ABSTRACT

Title of Document: A MULTILEVEL EXPLORATION OF
                                      NEIGHBORHOOD DISORDER, FAMILY
                                      MANAGEMENT AND YOUTH ANTISOCIAL
                                      BEHAVIOR

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    Tremendous research has been dedicated to unpacking the relationship between

neighborhood characteristics and youth development. Despite these efforts conclusions have

been generally mixed and it is the lack of consensus regarding the importance of community that

has in part fueled this dissertation. Much of the research dedicated to examining community and

neighborhood effects on parenting and child behavior have been focused on community

structural characteristics. Even though there is much evidence to suggest that disorder can affect

both individuals and communities alike there is a paucity of literature on how neighborhood

disorder may simultaneously influence family practices and child problem behavior.

    Using data from the Project on Human Development in Chicago Neighborhoods (PHDCN)

and borrowing from the conceptual framework developed by Furstenberg, Cook, Eccles, Elder

and Sameroff (1999), the current investigation explores the relationship between disorder, family

management and youth antisocial behavior by posing four research questions. First, what are the

effects of neighborhood disorder on family management practices? Second, how do family

management strategies influence youth involvement in antisocial behavior? Third, how does

neighborhood disorder affect youth antisocial behavior? Fourth, what is the multilevel

relationship between disorder, family management and antisocial behavior?

A series of models, analyzed using Hierarchical Linear Model, indicate that although

disorder significantly influences several parenting strategies, in the end, family management

practices tend to have a greater impact on youth involvement in antisocial behavior. Parents

living in disordered neighborhood are more likely to limit their child's access to the surrounding

neighborhood which in turn is shown to reduce antisocial behavior. These findings suggest that

protective family management practices can be effective in curbing youth deviant behavior.

Moreover, the analyses also revealed a significant relationship between proximal mechanisms of

antisocial behavior (exposure to violence and peer deviance), family management and antisocial

behavior. In essence, parental efforts in reducing exposure to violence and peer deviance have a

protective effect in reducing antisocial behavior, especially in highly disordered neighborhoods.

In keeping with these findings, several avenues for future research are discussed, as are

theoretical and policy implications.

A MULTILEVEL EXPLORATION OF NEIGHBORHOOD DISORDER,
FAMILY MANAGEMENT AND YOUTH ANTISOCIAL BEHAVIOR

By

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Dissertation submitted to the Faculty of the Graduate School of the
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<u>DEDICATION</u>

For Munir and our Children

and

For my Father

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experience I shall always cherish. To the remaining members of my dissertation committee, thank you for being with me during the final stages of this journey. Ray Paternoster was there to guide me through the beginning of my doctorate and several years later was there to help me finish it. Although I have not had the opportunity to work with Terence Thornberry, his support and suggestions during the dissertation were essential to my work. I have also come to realize that Sandy Hofferth and I share such similar interests that I truly am fortunate to have had the opportunity to work with her. And finally, I am glad to have worked with David Maimon. Your passion is an inspiration and the strength of your convictions a goal to strive for.

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CHAPTER 1- Introduction

Aim

Successful child development is the result of a cooperative endeavor between several social and geographical contexts. The neighborhood, school, family, even individual characteristics come together, to foster positive or negative child socialization, processes that are both multileveled and symbiotic. Contexts may make distinct contributions to child success or act through each other creating a web of direct and indirect influences. There has been tremendous research on these interactions, where some studies have focused on, for example, parenting and peer effects; others have centered their efforts on neighborhood conditions and child outcomes. In recent years we have witnessed an upsurge of interest in neighborhood influences on child behavior which many have credited to Wilson's *The Truly Disadvantaged* (Brooks-Gunn, Berlin, Leventhal, and Allison 2000; Furstenberg, Cook, Eccles, Elder, and Sameroff 1999; Leventhal and Brooks-Gunn 2000) and to the availability of data that have enabled a more developmental-ecological (Bronfenbrenner 1979) approach to the study of childhood and adolescence.

Determining exactly how the neighborhood affects child outcomes has proven somewhat elusive even though a good deal of research has examined these influences on both child and adolescent behaviors (Beale-Spencer, Cole, Jones, and Swanson 1997; Kellam, Ling, Merisca, Brown, and Ialongo 1998; Kupersmidt, Griesler, DeRosier, Patterson, and Davis 1995; Lynam, Caspi, Moffitt, Wikström, Loeber, and Novak 2000). Results have often been mixed. While some studies like Kupersmidt et al (1995) and Beale-Spencer et al (1997) find no neighborhood effects, others such as Kellam et al (1998), Loeber and Wikström (1993) and Lynam et al (2000) show demonstrable community influences on both child and adolescent development. Several

possible explanations emerge from the literature. First, family factors may mediate the impact of neighborhood conditions on child and youth conduct. Second, researchers' failure to consider how the proximal mechanisms of antisocial behavior may in fact aggravate the negative effects bad neighborhoods confers on youth behavior.

Assessments of neighborhood influences on successful child rearing and socialization require longitudinal, multilevel designs that simultaneously evaluate neighborhood, family and individual contexts, precisely because "family-level variables tend to be more strongly associated with individual outcomes than are neighborhood-level variables," (Leventhal and Brooks-Gunn 2000: 315). Just as parenting can affect how children behave, neighborhoods can affect how parents behave (see for example Furstenberg et al 1999). Failure to incorporate family strategies can lead researchers to conclude that neighborhood contexts have little or no influence on child outcomes, when in fact they do. Moreover, as Leventhal and Brooks-Gunn (2000) and Brooks-Gunn, Duncan, Klebanov, and Sealand (1993) point out, the influence that neighborhoods and family exert on child outcomes may vary across developmental stage. As children begin to survey their community during middle-to-late childhood, exposure to neighborhood contexts takes place more regularly. The increased contact with neighborhood heightens risk for all children but especially for those in troubled communities. Parents are therefore responsible for controlling this exposure and when done so inefficiently; neighborhoods will have more direct influences on children and their behavior. Family variables are, in essence, an important contributor to how neighborhood conditions affect child development. The quality of parent-child relations and how parents protect their children from harmful neighborhood environments influence how well children fare in the face of potential adversity. The purpose of this study is to clarify the linkages between neighborhood, family practices and the development of negative

child behavior. Specifically, to explore how community levels of disorder shapes the type of family management strategies parents implement, and how these methods affect antisocial behavior either directly or through exposure to violence in the neighborhood and association with deviant peers.

It is interesting to note that many of the research efforts examining community and neighborhood effects on parenting and child behavior have concentrated their investigation on community structural characteristics. Disadvantage, socioeconomic status, racial inequality and poverty are the most commonly used neighborhood level variables. In fact, Simons, Johnson, Beaman, Conger, and Whitbeck (1996) suggest that most of the literature on neighborhood effects is comprised of correlations between neighborhood disadvantage (usually poverty), childhood problems (amongst them antisocial behavior) and positive youth outcomes like educational attainment and prosocial behavior (see Leventhal and Brooks-Gunn 2000 for review). Less study has been dedicated to neighborhood disorder, even though disorder has been shown to affect both individuals and communities alike. There is a paucity of literature on how neighborhood disorder may simultaneously influence family practices and child problem behavior. Research has illustrated how neighborhood disorder can affect crime (Kelling and Coles 1996; Markowitz, Bellair, Liska, and Liu 2001; Miethe and Meier 1990; Miethe and Meier 1994; Sampson and Raudenbush 1999; Skogan 1990; Wilcox, Land, and Hunt 2003; Wilson and Kelling 1982; Yang 2007), mental health (Feldman and Steptoe 2004; Geis and Ross 1998; Romano, Tremblay, Boulerice, and Swisher 2005; Ross, Reynolds, and Geis 2000; Seidman, Yoshikawa, Roberts, Chesir-Teran, Allen, Friedman, and Aber 1998; Steptoe and Feldman 2001) and even obesity (Burdette and Hill 2008), but how disorder may individually affect parenting practices and decisions as well as negative child outcomes has seldom been investigated.

Studies that have looked at neighborhood disorder, measured as perceived disorder (Elliott, Menard, Elliott, Wilson, and Huizinga 2006; Sampson and Raudenbush 2001; Skogan 1990), demonstrate how it has deleterious consequences for youths (Elliott et al. 2006; Romano, Tremblay, Boulerice, and Swisher 2005; Seidman et al. 1998; Simcha-Fagan and Schwartz 1986). Findings are less conclusive about the mechanism through which disorder operates: whether it is through family processes, exposure to harmful neighborhood environments, association with deviant peers, or through a more direct effect on child behavior and development. If people living in disordered communities are less healthy, experience greater levels of psychological stress, decreased mental health and are at increased risk of obesity, how may disorder affect children who are potentially exposed to it throughout childhood and adolescence? Moreover, how does neighborhood disorder impact parents whose responsibility it is to protect their children from harmful environments? Parents who must face the poor conditions of their community need to be more vigilant with respect to how the neighborhood can affect their children. With this in mind, the theoretical framework that informs the current study builds upon the research of both Furstenberg et al (1999) and Elliot et al (2006).

In *Managing to Make It*, Furstenberg et al (1999) describe the importance of parenting in helping children overcome detrimental and often crippling neighborhood circumstances. In essence, the authors illustrate how family management strategies, both promotive and preventative, actively contribute to positive adolescent socialization. Neighborhood conditions predict how parents respond and adjust their parenting strategies in order to protect their children from the negative consequences of the neighborhood environment and promote their children's skills and competencies. These practices enable children to conquer the obstacles present in their neighborhood. In a more recent investigation, Elliott et al (2006) examine adolescents from both

Denver and Chicago and conclude that in disadvantaged neighborhoods, *"there appears to be a greater payoff for good parenting, neighborhood support and good schools,"* (p. 285, emphasis in the original). The authors show that successful adolescent development in neighborhoods rife with disorder and deterioration is accomplished through good parental practices. Thus, findings from both studies fuel the current project: Furstenberg et al's (1999) emphasis on the role of parental management strategies both within and outside-the-home and Elliott et al's (2006) analyses demonstrating that neighborhood physical disorder, (which they operationalize as physical deterioration in terms of trash on the streets, buildings that are abandoned and/or in disrepair and vandalized streets) has a negative impact on adolescent prosocial behavior and competence. Both have contributed to the formulation of a model exploring disorder, family and child development and the present dissertation is therefore aimed at uncovering the relationships between neighborhood disorder, family management strategies and youth involvement in deviant behavior, including delinquency.

Study Rationale

Why study neighborhood disorder?

Discussions over the relative importance of disorder have ranged from its impact on crime, particularly predatory crime, to its influence on residents' fear. Researchers like Skogan (1990), Wilson and Kelling (1982), Skogan and Maxfield (1981) and Sampson and Raudenbush (2001, 2004) view disorder as an important contributor to the understanding of neighborhood processes. Several investigations have been dedicated to analyzing the disorder-crime nexus (Skogan 1990; Taylor 1990; Taylor and Hale 1986; Yang 2007; Browning 2009; Sampson and Raudenbush 1999) but clear-cut answers to how disorder and crime are related remain mostly unanswered. Perhaps disorder's value comes not from its ability to explain crime, but from how it affects the

people who experience and react to it. Evidence of disorder informs community residents about the deterioration of their neighborhood. Signs of drug use or being harassed by teens show people that their neighborhood is no longer safe (Skogan and Maxfield 1981; Perkins and Taylor 1996). "Visual signs of social and physical disorder in public spaces reflect powerfully on our inferences about urban communities," (Sampson and Raudenbush 1999: 603). Inferences about community circumstances have powerful implications, affecting a wide range of situations and negatively impacting the community. Disorder can lead to drops in the housing market, to loss of businesses as they move to more prosperous neighborhoods (Sampson and Raudenbush 2001, 2004, 2005) or cause residents to feel powerless and unable to affect change in their community (Geis and Ross 1998). The damaging consequences of disorder to both people and communities while evident in the literature, leave avenues of research still to be explored, several of which are addressed in this dissertation.

The Role of Parenting

To presume that neighborhood has little effect on how children develop is to believe that youths are oblivious to their surroundings. During early childhood this may be true, as more time is spent in the home. Once school commences, however, new environments are revealed and exposure to a variety of stimuli begins. Wikström and Loeber (2000: 1133-1134) find "there [are] significant direct effects of neighborhood disadvantage on well-adjusted children, influencing them to become involved in serious offending as they reach adolescence," and argue that "community context may have an important indirect influence through its potential impact on the development of individual dispositions and, particularly, aspects of the individual social situation (family, school, peers) related to serious offending," (p. 1134). These "social interactions" intervene in how the neighborhood exerts its impact and how these effects may

evolve over time (Ingoldsby and Shaw 2002). Of particular pertinence to the present study is the role of parenting and parenting factors. Elliott et al (2006) find, like Furstenberg et al (1999), that "family variables are the dominant predictors of [adolescent] success…" (p. 247), and as such, family variables intervene in the relationship between the where and the how a child is reared, embodying the bridge connecting children to the community in which they live.

Furstenberg et al (1999) offer one of the most comprehensive studies of how parents cope with "bad" neighborhoods. The authors look at family management practices in relation to gender, race and successful adolescent outcomes. Specifically, Furstenberg and colleagues (1999) examine how family management strategies influence adolescent academic performance, problem behavior and other factors while controlling for gender and race. However, as the authors readily admit, the cross-sectional nature of their data neither permits a longitudinal analysis of family management styles nor makes "a case for strong causal connections," (p. 20). Moreover, the exclusive focus on adolescence and adolescent competence, limits conclusions regarding how family management processes adapt in response to child maturation. Parenting styles and strategies necessarily change as a child grows. From monitoring, disciplining and supervising the child while in the home, to focusing efforts on the outside world, parents must adjust their management practices during the transition from childhood to adolescence and beyond (Belsky 1984; Darling and Steinberg 1997; Furstenberg 1993; Furstenberg et al. 1999). Parents and quality of parenting is of particular importance in preventing the development of problem behavior, just as ineffective parenting may foster these behaviors (Patterson, DeBaryshe, and Ramsey 1989; Patterson, Reid, and Dishion 1992; Wakschlag and Hans 1999). Tremendous focus has been placed on parenting activities within the home. But, and especially as children begin to venture out into their communities and schools, parents become important

buffers between the potentially dangerous effects of both neighborhood conditions and peer influences (Furstenberg et al. 1999; Steinberg 1990).

At each developmental stage children are faced with different environments, home, school and during late childhood and adolescence, even the neighborhood. As parental management strategies evolve, so too do the interactions children establish with peers and their surrounding community. Given certain conditions, and the right opportunity, associations with deviant peers flourish and exposure to violence in the neighborhood increases, which in turn can affect the development of antisocial and delinquent behavior (Cantillon 2006; Ingoldsby, Shaw, Winslow, Schonberg, Gilliom, and Criss 2006; Ingoldsby and Shaw 2002; Ward and Laughlin 2003). Management of the outside world becomes crucial especially during the adolescent years (Furstenberg et al 1999) for not only is adolescence a period of both biological and psychological change, but also a time when conduct problems may emerge (Brooks-Gunn, Duncan, Klebanov, and Sealand 1993; Leventhal and Brooks-Gunn 2000; Moffitt 1993). Good parental management strategies serve to curb the negative influence of the neighborhood. For example, parents living in a less than stellar community may choose to actively restrict their child's access to the neighborhood to prevent exposure to the noxious environment, and more specifically to violence and deviant peers (Furstenberg et al 1999). Alternatively, parents may choose to seek enriching opportunities for their children, to promote their individual skills and talents.

The exploration of how different family management practices shape youth behavior during late childhood and early adolescence and how these strategies are a function of neighborhood conditions like disorder is examined in this dissertation. In order to do so, data must be available to meet these needs. The Longitudinal Cohort Study (LCS) of the Project on Human Development in Chicago Neighborhoods (PHDCN) is particularly appropriate for the

current investigation. The LCS gathered data on seven cohorts ranging from birth to age 18. The extensive surveys permit an examination of how family management strategies change and the data are ideally matched to assess intra- and inter-cohort child behavior. Additionally, the community survey provides rich data on neighborhood structural characteristics and more importantly neighborhood disorder.

Theoretical Significance

This project examines several fronts within both criminology and sociology and has therefore several implications for theoretical elaboration. At the forefront, is the relationship between neighborhood disorder, family management and youth deviant behavior. Another area under examination is the influence of family management on child outcomes. More often than not, investigations aimed at detangling the effects of neighborhood on family processes and child development have focused on strategies parents employ within the home and in particular how parents manage their child's behavior (Furstenberg et al 1999). Research suggests however, that what parents do to manage their child's time away from home matters too. As children grow, their contact with the surrounding community increases, and thus the effects of disadvantaged neighborhoods becomes more direct (Leventhal and Brooks-Gunn 2000). This direct exposure leads to more intimate contact with the community and associations with peers (Brooks-Gunn et al 1993).

Parental management practices serve to control children's access to the surrounding environment and the community. It is the parents' job to limit child exposure to dangerous or risky communities, in addition to selecting their peers (Furstenberg et al 1999). Practices adopted outside the household are therefore aimed at maintaining these strategies by providing

monitoring and supervision while the child is away from home. In addition to the preventative

management, Furstenberg et al (1999) also stress the importance of promotive strategies, where

parents invest in their child's skills, and foster participation in organized activities. Recent

findings however, (Fauth, Roth, and Brooks-Gunn 2007b; Gardner and Brooks-Gunn 2008;

Gardner and Brooks-Gunn 2009) have reported that neighborhood characteristics dilute whatever

benefits there may be to child participation in said activities. Within some communities,

promotive strategies may work best, within others, parents may need to look at implementing

more restrictive practices, curtailing children's exposure to the potential neighborhood violence

and deviant peers. Preventative strategies may help temper the negative consequences disorder

exerts on youth development (Elliott et al 2006). Therefore, understanding the significance of

these strategies and how they may successfully prevent or attenuate child and youth involvement

in antisocial behavior will add to the literature on the relationship between neighborhood and

child outcomes. Our knowledge of child development will be improved and important processes

that contribute to successful rearing, highlighted. In addition, efficient practices instituted in the

face of deleterious community conditions shall be identified, helping to establish useful policy in

relation to parenting guidelines especially for families living in disadvantaged neighborhoods as

well as expand current perspectives concerning neighborhoods and youth antisocial behavior.

The study of disorder is another arena to which this project contributes. Of particular

relevance in the present study is how disorder affects residents' behavior and physical well-being

(Geis and Ross 1998; Ross et al 2000; Steptoe and Feldman 2001). How are family management

practices affected in neighborhoods plagued by disorder and with what consequences? As

previously mentioned, children living in neighborhoods beleaguered by higher levels of disorder

tend to fare worse than do children living in neighborhoods with less disorder (Seidman et al

1998; Romano et al 2005; Simcha-Fagan and Schwarz 1986; Elliott et al 2006). Why children fail to blossom may be attributed to the quality of parenting and parenting strategies. However, which of these practices matters most, remains unclear. Family influences, like neighborhood effects, may not impact all children equally and can have indirect effects on involvement in deviant behavior, through more proximal mechanisms of antisocial behavior, like exposure to violence and association with deviant peers (Ingoldsby and Shaw 2002; Leventhal and Brooks-Gunn 2000; Ingoldsby et al 2006). These mechanisms and how they are influenced by the levels of disorder in the neighborhood have been understudied.

The opportunity to explore how neighborhood disorder influences family management and child conduct is therefore unique. Furstenberg and colleagues (1999), for example, take an important step by incorporating family management strategies implemented outside the home, but in many studies, a general supervision/monitoring variable is used. Parenting methods are much more than what parents do at home. As such, this study examines family management practices, neighborhoods and youth antisocial behavior from a multicontextual, multileveled perspective in an effort to unravel the complex workings of disorder, parenting and individual characteristics on problem behavior.

Summary

The character of the neighborhood, whether it is disordered or dangerous contributes to how parents actively manage their children, either restricting them from interacting with their neighborhood or promoting said interaction. In essence, how parents interact with and socialize their children is in part subject to the environment in which they live. This project is an invaluable opportunity to further enhance our understanding of how neighborhood, family and

individual attributes may affect antisocial behavior. The objectives of this study are thus to a) evaluate how neighborhood disorder influences family management strategies; b) clarify the relationship between family management and youth antisocial behavior c) examine these processes from a multilevel and longitudinal perspective.

Outline

Chapter 2 is dedicated to a review of the relevant literature pertaining to disorder, neighborhood studies of child development, parenting and child outcomes. The theoretical framework and research questions that guide this investigation are presented in Chapter 3, along with the hypotheses to be tested and diagrammatic representation of the complete model. In Chapter 4, the data and methods are described, in addition to the operationalization of the variables of interest. Chapter 5 presents the results for the analyses undertaken and finally, Chapter 6 provides a discussion of the findings and conclusion to this dissertation.

CHAPTER 2- Literature Review

Examining how neighborhood disorder, family management and negative youth outcomes form a cogent framework means bringing together the studies that have contributed to our knowledge of these domains. This chapter is dedicated to a review of the relevant research and begins with an analysis of the disorder literature. So many have diligently explored and sought to explain what we now term "disorder." Its relevance to the field of criminology and beyond, now points us toward what has yet to be discovered, as it is the unchartered, or perhaps understudied, role of disorder that has nurtured this investigation. Next, I address the literature on neighborhood context and child development. These studies frequently overlap with the research on family and child outcomes, especially negative outcomes such as exposure to violence, association with deviant peer and antisocial behavior. Family plays a fundamental part in several theories of delinquency and deviance. Like the works of Furstenberg et al (1999) and Elliott et al (2006) which examine family, neighborhood and youth development, the current study uses family processes to provide a much needed link between neighborhood context and child outcomes. Finally, I summarize how this work extends the literature and describe some of the extant methodological gaps.

