourhoods. Finally, quantitative investigations of the effect of neighbourhoods on individuals are not without challenges. In view of this, the chapter concludes with a discussion of some of the limitations of the study, as well as the associated opportunities for future work.

1.0 A précis of the study: Themes and research implications

Bronfenbrenner (1979) argued that it is necessary to view children's development from within an ecological paradigm that considers all of the contexts in which they are situated. To fully comprehend parenting practices in relation to

children's outcomes also requires an understanding of parents' interactions with external contexts. The findings in this study call attention to the need to place research on parenting practices, and ultimately children's outcomes, within an ecological framework.

At the broadest level, the objective of this study has been to comment on the ways that parents residing in disadvantaged neighbourhood contexts might be influenced by the structural and social arrangements in those places. The specific goals of the study were to explore whether and how the parents of young children were affected by the neighbourhood contexts in which they live, to examine whether and how disadvantaged neighbourhood contexts influence the relationship between parents' access to support and their parenting strategies, and finally, to conduct these tests within the Canadian urban context. To undertake this study, I employed a multilevel analytical strategy based on quantitative survey data from a representative sample of children and their parents within the central area of Winnipeg, Manitoba.

The study was situated within an ecological theoretical tradition that considers the influences of *places* over and above the influences of individual characteristics (e.g., Kornhauser 1978; Sampson, Morenoff and Earls 1999; Wilson 1987). A renewal of interest in ecological theories coinciding with increases in concentrated urban poverty and other forms of disadvantage in Canada and the United States has generated a large body of "neighbourhood effects" research and policy attention within the past two decades. Much of this work, outlined in Chapter 1, has been concerned with the direct influence of harsh neighbourhood conditions on children and youth. Though the results

from this body of work are not consistent, findings have generally suggested that neighbourhood environments play some role in the variation in children's outcomes across urban areas. The mechanisms through which neighbourhoods may influence children's outcomes have been less frequently considered. In particular, the intermediary role of parents in conditioning neighbourhood contexts for their children has been relatively understudied.

Current theories of parenting vary in the extent to which they consider practices focused within the home (typically involving parent-child interaction), and those focused on the environment beyond the home (involving parents' direct interaction with communities and or the encouragement or restriction of their children's interaction with communities). An argument was made in Chapter 2 that a broader view of parenting encompassing both within-family processes and out-of-home family management strategies, such as the one proposed by Furstenberg et al. (1999), needed to be considered in order to understand the possible influence of neighbourhood conditions on children. Available evidence also suggested that it is important to account for the way that neighbourhood disadvantage may condition the availability and utility of parents social resources, i.e., social support, and neighbourhood social process, i.e., social capital and collective efficacy.

To address these themes, I proposed an ecological model of parenting in which parenting practices were presumed to be linked to the individual- and family-level characteristics of parents as well as to the local community context in which families resided. I proposed that the relationships between individual and contextual factors,

parenting practices and ultimately child outcomes could be explained from a social disorganization perspective. Thus, neighbourhood structural disadvantage was expected to have a direct association with variation in parenting practices over and above individual-level characteristics, but this relationship was expected to be mediated by the level of neighbourhood social cohesion (Sampson, Raudenbush and Earls 1997). In addition, neighbourhood structural disadvantage was expected to moderate the relationship between parents' social support and their parenting practices. I introduced three hypotheses with respect to the outcome of the interaction between neighbourhood disadvantage and the social support/parenting behaviour relationship: the stress-buffering hypothesis, the attenuation hypothesis and the main-effects hypothesis (Ceballo and McLoyd 2002; Cohen and Wills 1985).

The study assessed three different parenting practices that approximated those used by Furstenberg et al. (1999; Eccles et al. 1993) and reflected different points on a continuum of within-family processes to community-oriented family management strategies. The parenting scales included discipline effectiveness—a measure most closely related to what Furstenberg et al. refer to as “traditional in-home family processes” (1999, 81) and Baumrind's (1989) category of authoritative parenting; parental investment—a measure of parental strategies aimed at promoting children's skills and exposing them to positive community opportunities (1999, 118); and parental involvement—a measure of parents' participation in different aspects of the environment beyond the household such as involvement with community organizations

and activities, involvement in the child's school, interaction with neighbours, use of child-centred resources and advice-seeking behaviour.

A number of broad implications concerning research on parents, families and neighbourhoods can be drawn from the results presented in this study.

Considering parenting practices beyond within-family processes

The findings underline the importance of considering a range of parenting behaviours in order to more fully appreciate the connection between what parents do and their children's outcomes. This requires an examination of parenting practices beyond within-family processes focussed on the parent-child dyad such as those described in Baumrind's (1967; 1970) typology of authoritative, authoritarian and permissive parenting styles, and suggests that what parents do in relation to the external environment can have important implications for some children's outcomes (Burton and Jarrett 2000; Darling and Steinberg 1993; Furstenberg et al. 1999; Jarrett 1995; Leventhal and Brooks-Gunn 2000).

The results in this study were consistent with those presented by Furstenberg et al. (1999, 221) indicating that no single parenting strategy was consistently positively associated with both behavioural and achievement outcomes for children. Rather, net of individual controls, higher levels of discipline effectiveness, which approximated within-family processes, mattered most for lower levels of children's problem behaviours; while higher levels of both parental involvement and parental investment, which were more oriented toward managing the environment beyond the home, mattered most for higher children's verbal abilities scores.

While quantitative research on Canadian children has frequently observed the connection between traditional within-family parenting strategies and children's behavioural and achievement outcomes (e.g., Chao and Willms 2002; Miller, Jenkins and Keating 2002); the association between children's outcomes and family management practices oriented to the local community has not been assessed for samples of Canadian children. However, the results in this study suggest that it may be informative to assess a broader range of the parental practices.

Neighbourhoods and parenting practices

The findings presented in the dissertation were also consistent with numerous neighbourhood effects studies of outcomes and behaviours indicating that individuals' circumstances play a much greater role in explaining variation in their outcomes and behaviours than do neighbourhood conditions (Sampson, Morenoff and Gannon-Rowley 2002). Nonetheless, there was some evidence presented here that average parenting practices varied significantly across neighbourhoods in Winnipeg. The extent of this variation was similar to that reported in other multilevel studies of parenting (Furstenberg et al. 1999), as well as in studies of other human behaviours (Leventhal and Brooks-Gunn 2000; Sampson, Morenoff and Gannon-Rowley 2002).

Consistent with expectations, a large part of the existing neighbourhood variation in parenting practices in this study could be explained by different structural features of the Winnipeg neighbourhoods, over and above individual controls. The connection between aspects of neighbourhood structural disadvantage and parenting outcomes lends further support to past research observing links between neighbourhood poverty and

parenting (e.g., Briggs 1998; Cantillon 2006; Caughy, Brodsky, O'Campo, and Aronson 2001; Gorman-Smith, Tolan, and Henry 2000; Furstenberg et al. 1999; Klebanov, Brooks-Gunn and Duncan 1994; McLoyd 1990; Simons et al. 2002). There was also some evidence that neighbourhood structural disadvantage was linked to the relationship between parenting and children's outcomes. In particular, the relationship between family management practices, such as parental involvement, and children's verbal achievement outcomes varied significantly across neighbourhoods, and this variation was partially accounted for by the level of socioeconomic disadvantage in the neighbourhood. Although parental involvement was positively associated with verbal ability in both low- and high-disadvantage neighbourhoods, the benefits of parents' involvement for children's achievement in this area were strongest when the neighbourhood conditions were more advantaged.

The observation in this study that neighbourhood structural variables explain much of the neighbourhood variation in parenting suggests that the level of poverty is not unimportant in assessing ways of dealing with parenting and children's outcomes. Overall, Duncan and Raudenbush (2001) have argued that neighbourhood variation in behaviours and outcomes, similar to the range found in this study, are not trivial since they can reflect important differences between neighbourhoods that have been demonstrated to benefit from policy and program interventions. It is evident, therefore, that continued examination of the influence of context can make a significant contribution to the types of policy/program interventions that are developed in future.

Social cohesion and parenting practices

From the social disorganization perspective, the quality of neighbourhood social processes, such as neighbourhood social cohesion, was expected to mediate the negative influence of neighbourhood structural disadvantage on individual outcomes, and particularly violent behaviour (Sampson, Raudenbush and Earls 1997). Past research has also suggested that neighbourhood social cohesion may be associated with lower levels of children's problem behaviours (Aneshensel and Sucoff 1996; Kohen et al. 2002). The results in this study demonstrated that the mediating effect of social cohesion may also play some role in variation in parenting behaviours across neighbourhoods; however, this effect was not strong.