Disorder

As mentioned in Chapter 1, research on disorder has spanned several disciplines from criminology to sociology, psychology and even the health sciences. This review begins with a short appraisal of the relationship between disorder and crime, continuing on to how disorder affects fear of crime and personal health.

Disorder and Crime

Disorder's relationship with crime has been highly contentious. Although the macro-level approach to the disorder-crime nexus is not directly assessed in this project, a brief review of the pertinent evaluations is presented here because this literature has, in part, led to the branching out of the disorder research into other domains, contributing to the development of the ideas and perspectives mentioned here. Wilson and Kelling (1982) though not the first to focus on the influence of disorder on neighborhood life (Wirth 1962; Wilson 1975), were the first to illustrate the macro-level theoretical underpinnings of the relationship between disorder and crime. In effect, Wilson and Kelling (1982) proposed that behaviors indicative of disorder, like pan-handling, public drunkenness, unruly groups of teens and prostitutes on the street, if left unchecked, lead to serious predatory crime. The authors argued that "… at the community level, disorder and crime are inextricably linked, in a kind of developmental sequence," (p. 31). Thus began decades of intellectual debate between those who believed disorder caused crime (whether directly or indirectly) and those who argued that the relationship was spurious.

Skogan (1990) conducted one of the earliest comprehensive evaluations of disorder, as we know it. He gathered information on 40 neighborhoods across six cities in the United States. The findings revealed a strong relationship between disorder and crime, which Skogan (1990) measured using victimization rates, but the strength of the association dropped significantly when neighborhood characteristics like poverty were incorporated into the investigation. Despite the methodological problems inherent in the design (see Harcourt 1998, 2001), Skogan (1990) concluded that disorder had a direct causal effect on crime, results that were later questioned by Sampson and Raudenbush (1999) in their seminal work on disorder. Sampson and Raudenbush (1999) have provided invaluable insights into the study of disorder. The authors examined the

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relationship between predatory crime (obtained from respondents' reports on whether they had experienced a violent victimization or household burglary/theft victimization) and disorder, controlling for concentrated disadvantage, residential stability, immigrant concentration, and collective efficacy. Their analyses revealed that the correlation between disorder and crime was positive, but the level of significance was not as high as one would have predicted given the direct relationship between disorder and crime stipulated by both Wilson and Kelling (1982) and Skogan (1990). Sampson and Raudenbush (1999) suggested that the impact of disorder on crime was influenced by the neighborhood-level variables, depicting, essentially, a possible indirect influence of disorder.

Sampson and Raudenbush's (1999) research underscored the importance of neighborhood collective efficacy. More important in crime causation, collective efficacy was identified as an integral component in the emergence of crime at the community level, especially with respect to its relationship with disorder. However, whereas for burglary, the relationship between disorder and crime was mediated by collective efficacy, in the case of robbery the impact of disorder on crime remained significant suggesting that disorder's impact was not constant across crime types. Sampson and Raudenbush's (1999) study was followed by a series of investigations that continued to support the claim regarding the weak connection between disorder and crime. In a longitudinal evaluation of disorder and crime, in the city of Seattle, Yang (2007) found that the correlation between disorder and crime was strong in certain areas of the city, but the direction of the relationship was not as predicted. Violent crime was demonstrated to cause disorder rather than vice versa. Others like Taylor (1999, 2001), and St. Jean (2007) also concluded that, ultimately, disorder did not predict crime. Consequently, the significance of disorder in

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exploring crime seemed to wane in the wake of disappointing results concerning its relationship with crime.

Renewed interest in disorder and crime emerged with the works of Bratton and Kelling (2006); Gault and Silver (2008); and Xu, Fiedler, and Flaming (2005). Bratton and Kelling (2006) suggested that the connection between crime and disorder is indeed strong but indirect, not direct as argued by Sampson and Raudenbush (1999). Disorder, they contended, leads to weakened social control which in turn provides the ideal conditions for crime to thrive. More specifically, Bratton and Kelling (2006) proposed that the "link [between disorder and crime], while clear and strong, is indirect. Citizen fear, created by disorder, leads to weakened social controls, thus creating the conditions in which crime can flourish," (paragraph 9[1]). Gault and Silver (2008), too, emphasized the importance of examining the indirect relationship between disorder and crime and suggested that in order to explain the connection it is necessary to define the nature of the relationship, whether direct, mediating or spurious. The authors posited that "if X (disorder) is hypothesized to be causally prior to Z (collective efficacy), which is hypothesized to be causally prior to Y (crime), then the relationship is mediating" (p. 243). In sum, Gault and Silver (2008) concluded that disorder influenced crime by affecting collective efficacy within the neighborhood.

Disorder weakens a community's ability to properly cultivate and nurture social ties and social control. The erosion of social ties in the neighborhood leads to, as postulated by Gault and Silver (2008) and Bratton and Kelling (2006), the worsening of crime in these neighborhoods, clearly suggesting that disorder exerts an indirect influence on crime. Nevertheless, research on the disorder-crime nexus is still somewhat divided, and debate persists concerning this

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[1] http://www.nationalreview.com/comment/bratton_kelling200602281015.asp

relationship. There is now some consensus that if not direct, disorder does have an indirect effect on crime. As Sampson and Raudenbush (1999: 648) submit "eradicating disorder may indirectly reduce crime by stabilizing neighborhoods." The current project proposes to further inform this debate by adopting an individual-level approach to the relationship between neighborhood disorder and crime. Rather than examining how disorder affects crime or victimization rates at the community level, the aim is to ascertain whether disorder has criminogenic effects at the individual level, specifically exposure to violence, association with deviant peers and more importantly antisocial and delinquent behavior in youths (Moffitt 1993; Robins 1978; Moffitt et al 2001).

<u>Reactions to Disorder</u>

The significance of disorder extends well beyond its relationship with crime. Much research has also been devoted to evaluating how people react to disorder. Of particular interest is disorder's impact on fear of crime and victimization.

Fear of Crime

Even before Skogan and Maxfield (1981) explored how people cope with crime, Wilson (1975) wrote that people feel fear because of "the daily hassles they are confronted with on the street—street people, panhandlers, rowdy youths, or 'hey honey' hassles—and the deteriorated conditions that surround them—trash strewn alleys and vacant lots, graffiti, and deteriorated or abandoned housing—inspire concern," (p. 66). These daily hassles, like the abandoned buildings, large concentrations of unsupervised teens, signs of drug use and vandalism in the Skogan and Maxfield (1981) study, significantly affect how residents view their neighborhood and perceive crime (Lewis and Maxfield 1980; Lewis and Salem 1986; Perkins and Taylor 1996; Rountree, Land, and Miethe 1994; Skogan and Maxfield 1981; Taylor and Hale 1986). The fear

elicited by disorder is oftentimes even more powerful than the fear of victimization itself. Evidence of disorder informs community residents of the deterioration of their neighborhood. Seeing evidence of drug use or being harassed by teens, suggests that social control is no longer functioning within a community and exposure to these toxic environments and situations heightens resident awareness. Signs of disorder become harbingers of things to come, like crime and further neighborhood degradation and in the end, residents of a community will react to the disorderly conditions of their neighborhood in several ways.

One popular way of dealing with disorder is to not deal with it. Residents choose to withdraw from the community or significantly limit their time spent out and about the neighborhood. Others simply become immune to their surroundings. Taylor and Shumaker (1990) suggest studies that find no effect of disorder on fear of crime do so because they failed to adequately specify the relationship. In some instances, the link between fear of crime and disorder holds more strongly for residents living in areas of medium disorder, while in others racial composition of the neighborhood may be the driving force behind this relationship (Sampson and Raudenbush 2001). There is a threshold beyond which people begin to experience less fear or concern regarding the conditions of the neighborhood in which they live. Residents become desensitized to the community conditions, no longer caring about the disorder around them (Taylor and Shumaker 1990). Tackling the disorder in communities matters. It may not only improve their neighborhood but also improve the lives of those residing in them. As Bratton and Kelling (2006) suggest, "fixing broken windows is not the panacea for all crime problems. But it's a proven base on which to build. Research suggests that citizens — especially minorities — appreciate it; it reduces fear; and it has an impact on serious crime," (paragraph 13).

Disorder and Health

As the literature on personal health has revealed, there are consequences of disorder far beyond its relationship with crime or fear of crime. In particular, studies have shown that there are serious psychological and physical costs to those living in neighborhoods riddled with disorder (Feldman and Steptoe 2004; Steptoe and Feldman 2001; Ross, Reynolds and Geis 2000). Disorder heralds the beginning of neighborhood decline, of loss of informal social control and and the worsening of community conditions. Exposure to this degradation can result in several psychological and behavioral problems in the people who experience it, often culminating in their withdrawal from community life (Sampson and Raudenbush 1999; Skogan 1990). Research on how disorder affects personal health and well-being has focused primarily, though not exclusively, on adult mental health, depression and stress.

Ross and associates (2000) for example, show how perceived disorder is fundamental in the formation of feelings of powerlessness. Neighborhood stability, measured as the percentage of residents in a neighborhood who had been living for at least 5 years at the current address, was thought to enhance neighborhood ties and local friendship networks, thus providing the necessary tools for residents to overcome disorder. Contrary to expectations, neighborhood stability does little to lessen the harmful effects of disorder. Instead, as Ross et al (2000) demonstrate, neighborhood stability only lessened the impact of disorder in more affluent neighborhoods. The authors conclude "living in a poor, stable neighborhood is associated with distress partly because such neighborhoods have the high levels of disorder associated with poverty but lack the advantages that stability provides in affluent neighborhoods for reducing disorder," (pg. 594). The continued exposure to vandalism, noise, trash, drugs and other signs of disorder erodes people's coping mechanisms, as well as their physical and mental health. It is

the potential for harm, without actually having been harmed, that negatively impacts residents' lives (Taylor and Hale 1986; LaGrange et al 1992).

There is also evidence to suggest that the concept of disorder and how it affects those who experience it transcends borders. In a series of investigations performed in London, Steptoe and Feldman (2001) and Feldman and Steptoe (2004) demonstrated that perception of neighborhood problems, defined by behaviors and situations indicative of disorder (like unruly teens and panhandling) were linked to poorer self-rated health and increased psychological stress, in addition to decreased social integration. Londoners who perceived greater community problems tended to be more socially alienated and to have forged fewer social ties with neighbors. In their 2004 study, Feldman and Steptoe corroborated their prior findings, showing that high levels of perceived disorder led to significant decreases in physical functioning.

Recently, Larkin, German, Hua, and Curry (2009) reported that increased perceived disorder was associated with acute depression, especially in individuals without the necessary financial and social resources to escape from their neighborhood's harmful conditions. The authors suggested that individual resources like wealth or good jobs enable residents to positively deal with their neighborhood environment and avoid the pitfalls of depression. Those with limited resources are sentenced to experiencing the debilitating effects of disorder, often resulting in higher levels of stress and fear. Within the current study, these findings are especially relevant because they may help clarify differences in parenting behaviors across neighborhoods of varying levels of disorder. Parents without the means to invest in promotive strategies may be forced, when faced with living in a neighborhood overwhelmed by disorder, to employ more preventative, restrictive tactics, which in turn affects how their children will prosper in their community environment.

As indicated earlier, much of the literature on the effects of disorder typically focus on adults; however disorder has been shown to have an impact on adolescents as well, in most cases through parenting practices (Aneshensel and Sucoff 1997; Greenberg, Lengua, Coie, Pinderhughes, and Group 1999; Jang and Johnson 2001; Romano, Tremblay, Boulerice, and Swisher 2005). Aneshensel and Sucoff (1997) examined how neighborhood factors, among them neighborhood hazards, operated directly on adolescent mental health and indirectly through family characteristics like socioeconomic status, structure and parental mental health. Low SES youth who lived in neighborhoods with greater levels of perceived disorder and whose parents experienced mental health problems were at increased risk for conduct problems, depression and anxiety. Romano et al (2005), like Greenberg et al (1999) and Aneshensel and Sucoff (1997), analyzed the relationship between neighborhood characteristics and adolescent conduct problems. Their focus on both disorder and collective efficacy, demonstrated that greater perceived neighborhood problems and not collective efficacy were associated with higher levels of aggression among youth. Similarly, Seidman et al (1998) highlighted the effect of disorder on adolescent behavior whereby adolescents living in communities characterized by medium levels of disorder were more negatively influenced by neighborhood conditions than were those living in the highly disordered neighborhood. Disorder, it would seem, has damaging consequences across all ages, whether it be depression and stress in adults, or aggression, antisocial behavior, deviance and delinquency in children and youth.

Conclusion

Disorder continues to inspire much research not only "because of its visual salience and symbolism regarding public spaces," (Sampson and Raudenbush, 1999:604) but because of the effects it can exert on the personal lives of those who experience it. Within the current project

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disorder is hypothesized to have both direct and indirect effects on child and youth outcomes. Disorder operates indirectly via family management strategies and more directly through exposure to community violence and association with deviant peers. This study is aimed at exploring these relationships using the Project on Human Development in Chicago Neighborhoods- Longitudinal Cohort Study.

The Neighborhood and Child Development

There has been an impressive growth of research on neighborhood context and child and youth development over the last two decades. Traditionally, this research has focused on negative child outcomes and the failure of children living in disadvantaged neighborhoods to prosper and successfully transition into adulthood (Elliott et al 2006). Specifically, studies have shown that macro-level effects of the neighborhood, like the more micro-level influences of family, school and peers, harmfully impact both child and youths. Investigations have been centered on the onset of antisocial behavior and later delinquency as well as initiation and persistence of substance abuse and early initiation of sexual relations (Beyers, Bates, Petit, and Dodge 2003; Brooks-Gunn, Duncan, Klebanov, and Sealand 1993; Browning, Leventhal, and Brooks-Gunn 2004b). Findings also suggest that children who are exposed to neighborhood conditions where violence and crime are widespread are more likely to associate with deviant peers, an association which tends to aggravate problem behavior (Dishion and McMahon 1998; Loeber, Farrington, Stouthamer-Loeber, Moffitt, and Caspi 1998). Furthermore, there are long-term ramifications to the detrimental effects of neighborhood conditions. Poor neighborhood quality at a younger age is associated with ensuing delinquency at both ages 13 and 17 (Lynam et al. 2000). Additionally, negative interactions within the community have been linked to stress and aggression during adolescence (Seidman et al 1998; Romano et al 2005; Elliott et al 2006).

Essentially, evidence illustrates the distinct effects of neighborhood characteristics on young residents' lives: there are enriching experiences through relationships with positive role models, established social networks and healthy emotional attachments when neighborhood conditions are favorable. But when conditions are unfavorable, they exert destructive effects on the residents' through exposure to violence and the development of problem behaviors (Brooks-Gunn, Duncan, Klebanov, and Sealand 1993; Cutrona, Russell, Hessling, Brown, and Murry 2000).

One way researchers have sought to detangle the complex influences of community characteristics on child outcomes (Elliott et al 2006; Leventhal and Brooks-Gunn 2000; Ingoldsby and Shaw 2002) has been to distinguish between the direct and indirect effects of neighborhood on behavior. Findings have, however, been mixed and conclusions contradictory (Kupersmidt et al 1995; Beale-Spencer et al 1997). Researchers evaluating the influences of neighborhood on development (Beale-Spencer, Coie, Jones and Swanson 1997; Kupersmidt, Griesler, deRosier, Patterson and Davis 1995; Beale-Spencer, McDermott, Burton and Kochman 1997) have found few if any direct effects of neighborhood factors. The direct influences have frequently been illustrated using neighborhood-level measures of SES or poverty (Ingoldsby and Shaw 2002), whereas the indirect effects described in the literature are believed to operate primarily through family variables. Cantillon (2006), for example, found that perceived neighborhood structure affected adolescent outcomes both directly and indirectly. Youths, living in neighborhoods where perceived advantage was higher, engaged in delinquency at lower rates-the direct impact. Perceived neighborhood advantage also served to bolster community informal social control; positive parenting practices that curtail association with deviant peers, thus indirectly influencing delinquency via the removal of more proximal causes of deviant behavior.

Cantillion's (2006) study addresses both the direct and mediating influences of neighborhood on children and youths. Unfortunately, in most cases, assessing neighborhood characteristics on development remains a methodological and theoretical challenge.

One potential explanation for the lack of consensus on how neighborhood conditions influence behavior is that the effects of neighborhood on development are age-graded (Leventhal and Brooks-Gunn 2000). The neighborhood environment is not experienced equally by infants, children, adolescents and adults, nor should it be. Contact with the community is significantly limited during childhood and often controlled by parents, other family members and caretakers, thus minimizing the direct effects noxious neighborhood environments may confer on children. The same cannot be said for children transitioning to middle school and adolescence when desire for autonomy and independence become more prevalent. In order to efficiently describe and study neighborhood effects it is necessary to fashion neighborhood research goals within a more developmentally friendly theoretical framework (Leventhal and Brooks-Gunn 2000). As children progress through each developmental epoch, especially as they move into adolescence, opportunities for parental supervision significantly decrease and youths spend more time in their neighborhoods. Exposure to the community becomes more direct as children begin to delve into their community forming ties with peers and becoming active participants within it. In disadvantaged neighborhoods, these soon-to-be teenagers are confronted with instances of violence and crime and may often form unsuitable peer relationships (Farrington and Loeber 1998).

The freedom afforded children and especially adolescents means that they may become more involved in their community's social networks, more likely to associate with neighborhood peers while unsupervised by their parents, circumstances that are more conducive for antisocial

behavior and delinquency. Neighborhood characteristics like SES, for example, can augment both emotional and behavioral problems among youth (Loeber and Wikstrom 1993; Loeber et al 1998). In fact, research suggests that the negative effect of SES may be stronger during early adolescence when experience with the neighborhood is still new, as opposed to later during the teenage years (Ingoldsby et al 2006; Brooks-Gunn et al 1993). Studies frequently fail to consider how neighborhood influences may therefore differ for early versus late teens and at what point these changes occur (Ingoldsby and Shaw 2002). Age-appropriate family management practices are critical to successfully understanding how neighborhoods affect youth behavior (Leventhal and Brooks-Gunn 2000; Ingoldsby and Shaw 2002; Brooks-Gunn et al 1993). However, few studies use data that permit such investigation.

The frequent use of cross-sectional data further contributes to the problem. For example, Beale-Spencer et al (1997) used cross-sectional data collected on 10 to 16 year olds and concluded that there are no direct effects of neighborhood on child outcomes. Similarly, Aber (1994) reported that there were few direct effects of neighborhood characteristics on the group of 5th and 6th graders studied. Contact with the neighborhood environment can be different for a 10 year old versus 16 year old, as experiences will be shaped by the child's interaction with the neighborhood and how parents choose to manage said interaction. Comparing pre-teens to late teens without accounting for how exposure to the community context may be different for each group can mask the direct effects neighborhood conditions bestow upon behavior. For instance, contrary to Beale-Spencer et al (1997), Seidman et al (1998) and Simons et al (1996) find both direct and indirect influences of neighborhood risks and hassles on the problem behavior of children whose ages ranged between 10 and 18 years. Parenting practices and exposure to the neighborhood will affect how neighborhood contexts impact behavior. However, like Beale-

Spencer and colleagues (1997), these examples use data collected at single points in time, thus making conclusions about how neighborhood conditions shape child and youth development over time difficult.

Some have addressed these concerns by using different data sets or longitudinal data like the Pittsburgh Youth Study (Loeber and Wikström 1993; Wikström and Loeber 2000). Brooks-Gunn and colleagues (1993), for example, use two data sets in their evaluation of how neighborhood structural characteristics affect child and youth outcomes. The Infant Health and Development Program (IHDP) evaluated preterm, low birth weight babies during their first 3 years of life in order to test the quality of both education and family support services. The Panel Study of Income Dynamics (PSID) gathers longitudinal information on U.S. households. The authors assessed the effects of neighborhood during infancy and early childhood (IHDP) and adolescence (PSID). The results showed that although family income and maternal educational level were significant predictors of both child and youth outcomes, the number of affluent neighbors and concentration of two-parent families also had effects on the developmental consequences above and beyond the family factors. Such findings also suggested that home learning environment versus neighborhood dimensions were more important for infants, whereas neighborhood characteristics were more significant for older children. The results support the idea that neighborhood effects are likely to be age-graded and stronger for teens.

The use of two datasets focusing on different child and youth transitional periods helps clarify to some extent how the strength of the relationship between neighborhood and child development evolves across different developmental periods. However, it should be noted that these particular datasets include subjects who, at the outset, face developmental challenges. There is a correlation between low SES and low birth weight. Additionally, low birth weight has

been linked to retardation in development (Gross, Brooks-Gunn, and Spiker 1992) and the low income families over-sampled in the PSID data also introduce potential bias in the evaluation. In order to advance our knowledge and understand the relationships between where and how successfully children grow up, data on children from diverse backgrounds, ages and ethnicities should be collected over time.

The Impact of Family Strategies on Child Outcomes

Parents and caregivers are the first line of child socialization and the importance of parenting in positive child rearing is the foundation of several explanations of delinquency and crime (Gottfredson and Hirshi 1990; Patterson, Reid, and Dishion 1992; Sampson and Laub 1993). Successful child adjustment has been linked to both the quality and quantity of parenting provided (Baumrind 1991). Just as good parenting can foster healthy child development, ineffective parenting is connected to the onset of conduct problems early on in life and later during adolescence (Patterson 1982; Patterson, DeBaryshe, and Ramsey 1989). Parents and style of parenting are of particular importance during the early years. Ineffective parenting during this critical period has been demonstrated to have an effect on child problem behavior and later deviance (Dishion 1990; Patterson et al 1989; Wakschlag and Hanns 1999). Petit and Bates (1989) illustrate how crucial parenting is during infancy, especially warm and affectionate parenting as a means of preventing later conduct problems. Shaw, Winslow, Owens, Vondra, Cohn, and Bell (1998) show that maternal responsiveness predicts lower levels of behavioral problems while Slade and Wissow (2004) find that maternal spanking of infants and toddlers predicts negative outcomes at age 4. Research also suggests that high levels of parental support at 36 months predicted increased levels of social skills and decreased aggression (Bates, Luster

and Vanderbilt 2003). From an early age, supportive parenting lays the groundwork for successful socialization.

The benefits of good parenting are not only visible during infancy and childhood, but can be seen well into adolescence and young adulthood. The review of longitudinal studies by Loeber and Stouthamer-Loeber (1986) identified critical parenting behaviors that affected a child's later involvement in delinquency. The authors' meta-analysis showed that poor parental supervision and lack of parent-child involvement exacerbated problem behavior and delinquency. Their results reflect the earlier findings of Patterson and Stouthamer-Loeber (1984) showing monitoring strategies in addition to disciplining practices as central to effective child rearing. The relationship between parents and their children is fluid and reciprocal, parents must adjust to the developing personalities of their children while restricting or providing activities that may promote or hinder a healthy development. Disciplining practices, for example, can serve as a preventative practice to curb and correct inappropriate behaviors but as much of the literature illustrates, harsh and inconsistent parental discipline can also translate into negative behaviors that do not bode well for the child in the future. Patterson, Dishion, and Yoerger (2000) found that poor discipline coupled with inefficient monitoring were key factors in the development of antisocial behavior and delinquency. Several major criminological theories highlight the significance of poor disciplining practices on child delinquency and later criminality (for example Gottfredson and Hirshi 1990; Sampson and Laub 1993). Conversely, family attachment, closeness and strong parenting skills often predict positive child outcomes (Grogan-Kaylor 2005; Henry, Tolan, and Gorman-Smith 2001).

So much of the literature on family and child outcomes has examined parenting strategies like monitoring, supervision and discipline. There is a broader group of family practices defined

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in the works of Furstenberg et al (1999), Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, and Iver (1993) and more recently Tobler, Komro, and Maldonado-Molina (2009) among others, identified as "family management." Family management practices incorporate a host of parenting strategies, routines and disciplinary actions geared toward successfully managing children's lives on a day-to-day basis (Herrenkohl, Hill, Chung, Guo, Abbott, and Hawkins 2003). Good management practices such as increased supervision, establishment of family routines and nurturing of child's growing autonomy, have been associated with decreased alcohol use during adolescence, later initiation of sexual relations and decreased incidences of violent behavior for children living in disordered neighborhoods (Herrenkohl et al. 2003; Roche and Leventhal 2009; Tobler, Komro, and Maldonado-Molina 2009). When the relationship with parents is poor and management strategies inefficiently enforced or lacking in structure, children and teens are more likely to exhibit problems (Simons, Murry, McLoyd, Lin, Cutrona, and Conger 2002; Ward and Laughlin 2003) and engage in antisocial behaviors and even later delinquency. Moreover, good family management, indicated by protective and promotive styles, can influence how adolescents relate to their peers. Lahey, Miller, Gordon, and Riley (1999) for example, found that ineffective parental management practices increased the likelihood that youths would associate with delinquent peers in addition to engaging in gang activity. Family management styles in its totality, not just monitoring or supervision affect how well children grow and develop.

The Neighborhood, Family and Child Development

Family circumstances *and* neighborhood setting are fundamental elements to the successful socialization of children and teens (Furstenberg et al. 1999; Garbarino 1982). Parents are essentially the brokers between the community and their children. Family management practices

determine from infancy well into adolescence, how much interaction a child will have with their neighborhood and continue to do so. The literature exploring neighborhood, family and child outcomes has reported that family-level measures serve to either mediate or moderate the effect of neighborhood on child development (Burton and Jarrett 2000; Ingoldsby and Shaw 2002; Leventhal and Brooks-Gunn 2000). Neighborhood contextual effects on child outcomes have often been inconclusive, but Leventhal and Brooks-Gunn (2000) suggest the lack of consistent results stem from the failure of investigators to consider that community factors typically operate indirectly through family and peer relationships. One manner in which neighborhood conditions can indirectly affect children is through the negative effect these conditions exert on parents. For instance, Conger, Ge, Elder, Lorenz, and Simons (1994) propose that low neighborhood SES causes distress in parents leading to increased depression and hostility towards their children, often expressed as harsh disciplining practices. Such hostility from parents worsens child problem behavior, leading to aggression and delinquency. Simons, Lorenz, Wu, and Conger (1993) showed that economic pressures felt by parents increased their depression which in turn decreased supportive parenting, consequentially resulting in poorer child socialization.

The impact of neighborhood on parents can result in better or worse parenting. It is also possible that neighborhood characteristics such as disorder, poverty level, SES, availability of social networks affect child development through the parental strategies that are implemented to promote healthy development within and outside the home and to manage children's exposure to the community (Ladd and Hart 1992). Parental practices within the home, such as developmental stimulation via learning experiences, may be less important during late childhood and adolescence, therefore less likely to be influenced by community conditions and less likely to affect youth antisocial behavior (Klebanov et al 1998; Leventhal and Brooks-Gunn 2000;

Beyers et al 2003). As children grow, what parents do to manage time spent outside the household becomes increasingly important. Successful family management strategies are designed to shield children from the potentially deleterious effects of neighborhood conditions like disorder, deviant peer influences and violence (Steinberg et al 1990; Furstenberg et al 1999) and are therefore especially critical during the transition to adolescence.

Parenting styles and strategies change as a child grows: from monitoring, disciplining and supervising the child while in the home, to focusing efforts on the outside world when the child begins school (Belsky 1984; Darling and Steinberg 1997; Furstenberg 1993). There are several reasons why neighborhood characteristics may more severely affect older children and teens. Parents are more likely to be actively involved in supervising and monitoring their infants and younger children, as well as controlling access to the neighborhood and establishing relationships with appropriate peers. Parents' ability to maintain the style and quality of vigilance diminishes as children begin school and becomes more difficult during later childhood and adolescence, as youth spend more unsupervised time in and around the neighborhood. Thus, how parents monitor and supervise their children necessarily changes as children progress from infancy through to childhood and into adolescence. Direct monitoring and supervision becomes particularly challenging as children enter adolescence and struggles for independence and time spent alone in the neighborhood increases (Farber and Iversen 1998; Iversen and Farber 1996). Parental supervision strategies must consequently adapt to the evolving circumstances that emerge during the teenage years (Eccles et al. 1993) and should be studied in greater detail during those years.

Compared to younger children, teens often spend more time in their community, forming peer connections and becoming more involved in social networks (Ward and Laughlin 2003).

O'Neil, Parke, and McDowell (2001) found that perceptions of the neighborhood, the risks as well the opportunities afforded, influenced youth developmental outcomes via family management practices. Specifically, the authors reported that in noxious neighborhood environments increased parental supervision and monitoring resulted in more positive outcomes and effective socialization. The interaction of effective family practices and neighborhood conditions is, in fact, one of the cornerstones of successful adolescent development. Daily routines like homework checking, the establishment of curfews and outside-the-home monitoring provisions contribute to positive adolescent growth (Furstenberg et al 1999). But for families living in communities laden with crime and disorder preventative practices are the principle means of family management (Spencer and Dornbusch 1990). These comprehensive restrictive strategies are critical to the successful upbringing of teens and their maturation into adulthood (Steinberg 1990; Furstenberg et al 1999; Elliott et al 2006). Good family management is thus the key to positive development when children and youth reside in deleterious neighborhoods. Good parenting can counterbalance the obstacles of growing up in a disadvantaged community, but youths who are not adequately supervised and monitored are more likely to exhibit behavioral problems and higher levels of antisocial behavior (Beyers et al 2003; Elliott et al 2006; Furstenberg et al 1999). Regulation of adolescent behavior when coupled with positive and efficient parenting can improve the chances of success for children. Preventing the onset of certain behaviors, like early sexual initiation and delinquency, further bolsters these chances for a positive outcome (Simons et al 2005).

Recently, Roche and Leventhal (2009) also demonstrated the significance of effective family management for families living in disordered neighborhoods. Their analysis of teen sexual behavior revealed that for African American and Latino youths living in disordered

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communities, good family management practices prevented the early onset of sexual relations. Established family routines and parental management beyond the walls of the home are powerfully related to the decreased likelihood of engaging in early sexual behaviors. When strategies are poorly employed or not at all, conduct problems are more likely to develop. The set of strategies parents in disadvantaged and disordered neighborhoods have sought to use are often aimed at restricting their child's activities and increasing parental knowledge of where and with whom the children are spending time. These practices are frequently an attempt by parents to prevent exposure to harmful neighborhood conditions like community violence and deviant peers (Brooks-Gunn et al 1993; Beyers et al 2003; Ingoldsby and Shaw 2002). If these strategies fail, contact with the neighborhood environment becomes commonplace, as does association with neighborhood peers and exposure to violence.

Not only are family management strategies a function of both neighborhood attributes and child developmental stage, but also the product of the social and financial resources at the family's disposal. The availability of resources can help to reduce the harmful effects of neighborhood conditions. For parents living in disadvantaged neighborhoods, controlling their children's freedom is often the only recourse available (Furstenberg et al 1999) and the search for enriching opportunities believed to be impossible (Spencer and Dornbusch 1990). Preventative (restrictive) practices are the go-to method for parents who are unable to financially seek opportunities outside the community. This is especially true for families living in neighborhoods where disorder, physical and social, is widespread (Elliott et al 2006). In communities characterized by high levels of disorder, parents and their family management practices becomes a fence between the deleterious effects of disorder and their children. The

protective effects of family management can work to counterbalance the negative influences "bad" neighborhoods confer (Brody, Ge, Conger, Gibbons, Murry, Gerrard, and Simons 2001).

Exposure to Violence

Exposure to violence within and outside the home is highly prevalent in areas where poverty and disadvantage is rampant (Aber 1994). Establishing boundaries for youths and increasing parental supervision for the periods when the teens are not at home have been shown to decrease the incidence of exposure to community violence (Dishion and McMahon 1998). Experience with violence may lead to a host of potential physical, emotional and behavioral problems in children and adolescents (Osofsky 1995; Salzinger, Feldman, Ng-Mak, Mojica, Stockhammer, and Rosario 2002). Both exposure to parental and community violence has been linked to delinquency (Widom 1989) and how parents limit this exposure helps shape how their children are socialized. Parents' management of the time their children spend in the neighborhood, controlling for the exposure to violence within the home, contributes to our understanding of the interaction between neighborhood, family and child/youth outcomes, as well as clarifies why exposure to community violence is less pervasive and damaging to younger children (Selner-O'Hagan, Kindlon, Buka, Raudenbush, and Earls 1998).

Deviant Peers

Just as neighborhood attributes can increase the likelihood of exposure to violence, the neighborhood also provides an ideal situation in which associations with peers may flourish. Neighborhoods, like schools, provide a footing for peer group formation and neighborhood characteristics significantly affect how and what kinds of peer groups are formed (Elliott et al 2006). Positive family management strategies decrease the likelihood that children will start and maintain associations with deviant peers and "parents who are close to their children are more

consistently conscious of their children's associates and that awareness reduces the chances that their children will take up with delinquent friends," (Warr 2005: 96). To an extent, parents may or may not contribute to these peer group formations by allowing their children unfettered admission to the neighborhood (Elliott et al 2006). For example, Criss, Shaw, Moilanen, Hitchings, and Ingoldsby (2009) show that family characteristics in addition to neighborhood conditions can influence early childhood outcomes, just as family, neighborhood and peer relations do in middle childhood. Competent family management is necessary for preventing the formation of deviant peer relations and possible ensuing antisocial behavior and delinquency (Furstenberg et al 1999; Criss et al 2009). Therefore, the methods parents use to manage the outside world, curtailing access to deviant peers and the neighborhood, and establishing familiarity with their children's friends may help uncover why neighborhood effects, but also why some children and teens fare better than others while living in the same community (Furstenberg et al 1999; Elliott et al 2006).

Conclusion

While evidence suggests that the potential adverse long-term effects that disorder may place on younger residents is attenuated by family management practices, less is known about how community disorder may affect these practices. The literature has addressed how poverty, SES, disadvantage may influence parenting (Conger, Conger, Elder, Lorenz, Simons, and Whitbeck 1992; Conger et al. 1994; Elder, Eccles, Ardelt, and Lord 1995) and although some research highlights the relevance of disorder (Roche and Leventhal 2009; Elliot et al 2006; Seidman et al 1998) it remains understudied. Furthermore, there is much to be discovered about how significant family management strategies within and outside the household are in relation to restraining youth access to the harmful conditions of disordered neighborhoods like violence and

deviant peers. Parenting and management are especially significant in protecting children from

negative influences, particularly when families reside in harmful neighborhood contexts. Parents

regulate management styles to limit their child's access to negative conditions. Deviant peer

associations and exposure to community violence are among the most deleterious neighborhood

influences.   While examinations of family, antisocial behavior and delinquency-related

behaviors continually enhance our understanding of these behaviors (Apel, Bushway, Brame,

Haviland, Nagin, and Paternoster 2007; Apel and Kaukinen 2008; Beyers, Bates, Petit, and

Dodge 2003; Dishion, Capaldi, and Yoerger 1999; Sullivan 2005; Beyer, Loeber, Wikström and

Stouthamer-Loeber 2001; Sullivan 2005; Cernkovich, Lanctôt and Giordano 2008) much more

can be done in terms of incorporating the role of neighborhood in the study of family practices

and child development.

Extending the Literature

The current study proposes to extend the literature on disorder, family management and

child development. Ample research has sought to explain how disorder is related to crime,

psychological and even physical well-being, but less is understood regarding if and how parents

adopt different family management practices in response to the disorder in their neighborhood.

Advances have been made in the study of neighborhood context and child socialization, but

studies have frequently used neighborhood socioeconomic measures and have thus overlooked

the potential importance of disorder. Disorder in the neighborhood has been shown to notably

contribute to problem behavior during adolescence and psychological and physical health during

adulthood (Seidman et al 1998; Elliott et al 2006; Ross et al 2000). The explanations for why

disorder can exert powerful effects on child behavior vary, with the most commonly cited

explanation focusing on family factors (Seidman et al 1998; Elliott et al 2006). Therefore, one of

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the main objectives is to expand the role of disorder into the developmental research arena by examining how neighborhood disorder affects child and adolescent outcomes.

In the current project, the impact of neighborhood disorder, like many neighborhood characteristics, is believed to directly influence child and youth development through exposure to neighborhood conditions and indirectly affect outcomes via family management strategies. These methods include monitoring, supervision and disciplinary practices. Several researchers underscore the importance of good family management but how family management is shaped by disorder remains more of a mystery to be explored and explained. Family management must be adjusted on two fronts: in response to neighborhood disorder and in response to child's needs, in particular during the transition to adolescence (Furstenberg et al 1999; Ingoldsby and Shaw 2002; Leventhal and Brooks-Gunn 2000). Another aim of this project is to augment research on family management and its impact on child and youth outcomes, by using a longitudinal cohort study to assess how family management practices may be different for early versus late adolescents and in response to conditions of neighborhood disorder.

Filling in the Methodological Gaps in the Literature

Three methodological concerns emerge from the extensive research on neighborhood context (especially disorder), families and child outcomes. First, the need to establish proper causal order is critical to understanding the relationship between family practices and child development. Second, selection bias must be addressed as it can be a problem particularly in neighborhood studies (Kroneman, Loeber, and Hipwell 2004; Leventhal and Brooks-Gunn 2000). And third, misspecification problems pertaining to family styles, disorder and proximate predictors of antisocial behavior are also relevant.

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Causal Inferences

As already mentioned, there is little consensus regarding the significance of neighborhood effects on child behavior. Some argue there are no effects, others that effects are indirect and a small few that there are both direct and indirect influences of neighborhood characteristics on child socialization. The focus on specific age groups and overreliance on cross-sectional data has frequently hindered causal inference and the ability to examine these relationships. Furthermore, limiting research to younger groups can obfuscate the mechanisms of how neighborhood exerts effects on development. The availability of longitudinal cohort data will permit establishing the time ordering of events thus permitting adequate causal inferences to be made.

Selection Biases

Although significant advances have been made in portraying the relationship between neighborhood context and child socialization, self-selection bias remains an issue (Tienda 1991; Leventhal and Brooks-Gunn 2000; Kroneman et al 2004; Ingoldsby and Shaw 2002). Families choose, to a certain degree, the community in which they live. Choices are made on the basis of numerous factors including financial restrictions, family ties, housing options and shared values with others within the neighborhood (Ingoldsby and Shaw 2002). Families who must or choose to live in poor, disadvantaged neighborhoods may differ on key characteristics to those who live in more affluent, socially ordered neighborhoods. Family composition, social ties, religious preferences, whatever motivates the choice to live in a neighborhood can also shape the manner in which parents choose to socialize their children. So, problem behavior may be caused by underlying key characteristics, or at least in part, influenced by them. The failure to account for selection bias may confound any findings regarding child behavioral outcomes. One way to

address this problem is to control for family socioeconomic status thus minimizing the problem of self-selection bias (Ensminger, Lamkin and Jacobsen 1996; Winslow 2001).

<u>Misspecification Errors</u>

Model misspecification, in this type of research, can arise from the failure to consider a fuller array of parenting behaviors and how these affect more proximal predictors of antisocial behavior. In effect, "studies that do not adjust for family and individual-level characteristics cannot truly estimate neighborhood effects given these factors influence both selection of neighborhoods and youth outcomes," (Chauhan and Reppucci 2009: 403). Not many studies include parenting strategies for the times children spend outside the home (see Eccles et al 1993; Furstenberg et al 1999) as most research tends to examine parenting practices inside the home only and often center their efforts on monitoring, supervision and disciplining strategies (Furstenberg et al 1999). Exploring how parents steer their children away from harmful neighborhood environments through the use of promotive strategies and deal with peer relationships that are not productive (Furstenberg et al 1999) is critical to understanding how neighborhood constructs may affect child behavior. Management outside the home is especially important for families living in disadvantaged neighborhoods. Not taking into account that parenting practices can affect child behavior through other variables like peer association and exposure to violence within the community may also result in inaccurate, biased results and inefficient parameter estimation. In sum, how parents manage the outside world is as important as how they monitor, supervise and nurture their children within the home. Neighborhood research that includes this dimension can thus avoid the pitfalls of potential model misspecification (Leventhal and Brooks-Gunn 2000; Ingoldsby and Shaw 2002).

Summary and Conclusions

The association between individual, family and environment is complex (Wikström and Loeber 2000) and more attention should be paid to how community factors influence both parent and child. Just as strong, socially cohesive and affluent neighborhoods encourage parents to invest in and supervise their children's well-being and positive development, poor, disordered neighborhoods may constrain parental access to such resources (Chase-Lansdale, Gordon, Brooks-Gunn, and Klebanov 1997; Klebanov, Brooks-Gunn, Chase-Lansdale, and Gordon 1997). Parental allocation of management practices depends on the conditions of the neighborhood and how much freedom should and can be afforded to their children. The dearth of investigations that have focused on these relationships is probably why some have concluded that magnitude and strength of neighborhood effects are much smaller than those of family or socioeconomic indicators (Leventhal and Brooks-Gunn 2000). A majority of evaluations were not designed to or do not contain the necessary information to portray both neighborhood conditions and changes in family practices over time (Burton and Jarrett 2000; Ingoldsby and Shaw 2002). Furthermore, the family measures employed are often depictions of strategies used within the home and do not reflect how parents deal with children's time spent outside-the-home. This dissertation is the opportunity to resolve some of these issues and further unpack the relationship between neighborhood, family and child outcomes by focusing on disorder, family management practices within and outside-the-home and how these conditions may impact antisocial behavior and its more proximal mechanisms of exposure to violence and peer deviance.

CHAPTER 3- Theoretical Framework

Family strategies adopted by many parents are, to some extent, done so in response to the level of risk present in their neighborhoods (Furstenberg et al. 1999). Faced with disorder, evidence of drug use, prostitution and uncontrollable teens, many parents seek to adjust their parenting and management styles to protect their children from the damaging effects of these conditions (i.e. exposure to violence, association with deviant peers). Some parents respond to poor circumstances by using more preventative parenting practices, while others choose to foster enriching activities for their children (Earls, McGuire, and Shay 1994; Furstenberg 1990). For families who perceive their communities as dangerous and risky, evidence suggests that employing preventative (also defined as protective) strategies may help decrease antisocial behavior in their children (Eamon 2001). There are few studies, however, that have actually examined parental management styles, whilst also including neighborhood conditions and youth outcomes. The present study proposes to address all three, by employing a theoretical framework derived from Furstenberg et al's (1999) family management model.