The results, however, were not consistent in that social cohesion appeared to have differing effects on structural features of neighbourhoods with respect to the parenting practices examined in this study. For both within-family oriented parenting variables, the effect of socioeconomic disadvantage and residential mobility was rendered insignificant after the addition of neighbourhood social cohesion; however, with respect to the externally-oriented parental involvement variable the effect of ethnic heterogeneity remained after the addition of social cohesion.

The relatively weak mediating effect of social cohesion in this study may be due to the fact that the measure of social cohesion was based on parents' assessments, and consequently may have been confounded with the parents' assessments of other variables (Kohen et al. 2002). Thus, improved measures of neighbourhood social

processes from an independent source are required before adequate assessments of the mediating force of social cohesion can be made.

Social support, parenting and neighbourhood conditions

On the surface, it may be assumed that social support would always have a positive effect on parenting and mitigate adverse community conditions. Similarly, it would seem logical to assume that greater parental social support would be associated with more positive child outcomes since supported parents would have a greater capacity to use effective parenting strategies. The findings in this study indicated that parents' own social resources, measured by their perceived access to social support, were associated with higher scores for each of the parenting practices; however, the results with respect to the link between social support, children's outcomes and neighbourhood conditions were not consistent.

Multilevel results showed that the relationship between social support and parenting was at times influenced by the level of structural disadvantage in the neighbourhood. Furthermore, it was demonstrated that the moderating effect of neighbourhood structural disadvantage, measured by cross-level interactions between neighbourhood disadvantage and social support, varied across parenting types and was also different when the outcome being considered was children's verbal ability.

In fact, the results for social support were at least partially consistent with three different hypotheses, depending on the structural conditions and parenting practices being considered. Overall, these results seem to indicate that social support affects within-family oriented parenting practices such as discipline effectiveness and

investment differently than community-oriented family management practices. Results for parenting practices associated with within-family processes were consistent with the stress-buffering hypothesis suggesting that support is most effective as a buffer against the strain of experiencing stress (Leventhal and Brooks-Gunn 2000, 324; Belle 1983; Cohen and Wills' 1985; Elder et al. 1995; Fram 2003; Garbarino and Sherman 1980; Klebanov, Brooks-Gunn and Duncan 1994; McLoyd 1990; Stack 1974). In this case, access to social support was more strongly associated with higher levels of discipline effectiveness and parental investment in disadvantaged neighbourhoods than in their more affluent counterparts. In contrast, results for externally-oriented family management practices, specifically parental involvement, were consistent with the main-effects hypothesis since social support was associated with higher scores in this form of parenting irrespective of the neighbourhood structural conditions.

There was also some indication that the relationship between parents' social support and children's verbal ability varied significantly across neighbourhoods, suggesting that parents' social support was more important to greater children's verbal abilities in some neighbourhood environments than in others. Contrary to the findings for parenting practices, however, higher levels of neighbourhood disadvantage diminished the strength of the relationship between social support and children's verbal abilities, net of individual-level controls. This inverse relationship was consistent with the attenuation hypothesis.

Overall, these results indicate that there is a complex relationship among neighbourhood conditions, support, parenting and child outcomes. Some researchers

have implied that social support becomes less useful in local environments that are disadvantaged and consequently highly stressful, since the available social networks in these places may themselves be accompanied by costs that make them less desirable (Ceballo and McLoyd 2002; Belle 1983; Brodsky 1999; Dressler 1985). However, the findings in this study suggest that to fully understand these complex relationships it is necessary to differentiate between the types of parenting practices being considered, as well as to consider the ultimate influences on children. Moreover, more work is needed to better understand the meaning and function of social support within the family context.

2.0 Applications: Implications for policy and programs

There is a large body of research evidence suggesting that “neighbourhoods matter” and perhaps most importantly for the effect that disadvantaged neighbourhood environments may have on children and their longer term consequences (Jargowsky 1997). However, there is no consensus regarding the precise manner and extent to which neighbourhoods matter for children, nor about the most effective strategies to deal with possible negative effects. The question of neighbourhood effects, particularly in relation to children, has increasingly been of concern for the creation of policy and programs in Canada in recent years (Beauvais and Jenson 2003). One issue concerning the choice of policies and programs is the extent to which interventions should be universally applied or targeted (Séguin and Divay 2002; Willms 2002). The former

include programs applied generally to all citizens, for example, education, health care, or daycare; and the latter include those targeted to particular groups including people spatially concentrated in particular neighbourhoods. In this section I briefly consider what this study's findings with respect to parenting and neighbourhood effects can contribute to this debate.

To begin with, it must be reiterated that the present policy, program and research contexts with respect to neighbourhoods and individual outcomes are situated within a period of increased concern about the Canadian urban environment driven to a large degree by an observed increase in urban poverty (Canada 2002). Thus, in Canada there has been a documented rise in the proportion of people living in poverty since the 1970s or early 1980s which has been most evident in Canadian cities. Importantly, the degree of geographic concentration of this urban population has also increased in recent years, which means that disparity between the average incomes of the poorest and wealthiest neighbourhoods in this country is also increasing (Broadway 1992; Hajnal, 1995; Hatfield 1997; Kazemipur and Halli 2000; Lee 2000; MacLachlan and Sawada 1997; Myles, Picot and Pyper 2000; Ross, Houle, Dunn and Aye 2004).

While research does not suggest that residents of the lowest-income urban neighbourhoods uniformly experience problems (Séguin and Divay 2002; Willms 2002, 100), there is some evidence to suggest that problems seem to be clustered together within the areas of concentrated poverty. In particular with respect to children, studies have reported correlations between high concentrations of neighbourhood disadvantage in Canadian cities and high neighbourhood rates of problem outcomes for resident

children and youth, including diminished health, behaviour and cognitive ability (Boyle and Lipman 1998; Curtis, Dooley and Phipps 2004; Kohen, Hertzman and Brooks-Gunn 1999; Law and Willms 2002; Ross and Roberts 1999). Put another way, a disproportionate share of child and youth behavioural and other problems appears to be concentrated within the most structurally disadvantaged neighbourhoods.

It has been argued in this study that parents play a pivotal role in shaping the local neighbourhood context for their children, and that consequently it is important to understand what influences parents' behaviours with respect to their children. In this regard, the findings have coincided with the bulk of neighbourhood effects studies in demonstrating that parents' individual circumstances explain a greater proportion of variation in their parenting practices than do the neighbourhood conditions in which they live. The findings also suggested that what parents do with respect to their children differs significantly across neighbourhood contexts, and a relatively large proportion of this variation is explained by the conditions of structural disadvantage experienced in those neighbourhoods.

Nonetheless, the findings do not provide strong support for the idea of geographically targeted programs. This point is consistent with Willms' (2002) argument with respect to children's outcomes, that intervention strategies aimed solely at poor families or neighbourhoods will not substantially reduce children's risk for diminished outcomes. In addition, Séguin and Divay (2002) have argued that geographically targeted programs can also have the unintended consequences of stigmatizing local areas, increasing the concentration of poverty by serving as a draw for

the poorest populations and a detractor for middle class populations, and excluding poor households that live outside of the targeted area. However, they state that although “it is...more important to intervene at the individual and family levels then at the neighbourhood level...the latter aspects should not be ignored” (Séguin and Divay 2002, 17). Examples of well implemented targeted programs include Manitoba’s *Neighbourhood’s Alive* and the City of Montreal’s *Program of intervention in areas of decline*. In both cases, programs aim to reduce poverty and promote social integration through involvement of multiple layers of government, local community groups and business and local residents.

Thus, when targeted neighbourhood level programs are being considered, it is important that these not be viewed as a panacea or implemented in every disadvantaged community. Rather targeted programs and policies should be introduced in each area on the basis of the area’s needs and capability to take advantage of the program benefits. The combination of generalized universal interventions aimed at individuals and families along with specific targeted programs relevant to a particular neighbourhood may prove to be the most effective means to assist parents and, in the end, children. The ultimate goal of these interventions should be to “raise and level the bar” (Willms 2003, 8), so that levels of well-being are improved for citizens.