Furstenberg et al's (1999) Family Management Model

Parents play an integral part in the successful rearing of their children. The quality of relations between parent and child reflect significantly upon the child's individual developmental trajectory (Maccoby and Martin 1983). From birth, parents are the mediators between the child and the surrounding environment, making decisions about where to live, where to send their children to school and to an extent, who their friends are (Furstenberg 1993). Research on how parental strategies affect child behavior has focused primarily on in-home settings frequently overlooking how parents manage the time children spend away from the home (Patterson 1982;

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1986; Patterson, DeBaryshe, and Ramsey 1989; Patterson and Stouthamer-Loeber 1984a).

Furstenberg and colleagues (1999) posit that as important parenting within the home may be,

management outside the home is equally so, particularly during adolescence. The techniques

parents use when at home and those adopted beyond the household walls when children are out

in the community and beyond, are crucial precisely because these practices curtail exposure to

detrimental neighborhood contexts, among them access to deviant peers and violence.

Evaluations of these external parental strategies are limited, but sorely needed as these practices

highlight and may possibly explain why some children blossom in the face of neighborhood,

economic and familial adversity, whereas others not only fail to thrive but develop serious

behavioral problems leading to delinquency (Furstenberg et al. 1999). The elements of interest

from the Furstenberg et al (1999) are depicted in *Figure 1* and summarized below.

Neighborhood

Dangers

Opportunities

Family Management Style- Protective vs Promotive

In home
Promotive
Developmental
Stimulation
Preventative
Protective Practices
Supervision
Discipline

Outside home
Promotive
Youth Activity
Involvement
Family Shared Activities
Preventative
Restrictiveness /
Monitoring

Resources

⟶ **Direct Effects**

- - -> **Indirect Effects**

FIGURE 1: Illustration of Furstenberg et al's (1999) Theoretical Model

Family management refers to the manner in which parents structure their children's experiences both at and away from home (Eccles 1992). Family management is not merely the monitoring and disciplining of children, but the active seeking of opportunities that steer children away from the dangers of their environment towards more productive endeavors like church groups, sports and other organizational participation. The model focuses on both preventative and promotive strategies. During the time spent at home, parents institute preventative practices by regularly talking to their children about sex, drugs and negative peer influences. Disciplinary practices and rule enforcement are also part of the these strategies, as is supervision for when the children are home. Preventative strategies outside the home focus on controlling access to the community, either via rule enforcement or strict monitoring practices for when the children are out and about in the neighborhood. Promotive strategies are those that parents employ to stimulate the child (like providing them with books, discussions about daily activities and homework review) and to establish positive communication between themselves and their child. Opportunities are also sought in community involvement like church activities, scouting and in the promotion of children's skills though art, music and sports. Other promotive methods implemented outside the home include involvement in shared activities where parents participate in outings with their children.

Neighborhood conditions determine, according to Furstenberg and colleagues, the type of management that will be implemented. The availability of opportunities in the neighborhood offers parents the chance to promote extracurricular skills but impoverished, disadvantaged neighborhoods are often incapable of sustaining and providing these activities, meaning parents must seek them elsewhere. Parental ability to go beyond the neighborhood in search of opportunities is frequently contingent on their financial resources. Furstenberg et al (1999)

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theorize that parents in disadvantaged neighborhoods are more likely to resort to preventative

rather than promotive family management simply because they lack the money to access

opportunities outside their community. Thus, how neighborhoods impact family management, or

rather how parents adopt their strategies according to neighborhood disorder is of particular

relevance to the current study. If neighborhoods are deemed disorderly and troubled then parents

may need to more actively protect their child from exposure to the community, whether through

promotive and preventative strategies when resources are available, thus enabling positive

opportunities for the child, or through preventative strategies only, where the child is subject to

higher levels of monitoring and restriction.

Defining and Measuring Disorder

Disorder has been defined in several ways: from neighborhood hassles/problems to

community incivilities (Romano, Tremblay, Boulerice, and Swisher 2005; Seidman et al. 1998;

Taylor 1997; 2002). Wilson and Kelling (1982) adopt a more criminogenic meaning of disorder,

describing it as an accumulation of minor violations, whereas Sennet (2009) suggests that

disorder may be characterized as perceived neighborhood decay. One of the main criticisms

levied at disorder research has been the overdependence on experiential measures of community

disorder (elicited from surveys or interviews). Consequently, researchers have attempted to

define neighborhood disorder by objectively obtained measures and not the perceptual measure

so often used in the disorder literature (Sampson and Raudenbush 1999). One of the potential

caveats of using perceived disorder is its aggregation to the neighborhood level, which may mask

individual differences in how residents react to the disorder in their community. However,

recent discussions on the merit of perceptually measured disorder (Sampson 2009; Sennet 2009)

demonstrate its utility in research. Sampson (2009) reevaluated the relevance of perceived

disorder, by examining the effect of neighborhood-level shared perceptions of disorder on individual perceived disorder, while controlling for a wide array of mechanisms. He concludes that "despite these stringent controls, there was a large effect of shared perceptions of disorder in 1995 – and not present levels of observed disorder – on an individual's perceptions up to seven years later. That social perceptions have such persistent and strong predictive power adjusting for current and lagged observed levels of disorder is rather remarkable and suggests in a different way the sensitivity of humans to the evaluations of others," (pg. 20).

Establishing an accurate definition of disorder is made more challenging by those who divide disorder into a physical and social component. Sampson and Raudenbush (1999: 604) view social disorder as "behavior usually involving strangers and considered threatening, such as verbal harassment on the street, open solicitation for prostitution, public intoxication, and rowdy groups of young males in public," and physical disorder as "the deterioration of urban landscapes, for example, graffiti on buildings, abandoned cars, broken windows, and garbage in the streets," a definition similar to that proposed by Skogan(1990). Some argue that these two forms of disorder are distinct enough that they should be analyzed separately (see for example Yang 2007). However, "results are so similar for physical and social disorder that [they can be] combined into a summary index of disorder," (Sampson and Raudenbush 1999: 626). For the purposes of this study I shall be employing the Sampson and Raudenbush (1999) / Skogan (1990) definition of disorder and using the disorder variable provided by the PHDCN Community Survey. The measure is a perceptually-based neighborhood level disorder variable which has been amply used throughout the disorder literature (Roche and Leventhal 2009; Sampson and Raudenbush 1999; Skogan 1990).

Disorder, Antisocial behavior and Family- Putting it all Together

Antisocial behavior is a major component in both delinquency and crime. "Adult antisocial behavior virtually requires childhood antisocial behavior, yet most antisocial youths do not become antisocial adults," (Robbins 1978: 611). Antisocial behavior acts, in some cases, as a precursor to serious delinquency and later crime (Farrington 1989) or as a behavior that temporarily spikes during adolescence then cools as the teen matures (Moffitt 1993). There are a plethora of theories and models to explain the development of antisocial behavior, but few manage to simultaneously assess neighborhood conditions, family and child behavior. The literature on developmental pathways has illustrated distinct patterns of antisocial behavior depending on the age of the children under study (Ingoldsby and Shaw 2002) but again, how these behaviors are influenced by neighborhood context can be further developed as can the question of whether and how disorder affects antisocial behavior in children and youth. Disorder may affect antisocial behavior via family management practices or it may act more proximately to exacerbate conduct problems through exposure to community violence and peer deviance. Several studies (Brooks-Gunn, Duncan, Klebanov, and Sealand 1993; Greenberg et al. 1999; Patterson 1982; Simons et al. 1996) have demonstrated the importance family plays in the development of child/youth problem behaviors, but whether parenting is shaped by community conditions is not as clear. How parents react to their neighborhood environment may reflect strongly on how they decide to care for their children, especially when parents experience their neighborhoods as risky and dangerous (Beale Spencer and Dornbusch 1990; Steinberg 1990).

From crime (Skogan 1990) to feelings of powerlessness (Geis and Ross 1998; Steptoe and Feldman 2001) research has documented the negative consequences of disorder. Geis and Ross (1998) for instance, conclude that "people who live in urban areas and high poverty

neighborhoods report more neighborhood disorder" (p. 233) which deeply affects perceived

powerlessness. The experience of disorder is independent of crime, in that, people who perceive

their neighborhood as disorderly are not necessarily exposed to crime and victimization.

Community disorder and incivilities negatively impact residents, increasing fear and stress and

decreasing psychological health, regardless of whether crime rates in the neighborhood are on

the rise (Geis and Ross 1998). Neighborhood disorder matters because it shapes how residents

respond to and act within their communities and will influence how people manage their social

interactions with other neighborhood members (Wiles 2009). Reactions to disorder influence

how a neighborhood develops over time, not only shaping social behavior (Sampson 2009), but

affecting how parents themselves socialize their children.

In their analysis of both quantitative and qualitative data collected in Philadelphia,

Furstenberg et al (1999) found that family and parent characteristics significantly contributed to

how families were managed. I suggest that responses to neighborhood disorder may also be a

function of family characteristics. For example, two families living in neighborhoods that are

equally high in disorder may vary in terms of resources available to them. If one family has

considerably more resources (income, parental level of education, assets) than the other, they

will be able to adopt more promotive strategies, investing in their children's participation in

extra-curricular activities whereas the less affluent family may need to rely on more preventative

strategies, restricting children's access to the neighborhood. Family management techniques will

also depend on the levels of neighborhood disorder. A family living in a moderately disordered

neighborhood may use less restrictive management practices. These children are therefore able

to roam their community without the protective benefits of parental restrictive practices such as

supervision and monitoring and are therefore more likely to be directly exposed to their

neighborhood environment. The increased contact with neighborhood disorder places them at risk for violence, association with deviant peers and ultimately in danger of developing or worsening antisocial behavior.

Proximal Mechanisms of Antisocial Behavior

Exposure to Violence

Management of the outside world, though important throughout childhood, becomes especially so during adolescent years (Furstenberg et al. 1999). Not only is adolescence a period of great change, but a time when conduct problems are more likely to emerge (Brooks-Gunn, Duncan, Klebanov, and Sealand 1993; Leventhal and Brooks-Gunn 2000; Moffitt 1993). Families, or rather, family management styles, provide protection from the neighborhood and more specifically from exposure to community violence (ETV). ETV, whether directly experienced or witnessed, has significant causal connections with poor behavioral outcomes (Halliday-Boykins and Graham 2001; Molnar, Roberts, Browne, Gardener, and Buka 2005; Weaver, Borkowski, and Whitman 2008; Widom 1989). Violent victimization predicts later aggression, especially in the absence of quality parent-child relations (Aceves and Cookston 2007) as well as both short- and long-term criminal behavior (Fagan 2003). Some evidence even suggests that witnessing violence can have a stronger impact on antisocial behavior than actually experiencing violence (Eitle and Turner 2002; Herrera and McCloskey 2001).

Across the board, findings have portrayed the deleterious effects of ETV on child behavior. "Children and adolescents who experience violence are more likely to engage in antisocial behavior," (Chauhan and Repucci 2009: 402) and to experience psychological trauma (Buka, Stickick, Birdthistle, and Earls 2001). In poor, crime ridden and disadvantaged communities, experiences with violence are extremely prevalent (Bell and Jenkins 1993; Gorman-Smith and

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Tolan 1998; Muller, Goebel-Fabbri, Diamond, and Dinklage 2000). Parents can affect their children's ETV through limit setting and restrictive family management. Studies show that protective strategies used by parents reduce both ETV and conduct problems (Franke 2000; Laird, Petit, Bates, and Dodge 2003; Loeber and Dishion 1983; Masten and Coatsworth 1998). Detailing the role of ETV within the community in the current study shall contribute to our understanding of how the noxious effects of community disorder extends not only to families but how it foments negative consequences for children who are exposed to it. This shall, in turn, provide us with more information about what efforts are needed to not only promote successful child development but to further identify family management practices that are especially effective in disadvantaged communities.

Association with Deviant Peers

As children begin to explore their neighborhoods and schools, parents become *the* gatekeepers between the potentially damaging effects of neighborhood conditions and peer influences (Furstenberg 1993; Furstenberg et al. 1999). Like the role of parenting in delinquency and antisocial behavior, the role of peers has been amply discussed in the criminological literature (Akers 1998; Maimon and Browning 2010; Osgood and Anderson 2004; Osgood, Wilson, O'Malley, Bachman, and Johnston 1996; Sampson and Laub 1993). Although a great deal of research has been dedicated to explaining how associations with deviant peers leads to increased antisocial behavior (Fergusson and Horwood 2002; Kirk 2006; Lansford, Criss, Petit, Dodge, and Bates 2003; Patterson, Dishion, and Yoerger 2000), Kirk (2006: 112) still notes that "research has consistently shown a substantial positive association between peer behavior and delinquency, though the reason for this association is debatable (Sampson and Laub 1993; Warr 1993)." Sampson and Laub (1993), for example, maintain that the effects of community

socioeconomic disadvantage on crime are mediated by family, school and peer factors, while Patterson et al. (1989) posit that it is the interaction between poor child socialization and bonding with deviant peers that leads to increased antisociality and delinquency.

Recent discussions on peer deviance and delinquency have looked at the role of opportunity and routine activities theory to explain why peer behaviors may negatively influence children and teens. Osgood and colleagues (Osgood et al. 1996) posit that unstructured socializing with peers can lead to increased delinquency especially when parental monitoring is absent or deficient. Maimon and Browning (2010) expand upon Osgood et al's (1996) work and show that neighborhood characteristics, namely collective efficacy, affect unstructured socializing with peers which in turn influences violent behavior. They report that in neighborhoods characterized by high disadvantage, adolescents tend to have lower instances of unstructured socializing most likely due to increased parental monitoring. Parents in more advantaged neighborhoods use less restrictive methods which grant children the freedom to engage in unsupervised behaviors and peers interactions. In a similar vein, Seidman and associates (1998) found that adolescents in moderate, as opposed to high risk neighborhoods, exhibited greater levels of antisocial behavior, likely due to unsupervised time spent in the neighborhood and association with peers. Family management practices (which include supervision and monitoring), structured activities and associations with deviant peers are examined here and are hypothesized to influence antisocial behavior precisely because parenting strategies can restrict or foster opportunities for children and teens to socialize with peers.

Time away from home, without parental supervision gives youths the chance to explore their surroundings and form friendships with other children and youth in the community. An integral part of family management, outside-the-home monitoring is the means through which

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parents can supervise their children and keep tabs on who they spend time with, thus limiting

their children's opportunity to engage in deviant behavior. The impact of peer deviance is found

to be particularly damaging for youths who reside in deprived neighborhoods (Brody et al.

2001). If preventative parenting serves as a protective factor for children living in disadvantaged

communities, by restricting exposure to negative peer influences, then inadequate parenting does

the opposite by enabling these associations to take place. Ineffective family management

characterized by parents' failure to monitor and discipline their children, to set limits on peers

interactions and reduce exposure to the neighborhood can have adverse consequences for

children. Parents' knowledge of their children's whereabouts and acquaintance with their friends

can serve to reduce the risk of antisocial behavior (Lahey, Van Hulle, D'Onofrio, Rodgers, and

Waldman 2008). Their value and importance in explaining child behavior should not be

overlooked. Understanding the family and neighborhood context in which peer deviance

negatively influences antisocial behavior in youths is critical to clarifying the complex

interrelationship between neighborhood, family and antisocial behavior.

Theoretical Relevance

The theoretical framework detailed above provides the foundation upon which this

exploratory study rests. While not addressing a specific theory of deviance, the current study

builds upon previous explanations of antisocial behavior and delinquency by incorporating both

a macro-level component- disorder and micro-level components- family management and

proximal mechanisms of antisocial behavior. The models explored here provide a foundation

and framework applicable to several theories from community-based explanations of crime

(Bursik and Grasmick 1993), developmental theories (Sampson and Laub 1993) and even

theories of victimization (Hindelang et al 1978). More importantly, the connections described here provide a bridge between community, family and youth behavior.

The specific examination of disorder underscores the importance of how parents react to the tenable conditions of their neighborhood, to what they witness and experience. Disorder can be viewed as the physical expression of the breakdown of social control. Demonstrations of disorder as it diffuses throughout the community serve as cues to residents, signaling the demise of both social control and ties amongst neighbors (Geis and Ross 1998). Furthermore, observable signs of disorder "indicate a potential for harm- that people nearby are not concerned with public order and that local agents of social control are either unable or unwilling to cope with local problems," (Ross et al, 2000: 584). Disorder essentially acts as a bridge between the neighborhood and residents' reaction to their community environments, a bridge that is one of the concentrations of the proposed theoretical framework.

The proposed framework also extends current theoretical treatises on the relationship between parenting and antisocial behavior by closely examining management practices parents adopt for periods when their children are not at home. The overreliance on within home monitoring and supervision has overshadowed the importance of what happens during these times. Thus the exploratory nature of this dissertation lends itself to the unpacking of relevant predictors of antisocial behavior that have been, to date, either overlooked or understudied.

Research Questions and Hypotheses

People experience their neighborhoods differently, which can and often does, dictate how much they invest in their community (Wikström and Svensson 2008). Parenting is an evolving process and an adaptation to the needs of children as they transition from childhood to

adolescence and beyond. Successful family management amidst neighborhood disorder reduces the likelihood of negative child and youth outcomes and practices that seek to limit children's exposure to the community may also serve to prevent possible instances of violence and potential association with deviant peers. The objectives of this dissertation are: 1) to examine how neighborhood characteristics like disorder may influence family management practices, in particular strategies adopted for when children are not at home; 2) to explore the relationship between within the home and outside the home family management strategies and child/youth negative outcomes; 3) to disentangle the direct and indirect effects of neighborhood disorder on child and youth antisocial behavior; and 4) to explore the relationship between neighborhood disorder, family management styles and antisocial behavior. In order to address these aims several research questions and associated hypotheses were developed and are presented below, as is a diagrammatic representation of these questions.

Research Question 1: What are the relationships between neighborhood disorder and different family management practices? Does neighborhood context affect parental management decisions and do neighborhood effects on family management differ between within and outside the home parenting strategies?

Parents living in disordered, noxious neighborhoods resort to different family management practices as a way to curtail their children's access to the community. Research question 1 addresses the overarching question of how neighborhood disorder and family management strategies relate to each other. For example, some parents when faced with deleterious neighborhood conditions seek to attenuate the potential effect of the neighborhood by promoting their child's skills and emphasizing school and other beneficial activities (Elliott et al. 2006; Furstenberg 1993; Furstenberg et al. 1999), when resources are available or using more preventative strategies, like increased monitoring, when they are not.

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H₁: Parents living in more disordered neighborhoods are more likely to increase preventative strategies.

H₁ₐ: The relationship between disorder and discipline, supervision, conversations about alcohol, health and sex, restrictiveness and parental familiarity with their children's peers will be positive.

H₁ᵦ: The relationship between disorder and developmental stimulation and youth and family activity involvement will be negative.

H₂: After controlling for neighborhood structural characteristics and collective efficacy, disorder will still have an effect on family management.

Research Question 2: How do family management practices affect antisocial behavior?

Parents help their children avoid the dangerous pitfall of a harmful neighborhood by successfully managing the time children spend away from the home. Research question 2 and hypotheses address how family management may affect child antisocial behavior, and whether these effects are influenced by exposure to violence and association with deviant peers.

H₃: Family management will have a direct effect on antisocial behavior, but this impact will vary by type of management practice.

H₃ₐ: Harsh discipline will have a direct, positive effect on antisocial behavior. Youth subjected to higher levels of discipline will exhibit more antisocial behavior.

H₃ᵦ: Increased developmental stimulation, supervision, and conversations about alcohol, health and sex will predict lower youth antisocial behavior.

H₃ᵪ: Youths who participate in more activities and family outings, who are not permitted to spend time unsupervised in the neighborhood and whose parents know their peers will exhibit less antisocial behavior.

H₄: Exposure to violence and association with deviant peers affects the relationship between family management strategies (in particular restrictiveness and peer knowledge) and antisocial behavior. Increased exposure to violence and association with deviant peers will increase youth's expected involvement in antisocial behavior and delinquency.

H$_5$: The relationship between outside the home management and antisocial behavior is more likely to vary across neighborhoods, than is the relationship between within the home management and antisocial behavior.

Research Question 3: How does neighborhood disorder affect antisocial behavior? Is the relationship between disorder and child outcomes influenced by child exposure to violence and association with deviant peers?

Much research has been dedicated to describing neighborhood effects on child behavior, frequently focusing on either the direct effects of neighborhood factors, or the identification of the mediating influences of more proximal mechanisms of antisocial behavior. Both are examined here by first looking at the direct impact of disorder on antisocial behavior and then on the mediating influence of both exposure to violence and association with deviant peers.

H$_6$: Neighborhood disorder will increase the risk of youth involvement in antisocial behavior.

H$_7$: The influence of neighborhood disorder on youth involvement in antisocial behavior will be mediated by the proximal mechanisms of antisocial behavior- exposure to violence and association with deviant peers.

Research Question 4: What is the relationship between neighborhood disorder, family management, exposure to violence, peer deviance and antisocial behavior?

H$_8$: Parenting practices, in particular restrictiveness will have a greater negative influence antisocial behavior than the positive effect of neighborhood disorder. The individual level effects of family management strategies will more strongly predict antisocial behavior than will disorder.

H$_9$: Neighborhood disorder will moderate the relationship between family management strategies and antisocial behavior, especially strategies applied outside the home.

H$_{10}$: Proximal mechanisms of antisocial behavior will mediate the effect of family management strategies on antisocial behavior, resulting in a decrease in magnitude and significance of the parenting practices.

H$_{11}$: Neighborhood disorder will moderate the relationship between exposure to violence and deviant peers on antisocial behavior, thereby amplifying the effects of the proximal mechanisms on antisocial behavior.

H$_{12}$: The relationship between disorder, family management and antisocial behavior will hold after controlling for individual level characteristics.
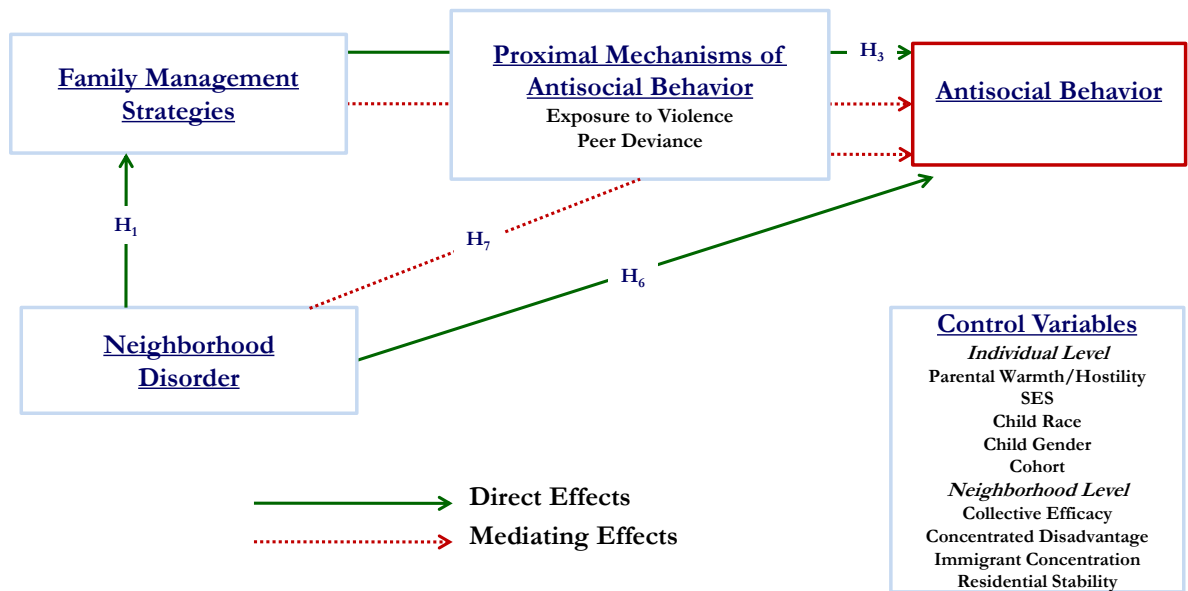
FIGURE 2: Illustration of the relationships between Disorder, Family Management, and Child Outcomes[2]

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[2] Several control variables have been added to the model. Research suggests that parents living in detrimental neighborhood environments may experience negative sequelae like poor attachment with children which can translate into inefficient family management, specifically harsh disciplining practices and decreased monitoring. In order to explore how management practices are shaped by neighborhood disorder it is crucial that family attachment, parental warmth and hostility be controlled for. The parenting literature also suggests that minorities adopt different parenting styles. Additionally, family resources, specifically SES, are believed to condition the extent to which families living in disordered neighborhoods can engage in promotive management practices. Therefore, family SES will also be controlled for in the analyses. In tandem with the disorder literature, collective efficacy, concentrated disadvantage, immigrant concentration and residential stability are the neighborhood control measures to be used.

CHAPTER 4- Data and Methods

PHDCN Study and Sample

The Project on Human Development in Chicago Neighborhoods (PHDCN) is a comprehensive study of both the community and developmental pathways of children and youths living in Chicago. Chicago was chosen as the study site for four main reasons:[3] 1) the stability of the neighborhoods and racial/ethnic composition; 2) the importance of Chicago in sociological and criminological history (i.e. the Chicago School- Park and Burgess 1921; Shaw and McKay 1942); 3) the organization of the city in addition to the support provided to the project by the city and state governments, schools, social services and criminal justice systems and 4) the size and population diversity of the city. Of interest to the current study are the Community Survey, designed to assess key neighborhood attributes like formal and informal social control, collective efficacy, social cohesion as well as structures of social support (organizational, political and community-based) and more importantly disorder, and the Longitudinal Cohort Study intended to describe and evaluate the interaction between the neighborhood, school, families and child and youth outcomes such as delinquency and antisocial behavior.

PHDCN Sampling Methodology

A three-stage sampling design was employed. Firstly, 343 neighborhood clusters (NCs) were formed from 847 census tracts. In forming the NCs it was essential that these be homogenous in terms of important census indicators such as socioeconomic status and housing type. These NCs were then stratified according to two primary characteristics: ethnic/racial composition and socioeconomic status (see Table 1[4]).

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[3] Information obtained from: http://www.icpsr.umich.edu/PHDCN/about.html
[4] *Ibid*

TABLE 1: Stratification of Neighborhood Clusters

Racial/ethnic stratum	Socioeconomic Status		
	Low	*Medium*	*High*
>75% Black	77	37	11
>75% White	*0*	5	69
>75% Latino	12	9	*0*
≥20% Latino and ≥ 20% White	6	40	12
≥20% Latino and ≥ 20% Black	9	4	*0*
≥20% Black and ≥ 20% White	2	4	11
NCs not classified	8	15	12
Total	**114**	**114**	**115**

For the Longitudinal Cohort Study a stratified probability sample of 80 NCs was selected. The objective was to obtain an equal number of NCs across all the strata, however no NCs were obtained for the primarily White low SES, primarily Latino high SES nor >20% Latino and Black high SES NCs, thus limiting the desired distribution of NCs (see Table 2[5]). The third stage of the sampling process involved randomly selecting block groups from each one of the 80 NCs, and sampling children who fell within one of the 7 age cohorts- birth, 3, 6, 9, 12, 15 and 18.

TABLE 2: LCS Stratification of Neighborhood Clusters

Racial/ethnic stratum	Socioeconomic Status		
	Low	*Medium*	*High*
>75% Black	9	4	4
>75% White	*0*	4	8
>75% Latino	4	4	*0*
≥20% Latino and ≥ 20% White	4	5	4
≥20% Latino and ≥ 20% Black	4	4	*0*
≥20% Black and ≥ 20% White	2	4	4
NCs not classified	4	4	4
Total	**27**	**29**	**24**

For the Community Survey, the selection of NC depended on whether the NC was chosen for the LCS or not. A target sample size of 50 per NC was defined for each of the 80 NCs. Within the city blocks defined for the LCS, a systematic random sampling procedure was applied

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[5] Information obtained from: http://www.icpsr.umich.edu/PHDCN/about.html

to select the housing units from each NC, resulting in an average sample of 65.4 dwelling units per NC. The PHDCN researchers calculated that the occupancy rate per housing unit was approximately 0.9, which when coupled with an average response rate of 0.85 was expected to produce the target 50 completed surveys per NC. Interviewers compiled a list of household members who were 18 years of age or older and randomly selected one of the eligible members to participate in the Community Survey.

For the NCs not included in the LCS, the target sample size per NC was 20. City blocks within each cluster were selected using a proportional probability sampling method, and like the LCS, housing units were chosen using a systematic random sampling procedure. In order to obtain a final number of 20 completed interviews per NC, the researchers selected 9 city blocks per NC and conducted 3 interviews per block. The projected number of 27 completed interviews per NC yielded the target 20, given the occupancy rate of 0.9 and the response rate of 0.85. Interviewers randomly selected the participant using the same method employed when selecting respondents from the LCS NCs. A total of 8,782 Chicago residents participated in the Community Survey which took place between 1994 and 1995.[6]

Participants- LCS

Participants were identified via in-home interviews that took place in approximately 40,000 homes. Over 8,000 eligible participants were identified and 6,228 were interviewed for the longitudinal study, yielding a response rate at Wave 1 of 75%. Primary caregivers (a parent, relative etc) and where applicable the child/youth, were asked to take part in a series of in-home interviews and assessments. Information was gathered at three different waves (see Table 3). At

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[6] Although different sets of respondents took part in the Community Survey and Longitudinal Survey, the same NCs chosen for the LCS were chosen for the CS.

Wave 2, 16 subjects were deceased and 874 were lost due to attrition resulting in an eligible sample of 5338. At Wave 3 a further 9 participants were deceased and 1353 lost due to attrition. The remaining eligible pool of subjects was 4850. The response rates across each wave are presented in Table 3.

TABLE 3: Response Rates (RR) Per Wave

	Time	*Average RR*[7]
Wave 1	1995-1997	75%
Wave 2	1997-2000	86%
Wave 3	2000-2001	78%
Average RR across Waves		**79.7%**

The PHDCN data and the current study

The PHDCN data are particularly well-suited to this study because of the data's detail regarding child and youth developmental outcomes, family practices and neighborhood disorder measures. The Community Survey elicits information critical to the construction of a disorder measure and the cohort study evaluates children and youth over several important developmental stages from infancy through young adulthood and assesses important behaviors, attitudes and other outcomes not only of the child but of the parents as well. Furthermore, the data have been validated over time and used extensively in both sociological and criminological research (Browning and Burrington 2006; Gardner, Roth, and Brooks-Gunn 2009; Gibson, Morris, and Beaver 2009; Sampson 2008; Sampson, Morenoff, and Raudenbush 2005; Sampson and Raudenbush 2004; Sampson, Sharkey, and Raudenbush 2008; Sharkey 2006).

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[7] The response rate is calculated based on the number of eligible respondents at each wave and not the total number of respondents at Wave 1.

Study Sample- LCS

Parents adopt different family management practices not only in response to their environment but also in response to their child's developmental needs (Gilligan 1982; Dodge et al 1990; Steinberg et al 1992; Spencer and Dornbusch 1990; Perez and Fox 2008; Furstenberg et al 1999). In essence, parental management becomes crucial when children begin to further explore their environment and are granted the independence to venture out into their neighborhood. The strategies themselves affect child behaviors and successful socialization (Furstenberg 1993; Furstenberg et al 1999). So, in order to study how family management styles are not only shaped by neighborhood disorder, but affect child behavior I shall be using information gathered on cohorts 9 and 12 (Table 4).

Examining cohorts 9 and 12 permits a study of not only of the differences in family management strategies for children and young teens, but how these strategies may contribute to differences in a child's/youth's exposure to violence, peer associations and ultimately antisocial behavior. The age range, for the entire study sample across all three waves of data collection, spans from 7 to 18 years of age. The average response rates across cohorts varied, with wave 2 yielding the highest response rates of the sample, approximately 85.90% for the study participant (SP) and 86.90% for the primary caregiver (PC) (see Table 4).

TABLE 4: Response Rates (RR) For Study Sample Per Wave

	Cohort	Eligible	Complete	RR (%)
Wave 1	09	1091	828	75.90
	12	1103	820	74.34
			average	*75.12*

	Cohort	SP RR (%)	PC RR (%)
Wave 2	09	85.6	86.6
	12	86.2	87.2
	average	*85.90*	*86.90*
Wave 3	09	77.5	79.0
	12	74.9	79.1
	average	*76.20*	*79.05*

The Dissertation Sample

In order to assess how management strategies changed over time it was important to ensure that subjects participated in the study at each of the three waves. By matching Subject IDs over each data collection period it was possible to identify all the respondents who took part in the entire LCS study, which when accounting for the missing data, yielded a total of 1094 participants (of 1649 subjects) from the 2 cohorts of interest, across 78 NCs (see Table 5).

TABLE 5: Distribution Of Dissertation Sample

	Entire Sample		*Dissertation Sample*	
Cohort	*N*	*%*	*N*	*%*
09	828	50.2	556	50.8
12	821	49.8	538	49.2
Total	**1649**	**100**	**1094**	**100**

Attrition analyses were undertaken to determine whether the 555 participants who were lost at the follow-up waves differed significantly from those who remained in the study. Results revealed that the two groups differed significantly with respect to some of the demographic

characteristics. The sample income and education tended to be slightly higher[8] and primary

caregivers more likely to be married. More, importantly, there were no statistically significant

differences between the dissertation and attrition sample with respect to the key outcome

variable, antisocial behavior.

Cohort Descriptions

The dissertation sample and total sample descriptions, broken down by data collection

wave, are presented in Table 6.

Wave 1

At Wave 1, the mean age across the cohorts was 10.62 years (S.D. 1.53) and 53.24% of the

sample was male. In relation to the ethnicity of the children, close to 48% (47.67%) were

Hispanic, 33.27% Black and 14.21% White, with the remaining 4.68% Asian, Pacific Islander,

Native American and "Other." A comparison was made between this sample and the entire

sample of children from cohorts 09 and 12 who took part in the Wave 1 studies. The mean age

was 10.65 and 50.18% were male. In terms of the ethnic composition, 46.27% were Hispanic,

35.60% Black and 13.83% White. Cross-tabs and mean comparisons revealed no statistically

significant differences between the two groups.

Over 80% of the Primary Caregivers (PCs) [9] were the subjects' mothers. The mean age

was 37.88 years (S.D. 7.37) and range of 19.08 to 68.50. The PCs for Cohort 09 tended to be

younger with a mean age of 36.33 years (S.D. 6.95), whereas the PCs for Cohort 12 were older

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[8] Maimon and Browning (2010) report similar findings.
[9] PC (primary caregiver) and parent are used interchangeably. Over 90% of the PCs who participated in the LCS
were parents of the child being studied and the surveys themselves also use the term PC, so depending on the
context either PC or parent is used.

(mean = 39.48, S.D. 7.45). In relation to education level, more than half had achieved a high school diploma or more and approximately 60% were married, 10.60% partnered and a little over 29.07% single.

Wave 2

At Wave 2, there were no appreciable differences in mean age between the dissertation and entire Wave 2 sample (Dissertation Sample: mean=12.61, S.D.= 1.60; Complete Sample: mean=12.70, S.D. 1.61). Moreover, t-tests confirmed no statistically significant difference between the means. With respect to the PCs, 17.53% of the dissertation sample experienced a change in marital status, versus 18.61% in the complete sample. PCs in the dissertation sample were only slightly more likely to be married. In relation to education 72 of the PCs from the dissertation sample were missing data, compared to 108 of the PCs from the complete sample. Fewer PCs of the dissertation sample had less than a high school education over 56.95% had completed high school or more, compared to approximately 47% of the complete Wave 2 sample.

Wave 3

The values for both samples remained consistent at Wave 3. The mean age for the dissertation sample was 15.16 (S.D. 1.58) and for the complete sample 15.22 (S.D. 1.58). In both samples approximately 23% of the PCs experienced a change in marital status from Wave 2, with over 57% married in the dissertation sample versus 44.63%[10] in the entire Wave 3 sample.

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[10] Over 350 PCs in the complete sample were missing data pertaining to marital status and relationship to subject.

TABLE 6: Characteristics of Dissertation Sample

Children	Cohort 9		Cohort 12		All	
Gender	**DS**	**CS**	**DS**	**CS**	**DS**	**CS**
Male	296 (53.24)	436 (52.66)	253 (47.03)	405 (49.33)	549 (50.18)	841 (51.00)
Female	260 (46.76)	392 (47.34)	285 (52.97)	416 (50.67)	545 (49.82)	808 (49.00)
Ethnicity						
Hispanic	265 (47.66)	394 (47.58)	242 (44.98)	369 (44.98)	507 (46.34)	763 (46.27)
Black	185 (33.27)	283 (34.18)	191 (35.50)	304 (37.03)	376 (34.37)	587 (35.60)
White	79 (14.21)	116 (14.01)	86 (15.99)	112 (13.64)	165 (15.08)	228 (13.83)
Other	26 (4.68)	34 (4.11)	19 (3.53)	32 (3.90)	45 (4.11)	66 (4.00)

	Wave 1		Wave 2		Wave 3	
	DS	**CS**	**DS**	**CS**	**DS**	**CS**
	Mean (S.D.)	*Mean (S.D.)*	*Mean (S.D.)*	*Mean (S.D.)*	*Mean (S.D.)*	*Mean (S.D.)*
Age	10.62 (1.53)	10.65 (1.53)	12.61 (1.60)	12.70 (1.61)	15.16 (1.58)	15.22 (1.58)

Primary Caregivers

Relationship to child	*f (%)*	*f (%)*	*f (%)*	*f (%)*	*f (%)*	*f (%)*
Biological mother	910 (83.18)	1356 (82.23)	901 (82.36)	1169 (70.89)	889 (81.26	1059 (64.22)
Biological father	100 (9.14)	147 (8.91)	77 (7.04)	104 (6.31)	65 (5.94)	76 (4.61)
Grandmother	45 (4.11)	68 (4.12)	48 (4.39)	64 (3.88)	32 (2.93)	40 (2.43)
Other	37 (3.38)	64 (3.88)	40 (3.66)	46 (2.79)	36 (3.29)	44 (2.67)
Education	*f (%)*	*f (%)*	*f (%)*	*f (%)*	*f (%)*	*f (%)*
< High School	186 (17.00)	353 (21.41)	188 (17.18)	256 (15.52)	NA	NA
Some High School	203 (18.56)	351 (21.29)	211 (19.29)	284 (17.22)	NA	NA
High School	141 (12.89)	215 (13.04)	169 (15.45)	223 (13.52)	NA	NA
Some more HS	425 (38.85)	534 (32.38)	342 (31.26)	429 (26.02)	NA	NA
Bachelor's +	136 (12.43)	140 (8.49)	112 (10.24)	137 (8.31)	NA	NA
Income	*f (%)*	*f (%)*	*f (%)*	*f (%)*	*f (%)*	*f (%)*
<5000	115 (10.51)	190 (11.52)	73 (6.67)	104 (6.31)	54 (4.94)	64 (3.88)
5000-9999	108 (9.87)	173 (10.49)	89 (8.14)	118 (7.16)	67 (6.12)	86 (5.22)
10000-19999	213 (19.47)	333 (20.19)	186 (17.00)	237 (14.37)	148 (13.53)	179 (10.86)
20000-29999	219 (20.02)	313 (18.98)	180 (16.45)	259 (15.71)	195 (17.82)	230 (13.95)
30000-39999	152 (13.89)	232 (14.07)	147 (13.44)	186 (11.28)	121 (11.06)	144 (8.73)
40000-49999	98 (8.96)	139 (8.43)	97 (8.87)	122 (7.40)	129 (11.79)	151 (9.16)
>50000	186 (17.00)	256 (15.52)	232 (21.21)	291 (17.65)	270 (24.68)	307 (18.62)
Marital Status	*f (%)*	*f (%)*	*f (%)*	*f (%)*	*f (%)*	*f (%)*
Married	656 (59.96)	937 (56.82)	634 (57.95)	837 (50.76)	632 (57.77)	736 (44.63)
Single	318 (29.07)	512 (31.05)	390 (35.65)	504 (30.56)	407 (37.20)	491 (29.78)
Partnered	116 (10.60)	180 (10.92)	60 (5.48)	83 (5.03)	47 (4.30)	59 (3.58)

Note: Percentages may not add up to 100 due to missing values
DS= Dissertation Sample / CS= All Participants

Variable Descriptions

Outcome Variable- Antisocial Behavior

The outcome variable antisocial behavior was derived using responses to the *Youth Self-Report Survey* (Achenbach 1991b), *Self-Report of Offending Survey*[11] (Earls, Brooks-Gunn, Raudenbush, and Sampson 1994b) and the *Substance Use Interview* (Earls, Brooks-Gunn, Raudenbush, and Sampson 1994a*)* of the PHDCN. I use a method similar to Apel and Kaukinen (2008) and Apel, Bushway, Brame, Haviland, Nagin and Paternoster (2007) where antisocial behavior is a variety score of self-reported problem behaviors. Responses to several questions including behaviors like carrying a concealed weapon, truancy, running away from home and drug use and sale were dichotomized and summed (Table 7).

Osgood et al (2002) discussed the advantages of variety versus frequency scales in studying crime and delinquency, concluding like Hindelang, Hirshi and Weis (1981), that "the number of different offenses committed is more informative about delinquency than is the number of times each offense is committed," (p. 288). Thus, the resulting scale (α=0.792) represents a count of the various delinquent and antisocial acts each subject engaged in during the previous year (Apel et al. 2007; Apel and Kaukinen 2008). Since less than 1% of the sample (9 out of the 1094 respondents) had a score above 13, the scale was top-coded at 13 (Fauth, Roth, and Brooks-Gunn 2007a). While the overall mean for the outcome variable is 2.58 (s.d. 2.79, min. 0 and max. 25[12]), the mean count of antisocial acts was 1.87 for cohort 9 and 3.31 for cohort 12. Over 70% of the dissertation sample had engaged in at least 1 antisocial act during the past

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[11] Analyses using the YSR and SRO surveys of the PHDCN have shown that scales constructed from these surveys have acceptable reliabilities (α>0.7: Browning and Burrington 2006).