3.0 Limitations and future directions

There were a number of methodological limitations in this study that warrant some caution in interpreting and generalizing the results. In many cases, these limitations point to next steps with respect to future research on parenting within the neighbourhood context. To begin with, the NLSCY community component provided a good representation of the target population of children and a reasonable range of neighbourhood types within Winnipeg's inner urban area (though wealthier neighbourhoods were underrepresented since the Winnipeg outer suburbs were excluded). However, since the survey was designed for purposes other than neighbourhood comparisons, the sample was not optimal for performing multilevel analyses. The relatively small sample size and number of neighbourhoods contributed to a loss of analytical power in this study. The net result of the particular sample size and neighbourhood distribution in this study was likely an underestimation of neighbourhood effects (Duncan, Connell and Klebanov 1997).

Future quantitative tests of parental behaviours using Canadian data designed purposefully to accommodate multilevel studies need to be carried out using either multi-site urban surveys or national surveys in Canada. A rising interest in the potential importance of the Canadian urban neighbourhood context with respect to children's outcomes (Beauvais and Jenson 2003), crime and delinquency (Fitzgerald et al. 2004; Savoie et al. 2006; Wallace et al. 2006), and the influence of poverty concentration

(Frenette et al. 2004; Hatfield 1997) will ensure that future survey designs increasingly account for the complexities of multilevel analyses.

A second limitation in this study concerned the availability of information about the neighbourhood context in Winnipeg. The neighbourhood context was primarily depicted through variables derived from the Census of population, as is most commonly the case in quantitative multilevel research designs (Leventhal and Brooks-Gunn 2000). The study results indicated that the neighbourhood-level variables explained relatively small amounts of the variation in parenting practices and children's outcomes. It is reasonable to expect that a greater proportion of the variation could be explained through a more complete list of variables measuring neighbourhood social, economic and institutional resources, for example, neighbourhood information about local crime rates, health status, city-zoning and particularly the physical location of schools, parks and services for children. In Canadian urban contexts, some of this information is captured for administrative purposes by cities, police agencies, school boards or health services. While it is collected for purposes other than comparing neighbourhood contexts, work has begun in some fields to collect or use existing geographic identifiers that would permit the disaggregation of the information to the neighbourhood- or local area-levels (Fitzgerald et al. 2004; Savoie et al. 2006; Wallace et al. 2006). The increasing availability of diverse data sources will potentially provide a more complete image of the Canadian neighbourhood context in quantitative studies of neighbourhood effects.

A third limitation in this study is related to the survey design. Causal direction (in non-experimental data) requires information about time, since causes must temporally precede their effects. The NLSCY community component study of Winnipeg neighbourhoods was a cross-sectional design surveying a large sample of kindergarten-aged children once in 2000. Consequently, without information about changes in the sample over time it was not possible to make claims of *causal* relationships between the neighbourhood- and individual-level factors and parenting outcomes in this study. While existing longitudinal data sets in Canada have not been explicitly designed to accommodate neighbourhood effects research with adequate sample sizes clustered within neighbourhoods, improved data collection in this regard would permit inferences to be made about causal relationships between neighbourhood conditions, parenting practices and ultimately children's outcomes.

A fourth limitation relates to the definition of "neighbourhood" used in the study. As was discussed in Chapter 3, there are numerous ways to understand, describe and delineate the concept of neighbourhood. I have used a geographic definition of neighbourhood based on Winnipeg's Neighbourhood Characterization Areas. The advantage of this approach over commonly used Statistics Canada census tract boundaries was that it reflected neighbourhood boundaries tied to local definitions, a recognized history, and demographic patterns and services. However, it must be acknowledged that individuals are situated within multiple contexts, and consequently, influences are clearly not limited to those emanating from the local geographic area. Sampson, Morenoff, and Gannon-Rowley (2002) have commented that local areas are

nested within larger and more complex community settings. Future work should also account for the interrelationships between the multiple contexts that may influence parents.

Finally, this project is a preliminary step within a broader research agenda concerned with understanding the role of neighbourhood environments with respect to parenting and children. The quantitative analyses presented here can only provide a partial representation of the potential influences of the Canadian urban environment on parents, children and families based on average experiences. Clearly, individuals can experience social and structural contexts in a multitude of different ways. Additional qualitative and small-scale research on parenting such as the ethnographic work already carried out in American cities (Belle 1983; Eccles et al. 1993; Jarrett 1999) will add an important element to the existing research in Canada by enhancing understanding of the meanings that parents' ascribe to their child-rearing practices and the neighbourhood conditions in which they live.

References

- Achenbach, Thomas M., and Craig S. Edelbrock. 1981. Behavioural problems and competencies reported by parents of normal and disturbed children aged four through sixteen. *Monographs for the Society for Research in Child Development* 46(1, serial no.188).
- Almgren, Gunnar. 2005. The ecological context of interpersonal violence: From culture to collective efficacy. *Journal of Interpersonal Violence* 20: 218-224.
- Amato, Paul R., and Frieda Fowler. 2002. Parenting practices, child adjustment, and family diversity. *Journal of Marriage and Family* 64: 703-716.
- Ambert, Anne-Marie. 1992. *The effect of children on parents*. New York: Haworth Press.
- Anderson, Elijah 1990. *Streetwise: Race, class, and change in an urban community*. Chicago: University of Chicago Press.
- Aneshensel, Carol S., and Clea A. Sucoff. 1996. The neighborhood context of adolescent mental health. *Journal of Health and Social Behavior* 37, 293-310.
- Bandura, Albert. 1986. *Social foundations of thought and action: A social cognitive*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, Albert. 1997. *Self-efficacy: The exercise of control*. New York: W.H. Freeman.
- Bandura, Albert. 2000. Exercise of human agency through collective efficacy. *Current Directions in Psychological Science* 9: 75-78.
- Baron, Reuben M., and David A. Kenny. 1986. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology* 51: 1173-1182.
- Baumrind, Diana. 1967. Child care practices anteceding three patterns of preschool behavior. *Genetic Psychology Monograph* 75: 43-88.
- Baumrind, Diana. 1971. Current patterns of parental authority. *Developmental Psychology Monograph* (Part 2, 4(1)): 1-103.
- Baumrind, Diana. 1978. Parental disciplinary patterns and social competence in children. *Youth and Society* 9: 238-276.
- Baumrind, Diana. 1983. Rejoinder to Lewis's reinterpretation of parental firm control effects: Are authoritative families really harmonious? *Psychological Bulletin* 94: 132-142.
- Baumrind, Diana. 1989. Rearing competent children. In *Child development today and tomorrow*, ed. W. Damon, 349-378. San Francisco: Jossey-Bass.
- Baumrind, Diana. 1991. The influence of parenting style on adolescent competence and substance use. *The Journal of Early Adolescence* 11: 56-95

- Beauvais, Caroline, and Jane Jenson. 2003. *The well-being of children: Are there "neighbourhood effects"? Ottawa: Canadian Policy Research Networks (Discussion Paper F/31).*
- Belle, Deborah E. 1983. The impact of poverty on social networks and supports. *Marriage and Family Review* 5: 89–103.
- Belsky, Jay. 1984. The determinants of parenting: A process model. *Child Development* 55: 83–96.
- Benin, Mary, and Verna M. Keith. 1995. The social support of employed African American and Anglo mothers. *Journal of Family Issues* 16: 275–297.
- Bourdieu, Pierre. 1986. The forms of capital. In *Handbook of theory and research for the sociology of education*, ed. John Richardson, 241–258. New York: Greenwood Press.
- Boyle, Michael H., and Ellen L. Lipman. 1998. *Do places matter? A multilevel analysis of geographic variations in child behaviour in Canada*. Ottawa: Applied Research Branch, Strategic Policy, Human Resources Development Canada (Working Paper Series W-98-16E).
- Briggs, Xavier de Souza. 1998. Brown kids in white suburbs: Housing mobility and the many faces of social capital. *Housing Policy Debate* 9: 177–221.
- Broadway, Michael J. 1992. Differences in inner-city deprivation: An analysis of seven Canadian cities. *Canadian Geographer* 36: 189–196.
- Brodsky, Anne E. 1999. "Making it": the components and process of resilience among urban, African-American, single mothers. *American Journal of Orthopsychiatry* 69:148–60.
- Bronfenbrenner, Urie. 1979. *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Browne, W. J., S. V. Subramanian, K. Jones, and H. Goldstein. 2005. Variance partitioning in multilevel logistic models that exhibit over-dispersion. *Journal of the Royal Statistical Society: Series A (Statistics in Society)* 168: 599–613.
- Browning, Christopher R. 2002. The span of collective efficacy: Extending social disorganization theory to partner violence. *Journal of Marriage and Family* 64: 833–50.
- Bursik, Robert J. 1988. Social disorganization and theories of crime and delinquency: Problems and prospects. *Criminology* 26: 519–51.
- Bursik, Robert J., and Harold G. Grasmick. 1993. Economic deprivation and neighborhood crime rates, 1960–1980. *Law and Society Review* 27: 263–278.
- Burton, Linda M. 1991. Caring for children: Drug shifts and impact on families. *American Enterprise* 2: 34–37.