[12] Although the possible maximum for the antisocial behavior variable is 25, in practice, the maximum according to the descriptive analyses is 13.

year, with more than 80% of cohort 12 engaging in one or more antisocial acts compared to

63.67 of cohort 9.

TABLE 7: Descriptive Statistics of Self-Reported Behaviors by Cohort

	Cohort 9		Cohort 12	
	Mean	*S.D.*	*Mean*	*S.D.*
Run away from home overnight	.08	.27	.11	.32
Absent from school, no excuse	.12	.32	.44	.50
Stole from store	.06	.23	.07	.25
Stolen from household member	.05	.23	.03	.17
Stolen from a car	.00	.00	.01	.11
Bought/sold stolen goods	.03	.16	.05	.21
Carried hidden weapon	.02	.14	.07	.26
Caused trouble in public	.08	.27	.10	.29
Set fire	.08	.28	.08	.27
Snatched purse	.00	.04	.00	.00
Hit someone not live with	.17	.37	.18	.39
Attack with weapon	.00	.06	.02	.15
Thrown objects at people	.07	.25	.07	.26
Been in gang fight	.02	.13	.04	.21
Broke into building to steal	.00	.00	.01	.09
Sold marijuana	.00	.04	.04	.20
Sold cocaine/crack	.00	.00	.02	.13
Damaged property	.11	.31	.12	.33
Threaten to hurt	.14	.35	.21	.41
Shot at someone	.00	.00	.01	.11
Smoked cigarettes	.15	.36	.44	.50
Drank alcohol	.19	.39	.56	.50
Used marijuana	.07	.25	.32	.47
Got into Fights	.38	.48	.28	.45
Chased someone to scare	.06	.24	.08	.27

350
300
250
200
150
100
50
0

0 1 2 3 4 5 6 7 8 9 10 11 12 13
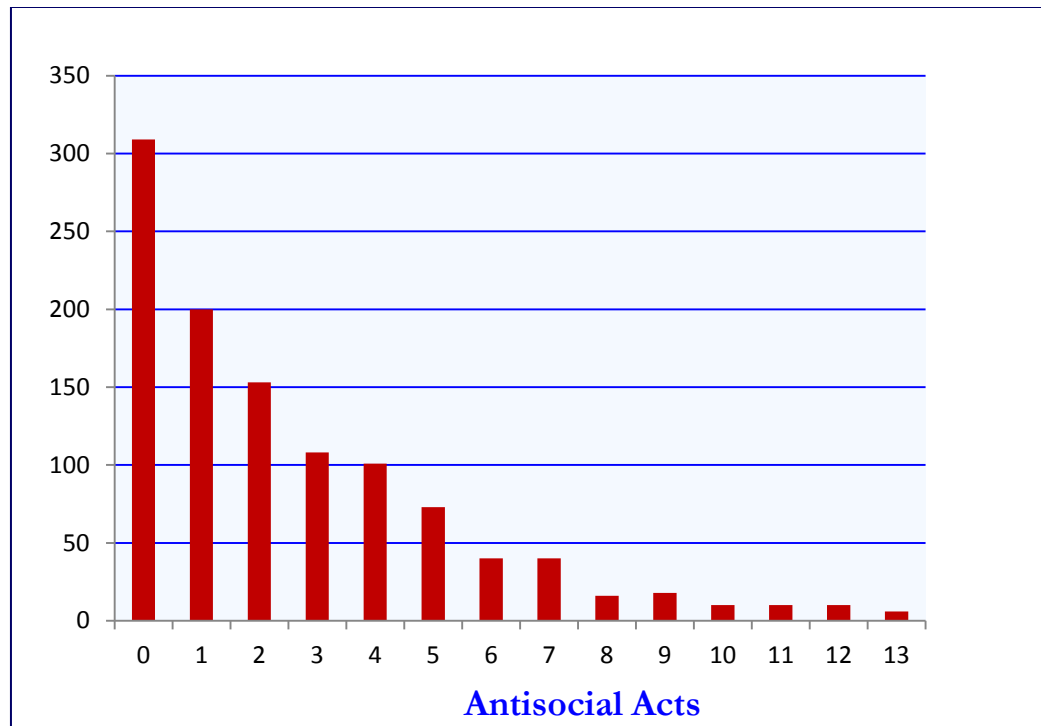
Antisocial Acts

FIGURE 3: Distribution of Antisocial Acts committed in past 12 months

Family Management Variables

Within the Home

Developmental Stimulation- This variable was derived using the "Developmental

Advance" section of the *Home Observation Survey/Home Life Interview*. Parental management

of both everyday life within the home and in the outside world is essential to successful child and

adolescent development (Furstenberg et al. 1999; Leventhal, Selner-O'Hagan, Brooks-Gunn,

Bingenheimer, and Earls 2004). As children develop "parents will reinforce and stimulate this

process of growing autonomy, self-determination and independence," (Eccles et al 1993: 97).

The promotive strategies parents employ within the home are designed to not only bolster the

relationship between parent and child, but to also developmentally stimulate the child so as

promote his/her educational skills and competencies (Eccles et al, 1993; Klebanov et al 1998;

Linver, Brooks-Gunn and Cabrera 2004). Therefore, the developmental stimulation variable is

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operationalized using parent responses to questions concerning homework, hobbies and availability of book and games.

Primary caregivers were asked (yes/no) if "*subject has access to*" CDs, musical instruments, books, board games and reference books (complete list in Appendix A). The developmental stimulation measure is therefore a composite scale derived from these 11 questions. The internal consistency of the variable was acceptable (α=0.652)[13] and distribution of the measure negatively skewed. Approximately one fifth of the sample had access to all materials and more than half had access to at least nine items. The mean score is 8.79 (s.d. =1.99) and the descriptive statistics by cohort are shown in Table 8.

Disciplining Practices- Furstenberg et al (1999) operationalize their discipline variable using parental evaluations of how effective parents thought their disciplining strategies to be. For the present study, the discipline variable is defined as the extent to which parents use coercive and harsh disciplining practices. While this discipline measure is different to that employed by Furstenberg et al (1999), it should not be a problem within the context of the models to be tested. Furstenberg et al (1999) focus on the effectiveness of discipline and the success of adolescent outcomes, but the presence of negative or noxious discipline, the other side of the discipline coin, is just as important to the lack of success both children and youth experience. Inconsistent, harsh and coercive disciplining practices often have dire consequences for children: from increased antisocial behavior, to peer rejection and low self-control (Patterson 1982, 1986; Patterson and Stouthamer-Loeber 1984; Unnever et al 2003; Gottfredson and Hirschi 1990; Patterson et al 1989). Thus, rather than focusing on the positive impact of efficient

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[13] Han et al (2004) point out that the reliability of the developmental stimulation measure may vary according to subjects' age. In fact the reliabilities of the developmental stimulation scale for cohort 12 are slightly higher than for cohort 9

discipline, I shall be examining the harmful outcomes of noxious parental disciplining. The discipline variable assesses the frequency with which the primary caregiver resorts to coercive and/or physical disciplining when problems arise with the child/youth, meaning that higher scores represent increased harshness of disciplining practices.

The measure was derived using the *Conflict Tactics Scale* (Straus 1979) at Wave 1 The CTS has been widely used to determine parent to child violence (Molnar, Buka, Brennan, Holton, and Earls 2003; Straus and Hamby 1997; Straus, Hamby, Finkelhor, Moore, and Runyan 1997). Scales constructed have demonstrated acceptable reliabilities of between 0.60 and 0.85 and the information collected by the survey has been validated over time (Molnar 2001; Molnar et al. 2003) Primary caregivers were asked "in the past year when there was a problem with ****…how many times did you…" where options ranged from insult or swear at, to beat up (Appendix A). The caregivers chose from six response categories (0= never, 1= once, 2= 2 times, 3= 3-5 times, 4= 6-10 times, 5= 11-20 times and 6= more than 20 times) which were recoded to 0= never, 1= once or twice, 2= 3-5 times, 3= 6-10 times, 4= 11+times. The recoding and collapsing of some of the response categories yielded a less skewed distribution of the discipline variable.

The discipline measure was calculated using a mean-based method which ensured the inclusion of more cases as an adjusted mean scale adds the subject's responses to each pertinent question and divides the result by the number of non-missing items. So, for example if a respondent answered 10 out of the 12 CTS items then the sum is divided by 10 in order to obtain an adjusted mean score. At least 80% of the questions had to be validly answered in order to be included in the computation of the discipline measure. The resulting scale had good internal consistency (α=0.778) and close to one quarter of the children experienced little or no harsh

disciplining. The descriptive statistics are shown in Table 8. The scale ranges between 0 and 2.92 with only 10 children being subject to harsh disciplining more than three times during the last year.

In Home Supervision- Parental supervision and monitoring is crucial to child development (Leventhal et al 2004; Patterson and Stouthamer-Loeber 1984; Sampson and Laub 1994; Griffin et al 2000). Ensuring that children are supervised when the primary caregiver in not available as well as during the period after school is an integral part of within the home family management practices. The "Supervision" section of the *Home Observation Survey* has been used extensively and the reliabilities of scales constructed from the responses range from 0.50 to 0.67 (Maimon and Browning 2010; Browning et al 2004). However, there are questions about curfew and trips to the doctor that do not directly assess adult supervision in the home. Therefore, the supervision scale derived here does not sum all 24 items presented in the *Home Observation Survey*. Instead the focus is on 16 items (Appendix A) that more directly relate to supervision and monitoring within the home, like helping the child with homework, having a regular schedule, making arrangements for supervision when caregiver is not present. The supervision and monitoring variable is an additive scale, where responses to 16 questions (yes/no) were summed for each respondent. The reliability (α=0.631) is consistent with previous work (Browning, Leventhal, and Brooks-Gunn 2004a; Browning, Leventhal, and Brooks-Gunn 2005; Maimon and Browning 2010) and 30% of the children were subject to the highest level of supervision (min=3, max=16). As expected, on average, the younger cohort was subject to higher levels of supervision (Table 8).

TABLE 8: Descriptive Statistics of Within The Home Family Management Strategies

	Cohort 9			Cohort 12		
	Mean (S.D.	Min	Max	Mean (S.D.)	Min	Max
Developmental Stimulation	8.77 (1.98)	0	11	8.82 (2.00)	1	11
Discipline	0.56 (0.51)	0	2.92	0.51 (0.49)	0	2.67
Supervision	14.36 (1.73)	6	16	14.18 (2.00)	3	16
Alcohol	0.92 (0.27)	0	1	0.94 (0.23)	0	1

			Cumulative			Cumulative
	f	%	%	f	%	%
Health						
Never	13	2.34	2.45	30	5.58	5.94
Once a year	11	1.98	4.53	19	3.53	9.70
2-3 times a year	40	7.19	12.08	50	9.29	19.60
more than 3 times a year	466	83.81	100.0	406	75.46	100.0
Sex						
Never	163	29.32	31.05	94	17.47	18.73
Once a year	66	11.87	43.62	49	9.11	28.49
2-3 times a year	112	20.14	64.95	107	19.89	49.80
more than 3 times a year	184	33.09	100.0	252	46.84	100.0

Alcohol, Health and *Sex*- Through their qualitative work analyzing how parents help their

children overcome economic, social and cultural adversity, Furstenberg et al (1999) identify

specific protective strategies parents employ within the home. Of note, are the discussions

parents have with their children concerning harmful situations or environments they may face

while at school or out in the neighborhood. As a protective strategy, parents discuss issues

pertaining to drug and alcohol use as well as sexual relations in order to provide their children

with the information and skills necessary to avoid engaging in harmful behaviors. At Wave 1

caregivers were asked whether they had discussed the hazards of drugs and alcohol, but at Wave

2 a more elaborate set of questions was presented. Therefore, the alcohol, health and sex

variables were constructed using the Wave 2 responses. Primary caregivers were asked a series

of questions designed to elicit information on how often, within the last year, they had discussed

issues relating to health and sex with their child and if (Yes/No) they had talked about the dangers and hazards of alcohol and drug use. Three variables were created to represent the within the home protective strategies parents employ (*health*, *sex*, *alcohol*). Discussions about health were more prevalent with over 75% of parents engaging in these conversations more than three times a year. Not surprisingly, parents of the older children are more likely to hold conversations about sex, with over 45% of the parents from cohort 12 stating they had more than three conversations about sex during the past year (Table 8).

Outside the Home

    Activity Involvement- Participation in educational, talent/skills and sports activities supports child and youth well-being and development (Furstenberg et al 1999; Leventhal et al 2004; Gardner and Brooks-Gunn 2009). Two promotive family management strategies variables were created for this project: a youth activity involvement (*YAI*) and a family activity involvement (*FAI*) measure.

    Youth Activity Involvement- the *YAI* variable was derived using the school interview conducted at Wave 2 (Fauth, Roth, and Brooks-Gunn 2007a; Gardner, Roth, and Brooks-Gunn 2009). Subjects were asked if in the last 12 months they had participated (Yes/No), in several activities from arts to sports and cheerleading. Following a similar procedure to that employed by Fauth et al (2007a) and Gardner et al (2009), sports and cheerleading were combined into one category as were orchestra and arts/dancing. The activities were summed across participants creating a count of the different activities each child took part in over the past year. The younger cohort participated in more art related activities at wave 2, although across the board members of cohort 12 tended to take part in more activities (Table 9).

TABLE 9: Descriptive statistics- Youth Activity Involvement

Variable	Cohort 09	Cohort 12	Full Dissertation Sample
Arts	0.56 (0.50)	0.49 (0.50)	0.53 (0.50)
School Sports / Cheerleading	0.54 (0.50)	0.62 (0.49)	0.58 (0.50)
Student Government	0.15 (0.34)	0.22 (0.42)	0.19 (0.39)
Church Group / Volunteering	0.55 (0.50)	0.58 (0.50)	0.57 (0.50)
Community Activities	0.26 (0.44)	0.26 (0.44)	0.26 (0.44)
YAI wave 2 summative scale	2.07 (1.33)	2.18 (1.35)	2.12 (1.34)

Family Activity Involvement- the *FAI* scale was constructed using the Home Observation Survey/Home Life Interview and a methodology similar to that employed in the creation of the *YAI* measure. Several studies have demonstrated the importance of these activities in encouraging positive child development (Eccles, Wigfield, and Schiefele 1998; Fauth, Roth, and Brooks-Gunn 2007b; Furstenberg et al. 1999; Gardner, Roth, and Brooks-Gunn 2009). At Wave 2, caregivers were asked about the frequency with which the family had taken trips together, gone to museums, took part in family hobbies and outdoors during the last year which were recoded into binary variables (Appendix A). The *FAI* variable was then constructed using the same method as the *YAI* measure. Responses were also dichotomized, activities were summed and a count variable derived depicting the variety of activities the family took part in over the last year (Table 10). A greater proportion of children participated in family outings and outdoor activities. Members of cohort 12 were less likely to participate in family and outdoor activities, compared to those in cohort 9, probably because at Wave 2 subjects were 2 to 3 years older and more likely to assert their autonomy (Eccles et al 1991) and therefore less inclined to take part.

In relation to the summative scale, the mean across the full dissertation sample is 5.08 (min=0, max=7).

TABLE 10: Descriptive statistics- Family Activity Involvement

Variable	Cohort 09	Cohort 12	Full Dissertation Sample
Visit Relatives	0.82 (0.39)	0.81 (0.40)	0.81 (0.39)
Outdoor Activities	0.79 (0.41)	0.68 (0.47)	0.74 (0.44)
Family Outing	0.88 (0.33)	0.85 (0.36)	0.86 (0.34)
Museums	0.87 (0.34)	0.79 (0.41)	0.83 (0.37)
Road Trips	0.67 (0.47)	0.64 (0.48)	0.65 (0.48)
Plane Trips	0.43 (0.50)	0.44 (0.50)	0.43 (0.50)
Family Hobbies	0.77 (0.42)	0.72 (0.45)	0.75 (0.43)
FAI wave 2 summative scale	5.22 (1.78)	4.93 (1.91)	5.08 (1.85)

* Mean (S.D.)

Preventative Strategies- When faced with less than ideal environments in which to raise their children, many parents resort to restrictive strategies in order to minimize their children's exposure to undesirable neighborhood and community conditions (Furstenberg et al 1999; Leventhal and Brooks-Gunn 2000; Furstenberg 1993). Furthermore, restrictive prevention practices are often designed to curtail children's access to friends parents deem a negative influence or to neighborhood environments that are seen as harmful. Two variables are used to illustrate the preventative practices used by parents for when their children are outside the home.

Restrictiveness- At each wave, caregivers were asked (Yes/No) if their child was allowed to spend time in public places without adult supervision. Information was collected across all waves for cohort 9 and at Waves 1 and 2 for cohort 12. Examination of the frequencies for the three waves of data revealed 18% of the sample was missing information pertaining to this variable at wave 1. Moreover, Wave 1 mean restrictiveness did not vary significantly across

neighborhoods, but it did at Wave 2. This is consistent with the literature on neighborhood effects and child development, which suggests that neighborhood influences are age-graded (see for example Leventhal and Brooks-Gunn 2000). As children grow their contact with the neighborhood environment increases and thus we would expect there to be greater neighborhood influences at Wave 2, which is why I use data from the second wave. The original variable was recoded from 1= is allowed to 1= is not allowed to spend time in the neighborhood unsupervised in order to reflect parental restrictiveness. A little over 70% of the dissertation sample is not permitted to spend unsupervised time in public places, although parents of the older children are more likely to be less restrictive.

Knows child's peers- Furstenberg et al (1999) identify parental restrictive strategies that target both mobility and peer networks. Curfews, parents' familiarity with their children's friends and after-school supervision are some of the areas examined by the authors. For the present study I shall also be looking at parental familiarity with their children's friends. During the Home Observation Survey conducted at Wave 2 parents were asked whether they know their children's friends by name and sight. The response categories were collapsed and a dummy coded variable (*knowspeers*) constructed. The all or most category was recoded into 1 with the about half, few and none categories recoded into 0. Close to 65% of the primary caregivers reported knowing all or most of their child's friends.

Proximal Mechanisms of ASB

Exposure to Violence – ETV is particularly important in the current study, because parents living in communities with greater disorder are hypothesized to resort to more restrictive family management strategies in an attempt to reduce their child's exposure to the neighborhood, and thus reducing ETV (Furstenberg 1993; Furstenberg et al 1999; Spencer and Dornbusch 1990;

Steinberg 1990). While the PHDCN LCS assesses ETV across all three waves of data collection, at Wave 1 subjects participated in an ETV survey that was far less detailed than the instrument used at Waves 2 and 3. Therefore, the ETV variables were derived using the My *Exposure to Violence* survey (Buka et al 1996; Selner-O'Hagan et al 1998), administered at Wave 2. The *My ETV* interview captures information regarding victimization, witnessing of violence and hearing of violent events (Molnar et al 2004). Youths were asked if they had experienced or witnessed a series of violent situations and where. Similar to the method used by Gardner and Brooks-Gunn (2009), the responses to several questions (described in Appendix A) were dichotomized and summed for a measure ETV in the neighborhood during the past year. The higher scores indicate more ETV. The older cohort experienced more ETV in the community. The number of ETV incidences in the home was extremely low with only 5% of the respondents having witnessed or experienced a violent incident within their home. Therefore, a dichotomous variable of ETV in the home was constructed. Reliabilities of scales constructed using the *My ETV* survey have ranged from 0.68 to 0.93 (Gibson et al 2009; Gardner and Brooks-Gunn 2009; Buka et al 1996; Selner-O'Hagan et al 1998) which is confirmed in the present data set. The internal consistency of the neighborhood exposure to violence was 0.731. Although the possible range of the scale is 0-8, the actual range is 0-7 as none of the children witnessed/ experienced all 8 types of ETV. In relation to neighborhood ETV, over 50% of the sample neither experienced nor witnessed instances of violence, whereas once the data were examined by cohort, over 75% of cohort 9 had no instance of ETV during the past year, compared to close to 30% for youths in cohort 12. The descriptive statistics are shown in Table 11.

	Cohort 09	Cohort 12	Full Dissertation Sample
TABLE 11: Descriptive statistics- Proximal mechanisms of Antisocial behavior			
ETV			
ETV in Neighborhood	0.44 (1.05)	1.75 (1.69)	1.09 (1.55)
ETV in the Home	0.03 (0.17)	0.09 (0.28)	0.06 (0.23)
Deviance of Peers	2.29 (1.87)	2.69 (2.17)	2.49 (2.03)

* Mean (S.D.)

Peer Deviance– Extensive research suggests peers exert significant effects on individual antisocial behavior and delinquency, as does parenting on the relationships children establish with their friends (Sutherland 1947; Sampson and Laub 1993; Warr 1993; Brody et al 2001; Browning et al 2004; Brooks-Gunn and Furstenberg 1989; Kirk 2006). Within the present study family management strategies are believed to influence association with deviant peers. Parents who employ more restrictive practices are thought to limit their children's access to deviant friends and associates. The peer deviance measure was constructed using the *Deviance of Peers* survey administered at Wave 1. The subjects were asked a series of questions, presented in Appendix A, designed to gather information about the people they spend time with. Each question was preceded by "During the past year, how many of the people who you spend time with…" Items included getting in trouble at school, using marijuana, stealing and engaging in sexual relations. Responses to 8 questions (0=none, 1= some and 2=all) were summed and a peer deviance scale ranging between 0 and 16, derived (Table 11). Prior research has demonstrated appropriate internal consistencies ($\alpha \approx 0.86$) for scales using the *DOP* survey (Browning et al 2004; Kirk 2006). In the current study the reliability coefficient is consistent with the literature ($\alpha= 0.801$). Younger children are less likely to have friends engaging in deviant behaviors such as smoking pot and sexual intercourse which translates into lower numbers of peer deviance.

<u>Child and Primary Caregiver Control Variables</u>

Research has illustrated differences in parenting strategies across gender and race/ethnicity (Elliott et al 2006; Cernkovich and Giordano 1987; Seydlitz 1991; Heimer 1996; Steinberg, Dornbusch and Brown 1992; Spencer and Dornbusch 1990; Perez and Fox 2008). It is possible, therefore, that family management strategies are influenced to some extent by both the gender and race/ethnicity of the child (Table 12).

Gender (*gender*) - The gender variable is a dichotomous measure drawn from the demographic survey of the LCS. Male subjects were attributed a 1 and female subjects a 0. The distribution of boys and girls in the full dissertation sample is fairly even, although girls outnumber boys in cohort 12, and the relationship is reversed in cohort 9.

Race/Ethnicity – The extant literature on parenting behaviors indicates that Latinos, African Americans and White parents socialize their children differently (Steinberg, Dornbusch and Brown 1992; Spencer and Dornbusch 1990; Perez and Fox 2008). Parenting differences are instrumental in explaining race differences in terms of parental goals and aspirations. Hill and Sprague (1999) found that education and finding a job were much more of a priority for Black parents than for White. While White parents sought to nurture their child's self-esteem, Black parents were focused on obedience and school performance. These results are similar to those published by Pagano et al (2002). Black parents were more likely than White to underscore the importance of educational achievement, religion and preparedness for hardship, but it is not only in terms of parenting styles or aspirations that Black parents are different to White parents. Studies also show that White parents are more authoritative than any other ethnic group, while Asian parents rely more on a teaching style (Steinberg et al 1992; Chao and Kim 2000). Conversely, other findings demonstrate that socialization strategies among Latino and Black

families are more often authoritarian or restrictive in terms of parenting style (Dornbusch et al 1986; Furstenberg et al 1999). Dummy variables were created for race/ethnicity to distinguish between Black, White and Latino families.

Cohort- There are two main justifications for using a cohort measure rather than an age variable as a control. Firstly, research suggests that parenting can change from one developmental epoch to another (Leventhal and Brooks-Gunn 2000). As such, since cohort 9 represents middle-to-late childhood and cohort 12 represents early adolescence, incorporating cohort is a way to control for such parenting differences. Secondly, there are distinct differences across the cohorts for many of the variables described here and more importantly in antisocial behavior. The average count of antisocial acts for cohort 12 is nearly double the average count for cohort 9. The mean number of deviant peers among cohort 12 is twice that of cohort 9. Were there no differences, an age measure would be more appropriate, but in order to account for these distinct differences in cohorts, it is important, as Lauritsen (1998) suggests, to incorporate this measure. If an age measure were used it would mask these cohort differences as the coefficients in the analyses would only depict a positive or negative relationship with antisocial behavior and not one specific to cohort. Therefore a cohort variable is included and is a binary measure depicting cohort membership (0=cohort 9, 1=cohort 12).

Family SES- The SES variable provided in the Wave 1 Master File of the PHDCN is a composite scale constructed by the PHDCN researchers and is the standardized principal component of the parents' maximum education, household income and parent socioeconomic index variables[14].

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[14] http://www.icpsr.umich.edu/icpsrweb/PHDCN/imputations.jsp

Parental Warmth- There are two main reasons why parental warmth is added as a control variable in the present study. First, parent warmth towards their child, in addition to their lack of hostility can have a significant impact a child's behavior by helping to attenuate problem behaviors. Secondly, neighborhood conditions can affect how parents respond to their children, especially in disadvantaged communities. Mothers and fathers living in poorer neighborhoods tend to display less affection for their children and in some instances more aggression and hostility (Leventhal and Brooks-Gunn 2000; Elder et al 1994; Elder et al 1995; Conger et al 1992). In order to successfully detangle how family management strategies affect child behavior it is useful to incorporate a measure of parental affection, helping clarify what effects stem from the management styles and which from parent attitude towards the child. The parental warmth (*warmth*) variable was derived using the Home Observation at Wave 1. Interviewers were asked to evaluate how parents and caregivers interacted with their children during administration of the survey, specifically, the manner in which parents spoke to their children and whether parents demonstrated affection towards their children were evaluated. The dichotomous responses to 13 items (Appendix A) were summed (α=0.751). The warmth scale ranges between 0 and 13 and the mean value across cohorts 9 and 12 is 10.16 (Table 12).

TABLE 12: Child and Family Control Variables

Child Controls	Cohort 09		Cohort 12		Dissertation Sample	
	N	%	*N*	%	*N*	%
Sex						
Female	260	46.76	285	52.97	545	49.82
Male	296	53.24	253	47.03	549	50.18
Hispanic						
Non-Hispanic	290	52.16	296	55.02	586	53.56
Hispanic	265	47.66	242	44.98	507	46.34
Black						
Non-Black	370	66.55	347	64.50	717	65.54
Black	185	33.27	191	35.50	376	34.37
Family Controls	*Mean*	*S.D.*	*Mean*	*S.D.*	*Mean*	*S.D.*
Family SES	-0.04	1.44	-0.08	1.44	-0.06	1.44
Parental Warmth	10.04	2.57	10.28	2.27	10.16	2.42

Neighborhood Measures

In addition to examining the relationship between disorder, family management and child outcomes, several neighborhood measures are included here as part of the exploratory focus of this project. Ideally, these variables would be constructed using information for the LCS, in particular disorder and collective efficacy. Unfortunately only the Community Survey provides the necessary information for the construction of these variables. The Community Survey, along with Census data, is used to construct the five neighborhood measures. A similar methodology has been successfully implemented by several researchers. For example, Browning and colleagues (Browning and Burrington 2006; Browning and Cagney 2002, 2003; Browning, Leventhal and Brooks-Gunn 2004) used the Community Survey to investigate how neighborhood processes influence health and adolescent sexual attitudes. Molnar, Cerda, Roberts and Buka (2008) also construct their neighborhood variables using the Community Survey, when examining aggression and delinquency among youths of the LCS. Others like Gibson, Morris and Beaver (2009) evaluate how neighborhood disadvantage affects secondary

exposure to violence, using 1990 Census Data for the operationalization of their neighborhood measures and the LCS for other variables of interest[15]. Considering how fruitful this strategy has been in extant PHDCN-related literature, in terms of theoretical advancement (the work on neighborhood influences and adolescent development especially), it shall also be applied here.

The fact that the neighborhood disorder variable is obtained from a different set of respondents from the LCS can be a cause for concern. There is evidence however to suggest that residents tend to agree upon the levels of disorder within their community (Skogan 1990; Bursik and Grasmick 1993). Specifically "while there may be differences between neighborhoods in the perception of the levels of disorder, there is solid empirical evidence that consensus exists within particular local communities," (Bursik and Grasmick 1993: 47). That said, even though research has shown a degree of intra-neighborhood homogeneity regarding perception of neighborhood disorder, this cannot be directly tested using the interviewees from the LCS, nor can individual differences in perception of neighborhood disorder be evaluated.

Neighborhood-level Disorder -The neighborhood-level disorder measure (*nhbdisorder*) was obtained from the PHDCN Community Survey. Specifically, respondents were asked to indicate whether several behaviors and situations were a big problem, somewhat of a problem or not a problem. Responses were recoded, summed and an adjusted mean calculated for each resident then aggregated to the NC level ($\bar{x}$= 1.83, S.D.=0.38, Min= 1.11, Max=2.78). The internal consistency analyses have shown good reliability (α= 0.83) (Sampson and Raudenbush 1999, 2004). A complete list of items used to compute the disorder measure is shown in Appendix A.

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[15] These are merely a sample of the studies that use the Community Survey to define neighborhood attributes while investigating child/youth outcomes from the LCS.

Collective Efficacy-Collective efficacy, defined as a community's trust, solidarity and willingness to exert informal social control when the need arises (Hays 2008), can attenuate the noxious effects of neighborhood disorder (Sampson and Raudenbush , 1999) .More importantly, Sampson and Raudenbush's (1999) have argued that collective efficacy influences disorder as it does crime, suggesting that disorder exists on a crime continuum with serious crime on one end and disorder on the other. As such, it is collective efficacy that predicts crime and crime rates. However, whereas Sampson and Raudenbush (1999) posit a direct causal effect of collective efficacy on disorder, others suggest the relationship is mediated whereby disorder influences a neighborhood's collective efficacy, which in turn affects crime (Gault and Silver 2008). The value of collective efficacy is, however, undeniable as there is evidence that collective efficacy is important in the bettering of neighborhood conditions and problems(Browning and Cagney 2003; Browning and Cagney 2002; Maimon and Browning 2010).

Although researchers disagree about the absolute role of collective efficacy in how disorder operates in the neighborhood (see for example St. Jean 2007; Bratton and Kelling 2006), it is evident from the literature that these two concepts are highly related. Recently, Sampson (2011) suggested a possible reciprocal relationship between disorder and collective efficacy. Thus, even though disorder is the main focus of this dissertation it would be in error not to include collective efficacy as a control when analyzing how neighborhood disorder affects family management, ETV, peer deviance and antisocial behavior. The collective efficacy variable was therefore constructed using the Community Survey- Community Data of the PHDCN. Two scales were derived from responses to questions about the level of informal social control and social cohesion (see Appendix A). Essentially, informal social control was assessed by questions about how likely it was for neighbors to intervene in a series of situations such as children skipping

school, children being disrespectful or breaking up a fight. In relation to the social cohesion variable, individuals were asked how strongly they agreed with a series of items designed to tap the level of solidarity among neighborhoods, for example "this is a close-knit neighborhood," "people in this neighborhood can be trusted." The social control and cohesion measures were shown to be highly correlated and were thus summed and averaged into a single collective efficacy measure (Sampson et al 1997; Sampson and Raudenbush 1999). The mean collective efficacy across NCs is 3.43 (S.D. = 0.29) with a maximum value of 4.17 and minimum value of 2.90. Sampson and Raudenbush (1999) demonstrate that the aggregate reliability of the collective efficacy variable is 0.80 across NCs.

Neighborhood Structural Characteristics- Using data provided by the 1990 Census, Sampson et al (1997a) created three variables depicting neighborhood conditions: concentrated disadvantage, immigrant concentration and residential stability. All three have been shown to affect community crime and individual behavior and have therefore also been incorporated into the models as neighborhood-level controls. Using ten measures from the Census (Table 13), Sampson and colleagues used factor analysis with oblique rotation to derive the three community variables for all 343 NCs of the Community Survey. Each of the variables is the weighted factor regression score and is standardized for the analyses. The descriptive statistics presented in Table 13 are for the 78 NCs used in this study.

TABLE 13[16]: Neighborhood-Level Controls

Variable	Factor Loadings
Concentrated Disadvantage	
Below poverty line	0.93
On public assistance	0.94
Female-headed households	0.93
Unemployed	0.86
Less than age 18	0.94
Black	0.60
Immigrant Concentration	
Latino	0.88
Foreign-Born	0.70
Residential Stability	
Same house as in 1985	0.77
Owner-occupied house	0.70

Analytic Plan

Using measures at Wave 1 and Wave 2 to predict youth antisocial behavior at Wave 3, the analysis is conducted in four progressive stages, with each stage assessing a particular research question. The final research question uses findings from the analyses of the three previous ones in order to conclude with a more parsimonious model of disorder, family management and antisocial behavior. The PHDCN data are nested, where respondents are clustered within each neighborhood, a multilevel model is therefore preferable to a single-level analysis like OLS, because many of the assumptions of single-level analyses are violated when the data are grouped. One such example is the independence of error terms. People living in the same neighborhood are expected to share characteristics, to be more alike than not, which results in a greater likelihood that there is some correlation between responses and thus dependence between

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[16] Sampson, R. J., Raudenbush, S. W., and Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science, 277:* 918-924.

error terms. Violation of this assumption can lead to an underestimation of standard errors and an overestimation of the test statistic, increasing the probability of Type I error. Multilevel modeling accounts for the dependence between error terms as well as the nested nature of the data. Furthermore, the analysis partitions within and between group components of Y_i so as to illustrate the different group effects.

Prior to assessing each model, the dependent variables of interest are examined to determine whether a multilevel analysis is indeed appropriate and needed[17]. Even though the data are clustered whether the outcome measure varies significantly across NCs must be evaluated. If there is no significant variation running a multilevel analysis is unnecessary, and an OLS regression would therefore suffice. Luke (2004) identifies three methods to aid in the decision regarding whether to use a multilevel approach or not: empirical, statistical and theoretical (which he considers the most important). The empirical and statistical justifications are assessed for each model by examining the distribution of the dependent variable across the level-2 units and running the fully unconditional model (one-way ANOVA with random effects). The theoretical criterion is made clear throughout the first 3 chapters of this dissertation. One of the primary objectives is to examine how neighborhood disorder shapes parenting and affects antisocial behavior in children, a relationship that functions across levels. The theoretical framework itself is multileveled in exploring the dynamics between neighborhood, parents and children. At the community-level, neighborhood characteristics like disorder are hypothesized to affect both parenting and child behavior. At the individual-level parenting and proximal

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[17] During the variable construction phase of this dissertation I tested whether antisocial behavior and family management strategies varied significantly across neighborhood cluster using ANOVA and t-tests. Although not entirely equivalent to the fully unconditional model run in HLM, it did provide the necessary information needed to guide the analytic plan.

mechanisms of antisocial behavior are believed to significantly influence youth antisocial behavior.

Research Question 1: What are the relationships between neighborhood disorder and different family management practices? Does neighborhood context affect parental management decisions and do neighborhood effects on family management differ between within and outside the home parenting strategies?

A primary objective of this dissertation is to explore the relationship between neighborhood disorder and family management strategies. The hypotheses associated with Research Question 1 are therefore aimed at examining how neighborhood characteristics, and in particular disorder, influence parental decisions concerning the time children spend inside and outside the home. Not only are these management practices measured differently, but disorder is also believed to affect the slope relationship between family management and youth involvement in antisocial behavior and delinquency. Therefore, Research Question 1 is the first step in exploring how neighborhood affects parenting. Each family management practice is evaluated individually, so as to determine how neighborhood disorder may shape parenting behaviors. Demographic variables are included as controls not only to account for possible race and gender effects in parenting, but more importantly, because studies also suggest that family SES can influence family management and moderate the relationship between community characteristics and family management (Furstenberg et al 1999; Elliott et al 2006).

Each family management practice is evaluated in a similar manner. Developmental stimulation, youth and family activity involvement and supervision are treated as interval and approximately normal in distribution, but because of issues with skewness, the robust standard errors are used. For the harsh discipline variable, an HGLM poisson model is employed, as it is

essentially a count of different strategies parents utilize when experiencing a problem with their child. Employing a linear model when using count data that follows a Poisson distribution results in inefficient, inconsistent and biased estimates (Long 1997) but fortunately, it is possible to analyze the data using Hierarchical Generalized Linear Modeling (HGLM) which uses a Poisson sampling model and log link function. Y_{ij} is the number of events that take place in a time period of length m_{ij} (also known as the exposure), which in this case is the variety of harsh disciplining a child was exposed to over the past year. The equation $Y_{ij} \mid \lambda_{ij} \sim P\left(m_{ij}, \lambda_{ij}\right)$ indicates that Y_{ij} follows a Poisson distribution with exposure m_{ij} and event rate λ_{ij}, therefore the expected and variance of Y_{ij} are:

$$E\left(Y_{ij} \mid \lambda_{ij}\right) = m_{ij}\lambda_{ij} \text{ and } Var\left(Y_{ij} \mid \lambda_{ij}\right) = m_{ij}\lambda_{ij}.$$

The time period is 1, therefore the expected value and variance is the event rate λ_{ij}. The log link function is used when the level-1 model is Poisson (Raudenbush et al 2011): $\eta_{ij} = \log\left(\lambda_{ij}\right)$. One of the most important assumptions for Poisson regression is that the variance of y be equal to the mean, also known as equidispersion. Oftentimes, however, the variance is greater than the mean resulting in overdispersion, as is the case here. In single-level models overdispersion is corrected or accounted for by using a negative binomial or zero inflated Poisson regression model. In the multilevel context, there is an option to correct for overdispersion during the analyses which shall be applied during the analyses.

Parent-child conversations about alcohol, restrictiveness and familiarity with their children's peers are binary variables so the sampling model is Bernoulli and the link function is logit. Conversations parents have with their children about sex and health related issues are

ordinal measures, thus an ordinal HGLM model is estimated based on the cumulative logit link (Raudenbush, Bryk, Cheong, Congdon, and du Toit 2011).

The analyses begin with the fully unconditional model (FUM) which determines the variability of the dependent variable across the level-2 units (the neighborhood clusters) and are complemented by a graphical examination of the relationship between each parenting strategy and neighborhood cluster. If the variability is not statistically significant then not only is a multilevel model not appropriate, but it would suggest that differences in that particular strategy are most likely driven by individual-level within neighborhood factors rather that the macro characteristics of the neighborhoods themselves. Once the appropriateness of a multilevel analysis is confirmed a means-as-outcomes regression (MAOR) which assesses the influence of level-2 predictors, in this case disorder and other neighborhood characteristics, on the dependent variable, while leaving level-1 unconditional is estimated. Disorder is grand-mean centered and error term fixed. The neighborhood-level controls are then added which permits an examination of H_2. Finally, sensitivity analyses are undertaken whereby the individual-level controls are included at level-1 in a random-effects ANCOVA. The level-1 controls are grand-mean centered and error terms are fixed, meaning that the relationship between these variables and the family management strategy examined, do not vary across neighborhoods. The HLM equations are presented below.

Model 1:

H_1: Family Management$_{ij}$ = γ_{00} + γ_{01}Disorder$_j$ + u_{0j} + r_{ij}

Model 2:

H_2: Family Management$_{ij}$ = γ_{00} + γ_{01}CollectiveEfficacy$_j$ + γ_{02}Poverty$_j$ + γ_{03}immigrantConcentration$_j$ + γ_{04}Stability$_j$ + γ_{05}Disorder$_j$ + u_{0j} + r_{ij}

<u>Sensitivity Analyses:</u>

$$Family\ Management_{ij} = \gamma_{00} + \gamma_{01}CollectiveEfficacy_j + \gamma_{02}Poverty_j + \gamma_{03}immigrantConcentration_j$$
$$+\gamma_{04}Stability_j + \gamma_{05}Disorder_j + \gamma_{10}Hispanic_{ij} + \gamma_{20}African_{ij} + \gamma_{30}Cohort_{ij} + \gamma_{40}Warmth_{ij}$$
$$+\gamma_{50}Gender_{ij} + \gamma_{60}SES_{ij} + u_{0j} + r_{ij}$$

Research Question 2: How do Family Management practices affect child antisocial behavior?

Model 3 examines the relationship between parental management strategies and antisocial

behavior, specifically hypotheses 3, 4 and 5. Since antisocial behavior is the count of different

antisocial acts the subject engaged in during the past year an HGLM Poisson model is used

(correcting for overdispersion). Assessing how family management strategies affect antisocial

behavior is a critical step in exploring the relationship between neighborhood, parenting and

child outcomes, and because the emphasis at this stage is in ascertaining which strategies are

significantly related to antisocial behavior, whether the relationship between family management

and antisocial behavior varies across neighborhoods is not examined in Model 3. Therefore,

Model 3 is a within-neighborhood random intercept model. At level-1, predictors are grand-

mean centered and error terms fixed. The model is unconditional at level-2, meaning no

variables are included at level 2. There are two advantages to grand-mean centering here.

Firstly, the intercept can be interpreted as the value of antisocial behavior for a youth who is

average on all family management measures. Secondly, grand-mean centering can help decrease

multicollinearity among the level-1 predictors (Raudenbush and Bryk, 2002).

<u>Model 3</u>

$$ASB_{ij} = \gamma_{00} + \gamma_{10}Dev.\ Stim_{ij} + \gamma_{20}Discipline_{ij} + \gamma_{30}Health_{ij} + \gamma_{40}Sex_{ij} + \gamma_{50}Alcohol_{ij} + \gamma_{60}Supervision_{ij}$$
$$+\gamma_{70}YAI_{ij} + \gamma_{80}FAI_{ij} + \gamma_{90}KPeers_{ij} + \gamma_{100}Restrictiveness_{ij} + u_{0j} + r_{ij}$$

In Model 4 the proximal mechanisms of antisocial behavior, exposure to violence and association with deviant peers are included in the analyses so as to evaluate the mediating effect of these mechanisms on the relationship between family management strategies and antisocial behavior. Both variables are grand-mean centered and error terms fixed.