- Burton, Linda M., and Robin L. Jarrett. 2000. In the mix, yet on the margins: The place of families in urban neighborhood and child development research. *Journal of Marriage and the Family* 62: 444-465.
- Campbell, Karen E., Peter V. Marsden, and Jeanne S. Hurlbert. 1986. Social resources and socioeconomic status. *Social Networks* 8: 97-117.
- Canada, Prime Minister's Caucus Task Force on Urban Issues (Sgro report). 2002. Canada's Urban Strategy: A Vision for the 21st Century. Chair: Judy Sgro, MP. Available at <http://www.liberal.parl.gc.ca/urb> accessed 16 September 2005.
- Cantillon, Dan. 2006. Community social organization, parents and peers as mediators, of perceived neighborhood block characteristics on delinquent and prosocial activities. *American Journal of Community Psychology* 37: 111-127.
- Caughy, Margaret O'Brien, Anne E. Brodsky, Patricia J. O'Campo, and Robert Aronson. 2001. Perceptions of parenting: Individual differences and the effect of community. *American Journal of Community Psychology* 29: 679-699.
- Ceballo, Rosario, and Vonnie C. McLoyd. 2002. Social support and parenting in poor, dangerous neighborhoods. *Child Development* 73: 1310-1321.
- Chao, Ruth K. 1994. Beyond parental control and authoritarian parenting style: Understanding Chinese parenting through the cultural notion of training. *Child Development* 65: 1111-1119.
- Chao, Ruth K., and J. Douglas Willms. 2002. Parenting and children's behaviour problems. In *Vulnerable children: Findings from the National Longitudinal Survey of Children and Youth*, ed. J. Douglas Willms, 149-165. Edmonton: University of Alberta Press.
- Cleveland, H. Harrington. 2003. Disadvantaged neighborhoods and adolescent aggression: Behavioral genetic evidence of contextual effects. *Journal of Research on Adolescence* 13: 211-238.
- Cohen, Sheldon, and Thomas A. Wills. 1985. Stress, social support, and the buffering hypothesis. *Psychological Bulletin* 98: 310-57.
- Coleman, James S., and Thomas Hoffer. 1987. *Public and private high schools: The impact of communities*. New York: Basic Books.
- Conger, Rand D., Kimberly J. Conger, Glen H. Elder, Fred O. Lorenz, Ronald L. Simons, and Les B. Whiteck. 1993a. Family economic stress and adjustment of early adolescent girls. *Development Psychology* 29: 206-19.
- Conger, Rand D., Kimberly J. Conger, Glen H. Elder, Fred O. Lorenz, Ronald L. Simons, and Les B. Whiteck. 1993b. Family process model of economic hardship and adjustment of early adolescent boys. *Child Development* 63: 526-41.

- Coulton, Claudia J., Jill E. Korbin, and Marilyn Su. 1996. Measuring neighborhood context for young children in an urban area. *American Journal of Community Psychology* 24: 5-32.
- Coulton, Claudia J., Jill E. Korbin, and Marilyn Su. 1999. Neighborhoods and child maltreatment: A multilevel study. *Child Abuse and Neglect* 23: 1019-1040.
- Coulton, Claudia J., Jill E. Korbin, Tsui Chan, and Marilyn Su. 2001. Mapping residents' perceptions of neighborhood boundaries: A methodological note. *American Journal of Community Psychology* 29: 371-383 .
- Crnic, Keith A., Mark T. Greenberg, Nancy M. Robinson, and Arlene S. Ragozin. 1984. Maternal stress and social support: Effects on the mother-infant relationship from birth to 18 months. *American Journal of Orthopsychiatry* 54: 224-235.
- Currie, Elliott. 1985. *Confronting crime: An American challenge*. New York: Pantheon Books.
- Curtis, Lori, Martin Dooley, and Shelley Phipps. 2004. Child well-being and neighbourhood quality: Evidence from the Canadian National Longitudinal Survey of Children and Youth. *Social Science and Medicine* 58: 1917-1927.
- Cutrona, Carolyn E., and Daniel W. Russell. 1987. The provisions of social relationships and adaptation to stress. In *Advances in personal relationships*, eds. W.H. Jones and D. Perlman, 37-67. Greenwich, CN: JAI Press.
- Cutrona, Carolyn E., and Daniel W. Russell. 1990. Types of social support and specific stress: Toward a theory of optimal matching. In *Social support: An interactional view*, eds. B. R. Sarason, I. G. Sarason, and G. R. Pierce, 319-366. New York: Wiley.
- Darling, Nancy, and Laurence Steinberg. 1993. Parenting style as context: An integrative model. *Psychological Bulletin* 113: 487-496.
- Deater-Deckard, Kirby, Kenneth A. Dodge, John E. Bates, and Gregory S. Petit. 1996. Physical discipline among African-American and European-American mothers: Links to children's externalizing behaviours. *Developmental Psychology* 32: 1065-1072.
- DeKeseredy, Walter S., Shahid Alvi, Martin D Schwartz and Barbara Perry. 1999. Violence against and the harassment of women in Canadian public housing: An exploratory study. *The Canadian Review of Sociology and Anthropology* 36: 499-516.
- Demo, David H., and Martha J. Cox. 2000. Families with young children: A review of research in the 1990s. *Journal of Marriage and Family* 62: 876-895.
- Demos, John. 1986. *Past, present, and personal*. New York: Oxford University Press.

- Diez Roux, Ana V. 2004. Estimating neighborhood health effects: The challenges of causal inference in a complex world. *Social Science and Medicine* 58: 1953-1960.
- Downey, Geraldine, and J.C. Coyne. 1990. Children of depressed parents: An integrative review. *Psychological Bulletin* 108: 50-76.
- Dressler, William W. 1985. Extended family relationships, social support, and mental health in a southern black community. *Journal of Health and Social Behavior* 26: 39-48.
- Duncan, Greg J., and Stephen W. Raudenbush. 1999. Assessing the effects of context in studies of child and youth development. *Educational Psychology* 34: 29-41.
- Duncan, Greg J., and Stephen W. Raudenbush. 2001. Neighborhoods and adolescent development: How can we determine the links? In *Does it take a village? Community effects on children, adolescents, and families*, eds. Alan Booth and Nan Crouter, 105-136. Mahwah, NJ: Lawrence Erlbaum Associates.
- Duncan, Greg J., James P. Connell, and Pamela K. Klebanov. 1997. Conceptual and methodological issues in estimating causal effects of neighborhoods and family conditions on individual development. In *Neighborhood poverty*, Vol. 1. *Context and consequences for children*, eds. J. Brooks-Gunn, G. J. Duncan, and J. L. Aber, 219-250. New York: Russell Sage Foundation.
- Dunn, Lloyd M., and Leota M. Dunn. 1981. *PPVT-Revised Manual*. Circle Pines, Minnesota: American Guidance Service, Inc.
- Dunn, Lloyd M., C.M. Theriault-Whalen, and Leota M. Dunn. 1993. *Echelle de vocabulaire en image Peabody*. Toronto: Psycan.
- Eccles, Jacquelynne S., Frank F. Furstenberg, Karen McCarthy, Sarah Lord, and Lynne Geitz. 1993. How parents respond to risk and opportunity in moderate to high risk neighborhoods. Paper presented at the biennial meeting of the Society for Research on Child Development, March, New Orleans, LA. Available at <http://www.rcgd.isr.umich.edu/garp/articles/eccles93f.pdf>, accessed 8 October 2005.
- Elder, Glen H., Jacquelynne S. Eccles, Monika Ardelt, Sarah Lord. 1995. Inner-city parents under economic pressure: Perspectives on the strategies of parenting. *Journal of Marriage and the Family* 57: 771-784.
- Elliot, Delbert, William Julius Wilson, David Huizinga, Robert Sampson, Amanda Elliot, and Bruce Rankin. 1996. The effects of neighborhood disadvantage on adolescent development. *The Journal of Research on Crime and Delinquency* 33: 389-426.
- Fernandez, Roberto M., and David Harris. 1992. *Social isolation and the underclass*. In *Drugs, Crime, and Social Isolation: Barriers to Urban Opportunity*, eds. Adele

- V. Harrell and George E. Peterson, 257-293. Washington, DC: The Urban Institute Press.
- Fitzgerald, Robin, and Peter J. Carrington. Forthcoming; The neighbourhood context of urban Aboriginal Crime. *The Canadian Journal of Criminology and Criminal Justice*.
- Fitzgerald, Robin, Michael Wisener and Josée Savoie. 2004. *Neighbourhood characteristics and the distribution of crime in Winnipeg*. Ottawa: Statistics Canada (Catalogue no. 85-561MIE2004004).
- Foster, Holly, John Hagan, Bernard Boulerice, and Richard E. Tremblay. 2001. *Neighborhood and family effects on childhood gendered aggression*. Ottawa: Applied Research Branch, Human Resources Development Canada (Working Paper No. W-01-2E).
- Foster, Holly. 2001. *Neighbourhood and Family Effects on Childhood Gendered Aggression*. Unpublished Ph.D. diss., University of Toronto, Toronto, Ontario, Canada.
- Fram, Maryah S. 2003. Managing to parent: social support, social capital, and parenting practices among welfare-participating mothers with young children. School of Social Work, University of Washington Institute for Research on Poverty (Discussion Paper no. 1263-03). Available at www.irp.wisc.edu/publications/dps/pdfs/dp126303.pdf, accessed 29 September 2006.
- Frenette, Marc, Garnett Picot, and Roger Sceviour. 2004. *How long do people live in low-income neighbourhoods? Evidence for Toronto, Montreal and Vancouver*. Ottawa: Statistics Canada (Catalogue no. 11F0019MIE2004216).
- Furstenberg, Frank F. 1993. How families manage risk and opportunity in dangerous neighborhoods. In *Sociology and the Public Agenda*, ed. W.J. Wilson, 231-258. Newbury Park, CA: Sage.
- Furstenberg, Frank F., Thomas D. Cook, Jacquelynne S. Eccles, Glen. H. Elder, and Arnold Sameroff. 1999. *Managing to make it: Urban families and adolescent success*. Chicago: University of Chicago Press.
- Garbarino, James, and Deborah Sherman. 1980. High-risk neighborhoods and high-risk families: The human ecology of child maltreatment. *Child Development* 51: 188-198.
- Garbarino, James. 1977. The price of privacy in the social dynamics of child abuse. *Child Welfare* 56: 565-575.
- Garbarino, James. 1987. Family support and the prevention of child maltreatment. In *America's family support programs*, eds. S. Kagan, D. Powell, B. Weissbourd, and E. Zigler, 99-114. New Haven, CT: Yale University Press.

- Gorman-Smith, Deborah, Patrick H. Tolan, and David B. Henry. 2000. A developmental-ecological model of the relation of family functioning to patterns of delinquency. *Journal of Quantitative Criminology* 16: 169-198.
- Grannis, Rick. 1998. The importance of trivial streets: Residential streets and residential segregation. *American Journal of Sociology* 103: 1530-64.
- Guo, Guang, and Hongxin Zhao. 2000. Multilevel modeling for binary data. *Annual Review of Sociology* 26: 441-62.
- Hajnal, Zoltan L. 1995. The nature of concentrated urban poverty in Canada and the United States. *Canadian Journal of Sociology* 20: 497-528.
- Hareven, Tamara K. 1984. Themes in the historical development of the family. In *The family*, ed. Ross D. Parke, 137-178. Chicago: University of Chicago Press.
- Harris, Judith R. 1998. *The nurture assumption: Why children turn out the way they do*. New York: Free Press.
- Hartnagel, Timothy F. 2000. Correlates of criminal behaviour. In *Criminology: A Canadian perspective*, ed. Rick Linden, 94-136. Toronto: Harcourt Canada.
- Hashima, Patricia Y., and Paul R. Amato. 1994. Poverty, social support, and parental behavior. *Child Development* 65: 394-403.
- Hatfield, Michael. 1997. *Concentrations of poverty and distressed neighbourhoods in Canada*. Ottawa: Applied Research Branch, Human Resources Development Canada (Catalogue no. W-97-1E).
- Heisz, Andrew, and Logan McLeod. 2004. *Low income in Census Metropolitan Areas, 1980-2000. Trends and conditions in Census Metropolitan Areas*. Ottawa: Statistics Canada (Catalogue no. 89-613-MIE2004001).
- Hinshaw, S.P. 1987. On the distinction between attentional deficits/hyperactivity and conduct problems/aggression in child psychopathology. *Psychological Bulletin* 101: 443-463.
- Hou, Feng, and Garnett Picot. 2003. *Visible minority neighbourhoods and labour market out-comes of immigrants*. Ottawa: Statistics Canada (Catalogue no. 11F0019MIE, no. 204).
- Jargowsky, Paul A. 1997. *Poverty and place: Ghettos, barrios and the American city*. New York: Russell Sage.
- Jarrett, Robin L. 1992. A family case study: An examination of the underclass debate. In *Qualitative Methods in Family Research*, eds. J. Gilgun, K. Daly and G. Handel, 172-197. Newbury Park, CA: Sage.
- Jarrett, Robin L. 1995. Growing up poor: The family experiences of socially mobile youth in low-income African-American neighborhoods. *Journal of Adolescent Research* 10: 111-135.

- Jarrett, Robin L. 1999. Successful parenting in high-risk neighborhoods. *Future of Children* 9: 45-50. Available at http://www.futureofchildren.org/usr_doc/vol9no2Art4done.pdf.
- Kasarda, John D., and Morris Janowitz. 1974. Community attachment in mass society. *American Sociological Review* 39: 328-339.
- Kazemipur, Abdolmohammed, and Shiva S. Halli. 2001. Immigrants and 'new poverty': The case of Canada. *International Migration Review* 35: 1129-1156.
- Kerr, Don, and Roderic Beaujot. 2001. *Child poverty and family structure in Canada*. London, ON: University of Western Ontario, Population Studies Centre (Discussion paper 01-7).
- Klebanov, Pamela K., Jeanne Brooks-Gunn, and Greg J. Duncan. 1994. Does neighborhood and family poverty affect mothers' parenting, mental health, and social support? *Journal of Marriage and the Family* 56: 441-455.
- Klebanov, Pamela K., Jeanne Brooks-Gunn, P. Lindsay Chase-Lansdale, and Rachel A. Gordon. 1997. Are neighborhood effects on young children mediated by the home environment? In *Neighborhood poverty*, Vol. 1. *Context and consequences for children*, eds. J. Brooks-Gunn, G. J. Duncan, and J. L. Aber, 119-145. New York: Russell Sage Foundation.
- Kling, Jeffrey R., Jeffrey B. Liebman, and Lawrence F. Katz. 2007. Experimental Analysis of Neighborhood Effects. *Econometrica* 75: 83-119.
- Kohen, Dafna E., Clyde Hertzman, and Jeanne Brooks-Gunn. 1998. *Neighbourhood influences on children's school readiness*. Ottawa: Applied Research Branch, Human Resource Development Canada (Technical Report W-98-15E).
- Kohen, Dafna E., Clyde Hertzman, and Jeanne Brooks-Gunn. 1999. Neighbourhood affluence and school readiness. *Education Quarterly Review* 6: 44-52.
- Kohen, Dafna, Jeanne Brooks-Gunn, Tama Leventhal, and Clyde Hertzman. 2002. Neighborhood income and physical and social disorder in Canada: Associations with young children's competencies. *Child Development* 73: 1844-1860.
- Kornhauser, Ruth. 1978. *Social sources of delinquency*. Chicago: University of Chicago Press.
- Kreft, Ita, and Jan de Leeuw. 1998. *Introducing multilevel modeling*. London: Sage.
- Landy, Sarah, and Kwok Kwan Tam. 1996. Yes, parenting does make a difference to the development of children in Canada. In *Growing up in Canada: The National Longitudinal Survey of Children and Youth*, 103-113. Ottawa: Minister of Industry.
- Lasch, Christopher. 1977. *Haven in a Heartless World*. New York: Basic Books.
- Law, Jane, and J. Douglas Willms. 2002. Provincial maps depicting neighbourhood types. In *Vulnerable Children: Findings from Canada's National Longitudinal*

- Survey of Children and Youth*, ed. J. D. Willms, 389-406. Edmonton, AB: University of Alberta Press.
- Lee, Kevin K. 2000. *Urban poverty in Canada: A statistical profile*. Ottawa: Canadian Council on Social Development. Available at <http://www.ccsd.ca/pubs/2000/up/>, accessed 20 September 2006.
- Lempers, Jacques D., Diana Clark-Lempers, and Ronald L. Simons. 1989. Economic hardship, parenting, and distress in adolescence. *Child Development* 60: 25-39.
- Leventhal, Tama, and Jeanne Brooks-Gunn. 2000. The neighborhoods they live in: The effects of neighborhood residence on child and adolescent outcomes. *Psychological Bulletin* 126: 309-337.
- Lin, Nan, Alfred Dean, and Walter M. Ensel, eds. 1986. *Social support, life events and depression*. Orlando, FL: Academic Press.
- Liu, Jianghong. 2004. Childhood externalizing behavior: Theory and implications. *Journal of Child and Adolescent Psychiatric Nursing* 17: 93-103.
- Luster, Tom and Lynn Okagaki, eds. 1993. *Parenting: An ecological perspective*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Maccoby, Eleanor, and Martin, James A. 1983. Socialization in the context of the family: Parent-child interaction. In *Handbook of child psychology: Vol. 4. Socialization, personality, and social development*, eds. P.H. Mussen and E.M. Hetherington, pp. 1-101. New York: Wiley.
- MacLachlan, Ian, and Ryo Sawada. 1997. Measures of income inequality and social polarization in Canadian metropolitan areas. *The Canadian Geographer* 41: 377-397.
- Mancini, Jay A., Gary L. Bowen, and James A. Martin. 2005. Community social organization: A conceptual linchpin in examining families in the context of communities. *Family Relations: Interdisciplinary Journal of Applied Family Studies* 54: 570-582.
- Massey, Douglas S., and Mitchell L. Eggers. 1990. The ecology of inequality: Minorities and the concentration of poverty, 1970-1980. *American Journal of Sociology* 95: 1153-1188.
- Massey, Douglas S. and Nancy A. Denton. 1993. *American apartheid: Segregation and the making of the underclass*. Cambridge, MA: Harvard University Press.
- Massey, Douglas S., and Nancy A. Denton. 1988. The dimensions of residential segregation. *Social Forces* 67: 281-315.
- Mayseless, Ofra, Miri Scharf, and Michal Sholt. 2003. From authoritative parenting practices to an authoritarian context: Exploring the person-environment fit. *Journal of Research on Adolescence* 13: 427-456.

- McLeod, Jane D., Candace Kruttschnitt, and Maude Dornfeld. 1994. Does parenting explain the effects of structural conditions on children's antisocial behavior? A comparison of blacks and whites. *Social Forces* 73: 575-604.
- McLoyd, Vonnie C. 1990. The impact of economic hardship on black families and children: Psychological distress, parenting and socioemotional development. *Child Development* 61: 311-346.
- Miller, Fiona, Jenny Jenkins, and Dan Keating. 2002. Parenting and children's behaviour problems. In *Vulnerable children*, ed. J. Douglas Willms, 167-181. Edmonton: University of Alberta Press.
- Myles, John, Garnett Picot, and Wendy Pyper. 2000. *Neighbourhood inequality in Canadian cities*. Ottawa: Statistics Canada (Catalogue no. 11F0019MPE2000160).
- Oberwittler, Dietrich. 2004. A multilevel analysis of neighbourhood contextual effects on serious juvenile offending: The role of subcultural values and social disorganization. *European Journal of Criminology* 1: 201-235.
- Oberwittler, Dietrich. 2005. Correction of results: A multilevel analysis of neighbourhood contextual effects on serious juvenile offending: The role of subcultural values and social disorganization. *European Journal of Criminology* 2: 93-97.
- Offord, David R., and Ellen L. Lipman. 1996. Emotional and Behavioural Problems. In *Growing up in Canada: The National Longitudinal Survey of Children and Youth*, 119-126. Ottawa: Minister of Industry.
- Oreopoulos, Philip. 2002. *Do neighbourhoods influence long-term labour market success? A comparison of adults who grew up in different public housing projects*. Ottawa: Statistics Canada (Catalogue no. 11F0019MIE – No. 185).
- Ostergren, Per-Olaf. 1991. *Psychosocial resources and health*. Malmö, Sweden: Department of Community Health Sciences, Lund University.
- Ouimet, Marc. 2000. Aggregation bias in ecological research: How social disorganization and criminal opportunities shape the spatial distribution of juvenile delinquency in Montreal. *Canadian Journal of Criminology* 42: 135-156.
- Park, Robert E. 1915. The city: Suggestions for the investigation of human behavior in the city environment. *American Journal of Sociology* 20: 577-612.
- Park, Robert E., Ernest W. Burgess, and R.D. McKenzie. 1925. *The city: Suggestions for investigation of human behavior in the urban environment*. Chicago: University of Chicago Press.
- Patterson, Gerald R., and Magda Stouthammer-Loeber. 1984. The correlation of family management practices and delinquency. *Child Development* 55:1299-1307.

- Pattillo-McCoy, Mary. 1999. *Black picket fences: Privilege and peril among the black middle class*. Chicago, IL: University of Chicago Press.
- Pearlin, Leonard I., and Joyce Johnson. 1977. Marital status, life-strains and depression. *American Sociological Review* 42: 704-715.
- Pearlin, Leonard I., Elizabeth G. Menaghan, Morton A. Lieberman, and Joseph T. Mullan. 1981. The Stress Process. *Journal of Health and Social Behavior* 22: 337-356.
- Pinderhughes, Ellen E., Robert Nix, E. Michael Foster, and Damon Jones. 2001. Parenting in context: Impact of neighborhood poverty, residential stability, public services, social networks, and danger on parental behaviors. *Journal of Marriage and Family* 63: 941-953.
- Puntenney, Deborah. L. 1997. The impact of gang violence on the decisions of everyday life: Disjunctions between policy assumptions and community conditions. *Journal of Urban Affairs* 19: 143-161.
- Rankin, Bruce H., and James M. Quane. 2002. Social contexts and urban adolescent outcomes: The interrelated effects of neighborhoods, families, and peers on African-American youth. *Social Problems* 49: 79-100.
- Raudenbush, Stephen W., and Anthony S. Bryk. 2002. *Hierarchical Linear Models: Applications and Data Analysis Methods*. 2nd edition. Thousand Oaks, CA: Sage.
- Richards, John. 2001. Neighbors matter: *Poor neighbourhoods and urban Aboriginal policy*. Toronto: C.D. Howe Institute (C.D. Howe Institute Commentary 156).
- Romano, Elisa, Bernard Boulerice, Raymond Swisher and Richard E. Tremblay. 2001. *Neighbourhood, family, and individual effects on children's behaviour outcomes in Canada*. Ottawa: Applied Research Branch, Human Resources Development Canada (Working Paper No. W-01-2E).
- Romano, Elisa, Richard E. Tremblay, Bernard Boulerice, and Raymond Swisher. 2005. Multilevel correlates of childhood physical aggression and prosocial behavior. *Journal of Abnormal Child Psychology* 33: 565-578.
- Rosenbaum, James, and Susan J. Popkin. 1991. Employment and earnings of low-income blacks who move to middle-class suburbs. In *The Urban Underclass*, ed. C. Jencks and P. Peterson. Washington, DC: The Brookings Institution.
- Ross, David P., and Paul Roberts. 1999. *Income and child well-being: A new perspective on the poverty debate*. Ottawa: Canadian Council on Social Development. Available at <http://www.ccsd.ca/pubs/inckids/index.htm>, accessed 1 June 2005.
- Ross, Nancy A., Christian Houle, James R. Dunn, and Marcellin Aye. 2004. Dimensions and dynamics of residential segregation by income in urban Canada, 1991-1996. *Canadian Geographer* 48: 433-445.

- Rowe, David C., Alexander T. Vazsonyi, and Daniel J. Flannery. 1994. No more than skin deep: Ethnic and racial similarity in developmental process. *Psychological Review* 101: 396-413.
- Rudy, Duane, and Joan E. Grusec. 2001. Correlates of authoritarian parenting in individualist and collectivist cultures and implications for understanding the transmission of values. *Journal of Cross Cultural Psychology* 32: 202-212.
- Sampson, Robert J., and Jeffrey D. Morenoff. 2004. Spatial (Dis)advantage and homicide in Chicago neighborhoods. In *Spatially Integrated Social Science*, eds. Michael Goodchild and Donald Janelle, 145-170. New York: Oxford University Press.
- Sampson, Robert J., and W. Byron Groves. 1989. Community structure and crime: Testing social disorganization theory. *American Journal of Sociology* 94: 774-802.
- Sampson, Robert J., Jeffrey D. Morenoff, and Felton Earls. 1999. Beyond social capital: Spatial dynamics of collective efficacy for children. *American Sociological Review* 64: 633-60.
- Sampson, Robert J., Jeffrey D. Morenoff, and Thomas Gannon-Rowley. 2002. Assessing "Neighborhood effects": Social processes and new directions in research. *Annual Review of Sociology* 28: 443-478.
- Sampson, Robert J., Stephen W. Raudenbush, and Felton Earls. 1997. Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science* 277: 918-24.
- Savoie, Josée, Frédéric Bédard, and Krista Collins. 2006. *Neighbourhood characteristics and the distribution of crime on the Island of Montréal*. Ottawa: Statistics Canada (Catalogue no. 85-561-MIE2006007).
- Schieman, Scott. 2005. Residential stability and the social impact of neighborhood disadvantage: Gender- and race-contingent patterns. *Social Forces* 83: 1031-1064.
- Séguin, Anne-Marie, and Gérard Divay. 2002. Urban poverty: Fostering sustainable and supportive communities. Ottawa: Canadian Policy Research Networks (CPRN Discussion Paper No. F|27). Available at http://epe.lac-bac.gc.ca/100/200/300/cdn_policy_research_net/urban_poverty-e/urban_poverty.pdf, accessed 5 March 2005.
- Shaw, Clifford R., and Henry D. McKay. 1942/1969. *Juvenile delinquency and urban areas: A study of rates of delinquents in relation to differential characteristics of local communities in American cities*. Chicago: University of Chicago Press. Revised edition.
- Shorter, Edward. 1975. *The making of the modern family*. New York: Basic Books.

- Silver, Eric. 2000. Extending social disorganization theory: A multilevel approach to the study of violence among persons with mental illnesses. *Criminology* 38: 1043-1073.
- Simons, Ronald L., Kuei-Hsiu Lin, Leslie C. Gordon, Gene H. Brody, Velma Murry, and Rand D. Conger. 2002. Community differences in the association between parenting practices and child conduct problems. *Journal of Marriage and Family* 64: 331-345.
- Small, Mario L. 2002. Culture, cohorts, and social organization theory: Understanding local participation in a Latino housing project. *American Journal of Sociology* 108: 1-54.
- Small, Mario L., and Katherine Newman. 2001. Urban poverty after the truly disadvantaged: The rediscovery of the family, the neighbourhood and culture. *Annual Review of Sociology* 27: 23-45.
- Snijders, Tom, and Roel Bosker. 1999. *Multilevel Analysis*. London: Sage.
- Stack, Carol. 1974. *All our kin: Strategies for survival in a black community*. New York: Harper and Row.
- Statistics Canada. 2001. *National Longitudinal Survey of Children and Youth: 2000 Community Component User's Guide*. Ottawa: Minister of Industry.
- Statistics Canada. 2003. *2001 Census data dictionary*. Ottawa: Minister of Industry. Catalogue (No. 92-378-XIE). Available at <http://www12.statcan.ca/english/census01/Products/Reference/dict/index.htm> (accessed August 16, 2005).
- Steinberg, Laurence, Nancy Darling, and Anne C. Fletcher. 1995. Authoritative parenting and adolescent adjustment: An ecological journey. In *Examining lives in context: Perspectives on the ecology of human development*, eds. P. Moen, G. H. Elder, and K. Luscher, 423-466). Washington, DC: American Psychological Association.
- Steinberg, Laurence, Nina S. Mounts, Susie D. Lamborn, and Sanford M. Dornbusch. 1991. Authoritative parenting and adolescent adjustment across varied ecological niches. *Journal of Research in Adolescence* 1: 19-36.
- Steinberg, Laurence, Susie D. Lamborn, Sanford M. Dornbusch, and Nancy Darling. 1992. Impact of parenting practices on adolescent achievement: Authoritative parenting, school involvement, and encouragement to succeed. *Child Development* 63: 1266-1281.
- Suttles, Gerald D. 1972. *The social construction of communities*. Chicago: University of Chicago Press.

- Taylor, Ronald D., and Debra Roberts. 1995. Kinship support and maternal and adolescent well-being in economically disadvantaged African American families *Child Development* 66: 1585-1597.
- Teachman, Jay, and Kyle Crowder. 2002. Multilevel models in family research: Some conceptual and methodological issues. *Journal of Marriage and Family* 64: 280-294.
- Tienda, Marta. 1991. Poor people in poor places deciphering neighborhood effects on poverty outcomes. In *Macro-micro linkages in sociology*, ed. J. Huber, 244-262. Newbury Park, CA: Sage Publications.
- Tremblay Stephane, Nancy A. Ross, Jean-Marie Berthelot. 2002. Regional socio-economic context and health. *Supplement to Health Reports* 13:1-12. Ottawa: Minister of Industry.
- Tremblay, Richard E., Bernard Boulerice, Holly Foster, Elisa Romano, John Hagan and Raymond Swisher. 2001. *Multi-level effects on behaviour outcomes in Canadian children*. Ottawa: Applied Research Branch, Human Resources Development Canada (Working Paper No. W-01-2E).
- Vazsonyi, Alexander T., Loyd E. Pickering, and John M. Bolland. 2006. Growing up in a dangerous developmental milieu: The effects of parenting processes on adjustment in inner-city African American adolescents. *Journal of Community Psychology* 34: 47-73.
- Wallace, Marnie, Michael Wisener and Krista Collins. 2006. *Neighbourhood characteristics and the distribution of crime in Regina*. Ottawa: Statistics Canada (Catalogue no. 85-561-MIE2006008).
- Wang, C. H. C., and J. S. Phinney. 1998. Differences in child rearing attitudes between immigrant Chinese mothers and Anglo-American mothers. *Early Development and Parenting* 7: 181-189.
- Weinraub, Marsha, and Barbara M. Wolf. 1983. Effects of stress and social supports on mother-child interactions in single- and two-parent families. *Child Development* 54: 1297-1311.
- Weiss, Laura H., and J. Conrad Schwarz. 1996. The relationship between parenting types and older adolescents' personality, academic achievement, adjustment, and substance use. *Child Development* 67: 2101-2114.
- Wethington, Elaine, and Ronald C. Kessler. 1986. Perceived support, received support, and adjustment to stressful life events. *Journal of Health and Social Behavior* 27:78-89.
- Wickrama, K. A. S. and Chalandra M. Bryant. 2003. Community context of social resources and adolescent health. *Journal of Marriage and Family* 65: 850-866.

- Willms, J. Douglas. 2002. Socio-economic gradients for childhood vulnerability. In *Vulnerable Children: Findings from Canada's Longitudinal Study of Children and Youth*, ed. J. Douglas Willms, 71-102. Edmonton, AB: University of Alberta Press.
- Willms, J. Douglas. 2003. *Ten hypotheses about socioeconomic gradients and community differences in children's developmental outcomes*. Ottawa, Ontario, Canada: Applied Research Branch of Human Resources Development Canada.
- Wilson, William Julius. 1987. *The truly disadvantaged: The inner city, the underclass, and public policy*. Chicago: University of Chicago Press.
- Zelizer, Viviana A. 1985. *Pricing the priceless child*. New York: Basic Books.

Appendix A: Parenting variables

This study examines three aggregate parenting variables (discipline effectiveness, parental investment and parental involvement) which are each composed of smaller subscales. The questionnaire items that are used to derive the parenting subscales are provided below. The items reflect responses by parents and form part of the “Children’s Questionnaire” of the National Longitudinal Survey of Children and Youth Community Component, administered in Winnipeg in 2000. The questionnaire was administered in the household by Statistics Canada interviewers. Note that when necessary, items were reverse-coded before subscales were constructed. The subscale and final variable construction is discussed in Chapter 3, section 4.0. Final subscales were rescaled to 10-point scales.

1. Discipline effectiveness

Subscale 1: Harsh parenting

Scale items: Parents were asked to rate each question on a scale of 1-5 where 1=never, and 5=many times each day or always.

- How often do you get annoyed with your child for saying or doing something he/she is not supposed to?
- How often do you tell your child that he/she is bad or not as good as others?
- How often do you get angry when you punish your child?
- How often do you have to discipline your child repeatedly for the same thing?

- Of all the times that you talk to your child about his/her behaviour, what proportion is praise?
- Of all the times that you talk to your child about his/her behaviour, what proportion is disapproval?
- When your child breaks the rules, how often raise your voice, scold or yell at your child?
- When your child breaks the rules, how often do you use physical punishment?

Subscale 2: Consistent parenting

Scale items: Parents were asked to rate each question on a scale of 1-5 where 1=never, and 5=many times each day or always.

- When you give your child a command or order to do something, what proportion of the time do you make sure that he/she does it?
- If you tell your child he/she will get punished if he/she doesn't stop doing something, and he/she keeps doing it, how often will you punish him/her?
- How often does your child get away with things that you feel should have been punished?
- How often is your child able to get out of a punishment when he/she really sets his/her mind to it?
- How often when you discipline your child, does he/she ignore the punishment?

2. Parental investment

Subscale 1: Literacy-numeracy skill development

Scale items: Parents were asked to rate each question on a scale of 1-5 where 1=rarely or never, and 5=daily.

- How often do you read aloud to your child or listen to him/her read or try to read?
- How often do you tell stories to him/her?
- How often do you teach your child to name printed letters and/or numbers?
- How often do you teach your child to read words?
- How often do you encourage your child to use numbers?

Subscale 2: Social skill encouragement

Scale items: Parents were asked to rate each question on a scale of 1-5 where 1=rarely or never, and 5=daily.

- How often do you get a chance to take your child shopping or on errands?
- How often do you get a chance to take your child outside for a walk or to play in the yard, park, or playground?
- How often does your child go to the library or bookmobile, including school library?

Subscale 3: Parent-child activities

Scale items: Parents were asked to rate each question on a scale of 1-6 where 1=everyday, and 6= rarely or never.

- How many days a week do you and your child play sports together?

- How many days a week do you and your child play cards/games together?
- How many days a week do you and your child do projects or chores together?
- How many days a week do you and your child go on outings together?

Subscale 4: Positive/nurturing parenting

Scale items: Parents were asked to rate each question on a scale of 1-5 where 1=never and 5=many times each day.

- How often do you do something special with your child that he/she enjoys?
- How often do you and your child laugh together?
- How often do you and your child talk or play with each other, focusing attention on each other for five minutes or more, just for fun?
- How often do you praise you child, by saying something like "Good for you!" or "What a nice thing you did!" or "That's good going!"?

3. Parental involvement

Subscale 1: Parental involvement in the community

Scale items: Parents were asked to respond yes (1) or no (2) to each question about their own community involvement.

- Are you involved in the PTA?
- Are you involved with religious groups?
- Involved in any community associations?
- Involved in cultural/ethnic association?

- Involved in a political association?
- Been asked to participate in local organization?
- Involved in any sports/music/art groups?
- How often do you vote in elections? (recoded to 1= ever, 2= never).

Subscale 2: Parent/child interaction with neighbours

Scale items: Parents were asked to rate questions about their own and their children's interaction with neighbours where 1=frequently (at least once a week), and 4=a few times a year or not at all.

- How often do you talk to or visit with neighbours?
- How often does child visit with other children in the neighbourhood

Subscale 3: Parents' use of child-centred resources

Scale items: Parents were asked to rate questions about their children's access to local resources, where 1=frequently (at least once a week), and 4=not at all.

- How often does your child attend movies?
- How often does your child attend plays?
- How often does your child attend museums?
- How often does your child attend spectator sports
- How often does your child attend aquariums?
- How often does your child attend child activity?
- How often does your child use parks/play spaces
- How often does our child use recreation or community centres?
- How often does your child use pools?

- How often does your child go skating?
- How often does you child use national parks

Subscale 4: Parent's involvement in child's school

Scale items: Parents were asked to respond yes=1 or no=2 to questions about their own interaction with their child's school.

During the past school year did you do any of the following:

- Spoken to, visited or corresponded with your child's teacher
- Visited your child's class
- Attended a school event in which your child participated, for example a play, sports competition or science fair
- Volunteered in your child's class or helped with a class trip
- Helped elsewhere in the school, such as in the library or computer room
- Attended a parent-school meeting
- Participated in fund-raising for the school
- Participated in other school activities

Subscale 5: Parent's advice seeking behaviour

Scale items: Parents were asked to rate questions on their advice seeking behaviour, where 1= strongly disagree, and 4=strongly agree.

When I face problems or difficulties in my family, I respond by seeking information from:

- Persons in other families who have faced similar problems?

- Community agencies and programs designed to help families in a similar situation?
- Spiritual or religious leaders or communities?
- A family doctor or professional counsellor?

Appendix B: Children's problem behaviour score items

A measure of children's behavioural problems was derived from the Child Behaviour Checklist (Achenbach and Edelbrock 1981) modified for Canadian children on the NLSCY instrument (Statistics Canada 2001). The behaviour score is based on 24 items scored on a 3-point scale in which a score of 0 indicates an absence of the behaviour problem.

How often would you say [child]

- Can't sit still or is restless?
- Is inattentive?
- Difficulty waiting turn in games/groups?
- Has trouble sticking to any activity?
- Can't concentrate for long time?
- Is impulsive, acts without thinking?
- Threatens people?
- Bullies or is mean to others?
- Reacts with anger and fighting?
- Kicks or hits other children?
- Physically attacks people?
- Gets into many fights?
- Is too fearful or nervous?
- Is worried?

- Is nervous, high-strung or tense?
- Cries a lot?
- Is not as happy as other children?
- Has trouble enjoying him/herself?
- Seems to be unhappy or sad?
- Becomes friends with another as revenge?
- Tells others to avoid another child?
- Says bad things behind other's backs?
- Gets others to dislike someone?
- Tells secrets to a third person?

Appendix C: Neighbourhood structural variables

This study assesses the relationship between parenting and three overarching neighbourhood structural characteristics: socioeconomic disadvantage, residential mobility and ethnic heterogeneity. Factors scores representing these structural characteristics are calculated from 13 variables derived from the 2001 Census of Population measuring neighbourhood differences in income, ethnicity, education, family composition, residential stability, and other factors. The method of deriving the factors scores is described in Chapter 3, section 4.2.2. Statistics Canada definitions of the 13 census variables are provided below (see also Statistics Canada 2003).

Without secondary school certificate: Population aged 20 years and older without a secondary school certificate as a percentage of the neighbourhood population.

Aboriginal identity population: Persons who reported identifying with at least one Aboriginal group as a percentage of the neighbourhood population. Aboriginal groups include North American Indian, Métis or Inuit (Eskimo), and/or Treaty Indian or a Registered Indian, as defined by the *Indian Act of Canada*, and/or who reported they were members of an Indian Band or First Nation.

Receiving Government transfers: Persons receiving payments from federal programs such as Guaranteed Income Supplement/Old Age Security, the Canada Pension Plan, and Employment Insurance in the year 2000, calculated as a percentage of the neighbourhood population.

Average household income (in \$1,000s): The weighted mean total income of all private households for the year 2000. Average income is calculated by Statistics Canada

from unrounded data by dividing the aggregate income of a specified group of individuals (e.g. private households) by the number of individuals with income in that group.

Unemployment rate: Number of unemployed persons aged 15 or older in the neighbourhood divided by the total number of neighbourhood residents aged 15 or older participating in the labour force.

Single-mother families: Percentage of female lone-parent families among economic families living in private households. In this case, lone-parent refers to a female parent who lives with one or more children and no additional spouse/parent.

Incidence of low income in 2000 for economic families: Percentage of economic families or unattached individuals who spend 20% more than average on food, shelter and clothing. The incidence of low income is the proportion or percentage of economic families or unattached individuals in a given classification below the low income cut-offs (see Statistics Canada 2003, 164 for a detailed description of LICOs). These incidence rates are calculated by Statistics Canada from unrounded estimates of economic families and unattached individuals 15 years of age and over.

Living alone: Percentage of private household in which an individual is living alone.

Movers within the past year: Percentage of persons who, on Census Day, were living at a different address than the one at which they resided one year earlier.

Owner-occupied dwelling: Percentage of private, non-farm and non-reserve dwellings that are owed by the occupant.

Shelter affordability: Percentage of all private non-farm and non-reserve dwellings spending more than 30% of their total household income on shelter. The figure includes both owner-occupied and tenant-occupied dwellings.

Visible minority population: Individuals who identified themselves as members of a 'visible minority' group—defined under the *Employment Equity Act* as those, other than Aboriginal persons, who are not white in race or colour—as a percentage of the neighbourhood population. The visible minority population includes the following groups: Chinese, South Asian, Black, Filipino, Latin American, Southeast Asian, Arab, West Asian, Korean, Japanese, Visible Minority, n.i.e. and Multiple Visible Minorities.

Recent immigrant population: Number of people who immigrated to Canada between 1996 and 2001 as a percentage of the total population in 2001.