<u>Model 4</u>

$$ASB_{ij} = \gamma_{00} + \gamma_{10}Dev.\,Stim_{ij} + \gamma_{20}Discipline_{ij} + \gamma_{30}Health_{ij} + \gamma_{40}Sex_{ij} + \gamma_{50}Alcohol_{ij} + \gamma_{60}Supervision_{ij}$$
$$+\gamma_{70}YAI_{ij} + \gamma_{80}FAI_{ij} + \gamma_{90}KPeers_{ij} + \gamma_{100}Restrictiveness_{ij} + \gamma_{110}ETV_{ij} + \gamma_{120}DOP_{ij} + u_{0j} + r_{ij}$$

Model 5 is a random coefficient regression aimed at analyzing hypothesis 5. Like the random intercept model defined above, predictors and controls are included at level-1, but the model remains unconditional at level-2. However, in this case the objective is to identify which relationships between family management and antisocial behavior vary across NCs. Decisions pertaining to what effects will be fixed and which will be random are done in stages. The first step is to examine the relationship between the family management variables and the dependent variable, without the controls, simply to determine the slope relationship across the neighborhood clusters. Each family management measure is examined individually, group-mean centered and the error term allowed to vary. It is important to build the model up, introducing and examining random effects one at a time and noting the significance level. Raudenbush and Bryk (2002) caution against estimating a "saturated" model with too many random effects because; "if one overfits the model by specifying too many random level-1 coefficients, the variation is partitioned into many little pieces, none of which is of much significance," (p. 256). Model 3 identifies which management strategies significantly influence antisocial behavior whereas Model 5 takes this one step further by assessing which of these relationships varies across NC.

Model 5

$$ASB_{ij} = \gamma_{00} + \gamma_{10} FamilyManagement_{ij} + u_{0j} + u_{1j} FamilyManagement_{ij} + r_{ij}$$

Sensitivity Analyses

Sensitivity analyses are also conducted using a random effects ANCOVA. Some researchers have argued that parenting differences emerge when race, gender of child and SES are controlled for in analyses (Steinberg, Dornbusch and Brown 1992; Spencer and Dornbusch 1990; Perez and Fox 2008). Furthermore, gender and race differences in exposure to violence and deviant peers may also be important in exploring the impact of family management on antisocial behavior. Thus these analyses are geared towards clarifying these relationships.

$$ASB_{ij} = \gamma_{00} + \gamma_{10} Dev.\ Stim_{ij} + \gamma_{20} Discipline_{ij} + \gamma_{30} Health_{ij} + \gamma_{40} Sex_{ij} + \gamma_{50} Alcohol_{ij}$$
$$+\gamma_{60} Supervision_{ij} + \gamma_{70} YAI_{ij} + \gamma_{80} FAI_{ij} + \gamma_{90} KPeers_{ij} + \gamma_{100} Restrictiveness_{ij} + \gamma_{110} ETV_{ij}$$
$$+\gamma_{120} DOP_{ij} + \gamma_{130} Gender_{ij} + \gamma_{140} SES_{ij} + \gamma_{150} Race_{ij} + \gamma_{160} Cohort_{ij} + \gamma_{170} Warmth_{ij} + u_{0j} + r_{ij}$$

Research Question 3: How does neighborhood disorder affect antisocial behavior? Is the relationship between disorder and child outcomes influenced by child exposure to violence and association with deviant peers?

Model 6 depicts the effect of neighborhood disorder on antisocial behavior and is a means-as-outcomes regression. Disorder is grand-mean centered and error terms fixed so that the intercept is the average youth involvement in antisocial behavior (log metric) in a neighborhood of average disorder. The model simply evaluates the effect of disorder on antisocial behavior, whereas Model 7 includes the proximal mechanisms of antisocial behavior at level-1. All variables are grand-mean centered and errors fixed. Model 7 is a random intercept model and

assesses the potential mediating effect of exposure to violence and deviance of peers in the relationship between disorder and youth antisocial behavior.

Model 6

$$ASB_{ij} = \gamma_{00} + \gamma_{01}Disorder_j + u_{0j} + r_{ij}$$

Model 7

$$ASB_{ij} = \gamma_{00} + \gamma_{01}Disorder_j + \gamma_{10}ETV_{ij} + \gamma_{20}DOP_{ij} + u_{0j} + r_{ij}$$

Sensitivity analyses were also undertaken with both neighborhood- and individual-level controls. All predictors and control variables were grand-mean centered and error terms fixed.

Sensitivity Analyses

Neighborhood controls

$$ASB_{ij} = \gamma_{00} + \gamma_{01}Disorder_j + \gamma_{02}CollectiveEfficacy_j + \gamma_{03}Poverty_j + \gamma_{04}ImmigrantConcentration_j + \gamma_{05}Stability_j$$
$$+ \gamma_{10}ETV_{ij} + \gamma_{20}DOP_{ij} + u_{0j} + r_{ij}$$

Research Question 4: What is the relationship between neighborhood disorder, family management, exposure to violence, peer deviance and antisocial behavior? Do neighborhood characteristics affect the impact of family management practices, exposure to violence and peer deviance on antisocial behavior?

Research question 4 brings together elements from the previous research questions to create a global view of how neighborhood disorder, family management and antisocial behavior relate to each other. Rather than including all variables, the aim is to estimate a more parsimonious final model by not only accurately defining pertinent level-1 fixed and random effects but also estimating the most appropriate level-2 model. Luke (2006) like Raudenbush and Bryk (2002) and McCoach (2010), argues that "there is no single best way to build a

multilevel model" (p. 23) and that decisions should be guided by research goals, theory and statistical insights.

In striving to achieve the most parsimonious, yet theoretically relevant level-1 model Raudenbush and Bryk (2002) posit:

> "Finally, there is a question of whether a particular level-1 predictor belongs in the model at all. To delete a variable, two conditions must apply: first no evidence of slope heterogeneity, and second, no evidence of an "average" or fixed effect. In the latter case, the corresponding γ_{q0} would be small in magnitude and the t ratio would be nonsignificant," (p. 258).

For, the level-1 fixed effects that exert statistically insignificant influences on antisocial behavior a fixed effect hypothesis test is also conducted to determine whether specific parameters significantly contribute to the model. For building a level-2 model, in an intercepts and slopes as outcomes models, Raudenbush and Bryk (2002) suggest several strategies. For exploratory models, one method is to divide the level-2 predictors into theoretically relevant submodels and select the strongest predictors from each and combine into a final model. Alternatively, the authors propose that "the most direct evidence whether a level-2 predictor should be included is the magnitude of the estimated effect and related t ratio. Predictors with t ratios near of less than 1 are obvious candidates for exclusion from the model," (p. 268). The final parsimonious model will therefore be estimated following suggestions by Raudenbush and Bryk (2002), McCoach (2010) and Luke (2006).

Model 8

$$ASB_{ij} = \gamma_{00} + \gamma_{01}NeighborhoodMeasures_j + \gamma_{10}FamilyManagement_{ij} + \gamma_{20}ETV_{ij} + \gamma_{30}DOP_{ij}$$
$$+\gamma_{40}IndividualControls_{ij} + u_{0j} + r_{ij}$$

CHAPTER 5- Parenting in Disordered Neighborhoods

Chapter 5 presents the results for the HLM analyses and details the relationship between neighborhood disorder, family management strategies and youth antisocial behavior. Each research question is addressed individually with research question 4 bringing together a final parsimonious portrayal of the multilevel relationship between disorder, family management and antisocial behavior.

Research Question 1- Parenting in Disordered Neighborhoods

Research question 1 examines the relationship between neighborhood context and family management and provides the initial stage in building an exploratory model between these elements

Assessing the Variability of Family Management Practices across Neighborhood clusters

As with any multilevel study, the analysis began with an assessment of the variability of each of parenting strategy across neighborhood clusters. This is undertaken by visually examining the mean variations of each parenting practice across the 78 neighborhood clusters and by building a fully unconditional model (a random effects ANOVA, unconditional at both levels 1 and 2), which estimates the variance across level-2 units (i.e. the neighborhoods). The graphical depictions of the mean family management across neighborhoods are presented in Figure 3. For many of the distributions the differences between communities are evident. For example, in the case of harsh disciplining practices, there is one neighborhood where the mean is considerably higher and another where it is appreciably lower than the rest. Between neighborhood differences are also marked for the mean number of youth activities. In some neighborhoods families tend to engage in significantly more activities than others, just as in

some areas the mean number of youth activities is demonstrably higher. While in some

communities not all parents talk to their children about the dangers of alcohol, the graph shows

that there are a number of neighborhoods where there is no variation at all, meaning that more

likely than not, all parents within these particular communities engage in these conversations.

Likewise, in many of the 78 neighborhood clusters studied, parents regularly discuss health-

related issues with their children, suggesting that, like alcohol, there may not be much difference

across neighborhoods for this particular variable. The same is not true, however, with respect to

conversations about sex. The graphs portrayed in Figure 3 shows clear across-neighborhood

differences, with some areas registering higher mean levels than others.
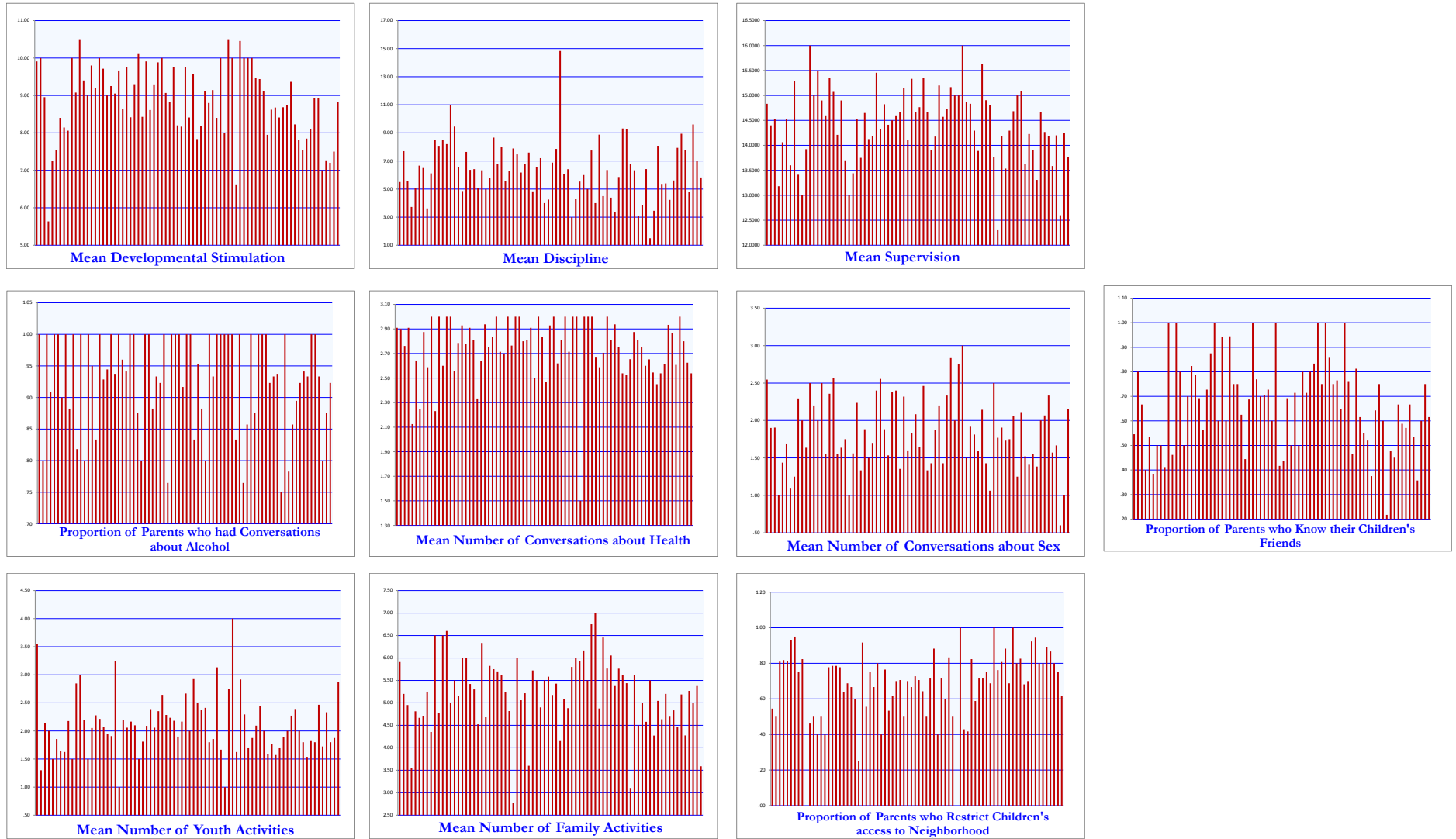
FIGURE 4: Distribution of Mean Family Management Strategy across Neighborhood Clusters

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In addition to the graphical representations of variability across neighborhood clusters, a fully unconditional model[18] (random effects ANOVA) was constructed and estimated for each parenting strategy. The results of the fully unconditional models are presented in Table 14 and are straightforward. With the exception of alcohol and health, the χ^2 tests were statistically significant, indicating that the mean values of the remaining family management practices do indeed vary statistically and significantly across neighborhood clusters. The results show that there is significant variation in the mean levels of most of the family management strategies parents across neighborhoods. Of the within-the-home strategies, harsh disciplining, supervision and parent-child conversations about sex were found to significantly and statistically vary across neighborhoods. In relation to the parenting strategies parents adopt outside the home, all of the measures included were found to vary across neighborhoods. These findings support a multilevel framework for assessing neighborhood effects on family management practices.

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[18] Although an ICC would provide information about the proportion of the variance in each parenting practice that is accounted for by neighborhood, it is not appropriate for some of the dependent variables, namely the binary and count measures (Lee and Burkam 2003). Snidjers and Bosker (1999) suggest calculating pseudo-ICCs but for the purpose of Research Question 1, it is sufficient to demonstrate variability across level-2 units.

TABLE 14[19]: Research Question 1- Fully Unconditional Model

Family Management Strategies

	Within the Home						Outside the home			
	Developmental Stimulation	Discipline	Supervision	Alcohol	Health	Sex	Youth Activity Involvement	Family Activity Involvement	Restrictiveness	Knows Peers
Intercept (β_0)	8.835	1.841	14.353	2.629	2.734	-1.138	2.123	5.132	0.888	0.610
Variance across NCs (τ)	0.609***	0.018*	0.188***	0.194	0.008	0.158***	0.067**	0.331***	0.253***	0.243***
χ^2	266.761	104.111	148.936	76.218	89.000	124.469	116.417	191.231	130.387	129.697

+p<0.10 * p<0.05 **p<0.01 ***p<0.001

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[19] There is an average of 14 subjects per neighborhood cluster which is enough for HLM analyses, however, because of statistical power concerns I follow the guidelines of other researchers and include findings at a significance level of p<0.10 (Lee and Burkham 2003).

Neighborhood Disorder and Parenting

The main effects of neighborhood disorder on family management strategies are displayed in Table 15. These results indicate that, when examined on its own, disorder significantly shapes parenting strategies. The findings also suggest that Hypotheses 1a and 1b are partially supported, in that even though disorder does not exert a significant effect on all parenting practices, some interesting effects emerge, nonetheless.

Of the five preventative strategies examined, neighborhood disorder statistically and significantly influences three of them: the number of parent-child conversations about sex, whether parents restrict their children's access to the neighborhood and parental familiarity with their children's peers. Neighborhood disorder has a weak, yet positive, impact on how often parents discuss sex with their children. For every unit increase in neighborhood disorder, frequency of these talks increases by 0.344 ($b=0.344$, $p<0.10$). Disorder also has a strong significant influence on parental decisions to restrict (or not) their children. Parents have a 0.480 log odds[20] of restricting their children, or simply put, for each unit increase in neighborhood disorder the odds of a parent not allowing their child to spend time unsupervised in the neighborhood are 62% greater ($b=0.480$, $p<0.05$). The relationship between neighborhood disorder and parental knowledge of their children's peers was hypothesized to be positive, such that parents living in disordered neighborhoods were predicted to be more likely to know their children's peers, as knowing the peers would act as a potential protective factor. This particular relationship was not, however, supported by the findings. Rather than a positive relationship between these two measures, the results revealed that disorder exacts a negative impact on

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[20] Restrictiveness is a binary variable asking parents whether they allow their children to spend unsupervised time in the neighborhood.

whether parents are familiar with their children's peers. A unit increase in disorder decreases the probability of peer familiarity by 36% (b=-1.035, p<0.001), a reflection perhaps of weakened social ties and control in disordered communities.

The hypotheses proposed for the promotive strategies are also partially corroborated by the results. The negative effect of neighborhood disorder on developmental stimulation suggests that in more disordered neighborhoods parents are less likely to developmentally stimulate their child. An increase in disorder is associated with a 1.554 unit decrease in developmental stimulation (b=1.554, p<0.001). In addition, the HLM estimates further showed that neighborhood disorder exerts no significant impact on harsh discipline, supervision or youth activity involvement. These findings suggest that, with the exception of sex-related parent and child talks, for the most part disorder has a greater role in shaping outside-the-home preventative parenting strategies, than affecting the practices parents adopt for when the children are at home.

	Within the Home					Outside the home		
	Developmental Stimulation	*Discipline*	*Supervision*	*Sex*	*Youth Activity Involvement*	*Family Activity Involvement*	*Restrictiveness*	*Knows Peers*
Intercept ($_{00}$)	8.850	1.838	14.356	-1.147	2.123	5.139	0.883	0.631
Disorder (γ_{01})	-1.554***	0.098	-0.173	0.344[+]	0.002	-0.555*	0.480*	-1.035***
Random Effects								
Variance (u_0)	0.342***	0.017*	0.190***	0.156***	0.069**	0.315***	0.241***	0.153*
χ^2	180.923	101.976	147.716	121.058	116.411	182.766	125.177	104.155

[+]p<0.10 *p<0.05 **p<0.01 ***p<0.001

Family Management Strategies

Neighborhood Effects on Parenting

Also pertaining to research question 1, the findings in Table 16 focus on the effects of neighborhood structural characteristics, collective efficacy and disorder on family management (Model 2). Once the neighborhood control variables were incorporated into the model, the effect of disorder on the different family management strategies was muted. Disorder was no longer a significant predictor of any of the parenting management strategies and Hypothesis 2 was thus not supported by the analyses. This result does not, however, discredit the impact of neighborhood disorder on family management practices but it does suggest that perhaps other neighborhood characteristics may have a more robust effect on parenting.

Immigrant concentration was the strongest predictor across all the family management practices studied, although its effects were not as substantial for family activity involvement. In relation to the practices applied within the home, parents living in neighborhoods with a higher percentage of Latino and foreign-born individuals provided less developmental stimulation for their children, were less likely to use harsh disciplining practice, provided less supervision and more parent-child conversations about sex. A standard deviation increase in immigrant concentration, decreased developmental stimulation by 0.482, holding all else constant (β=-0.482, p<0.001). Likewise, a standard deviation increase in immigrant concentration, decreased supervision by 0.297 (β=-0.297, p<0.001).

For the family management practices adopted outside the home, the coefficients in Table 16 show that immigrant concentration is negatively related to youth and family activity involvement and parental knowledge of child's peers, but positively and strongly related to restrictiveness. Youth living in neighborhoods with a higher concentration of Latino and foreign

born, engage in fewer activities (β=-0.187, p<0.001) and family outings (β=-0.152, p<0.1).

Furthermore, the odds of parents knowing their children's friends were 26%[21] lower (change in

odds $e^{-0.306}$, p<0.001). On the other hand, families living in communities where immigrant

concentration was higher were also 62% more likely to restrict their children's access to the

neighborhood (β=0.482, p<0.001).

Other neighborhood variables also exerted significant effects on family management.

Collective efficacy was found to have a positive influence on developmental stimulation, but a

negative one on restrictiveness (Table 16). For every unit increase in collective efficacy,

developmental stimulation is increased by 0.783 (b=0.783, p<0.05). Parents in neighborhoods

with higher levels of collective efficacy also have 1.719 lower log odds (b=-1.719, p<0.001) of

limiting their children's time spent in the community unsupervised. In essence, they are 82%

(change in odds $e^{-1.719}$, p<0.001) less likely to restrict their children. Also according to the

results, concentrated disadvantage has a marginal influence on developmental stimulation (β=-

0.272, p<0.10) but no significant impact on other parenting strategies. The negative relationship

between neighborhood stability and family activity involvement is unexpected. Based on the

results, the higher the level of residential stability in the neighborhood, the lower the number of

family activities youths take part in. A standard deviation increase in neighborhood stability was

associated with a 0.214 decrease (β=-0.214, p<0.05) in the number of family activities.

A useful way to address whether the introduction of predictors reduces the intercept

variance across level-2 units is to compare the intercept random effects variances before and

after including the predictors. Essentially, the proportion of the variance in the dependent

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[21] For the binary dependent variables like restrictiveness and peer familiarity, the percentage change was
calculated using the equation $\% = 100 \times \left[\left(\exp(\beta) \times \delta \right) - 1 \right]$. where δ is equal to 1.

variable explained by a new model can be calculated using the intercept variance from the original or fully unconditional model and the new model. For example, the intercept variance for developmental stimulation in Table 15 is 0.342 and 0.147 in Table 16. The change in variance explained is (0.342-0.147)/0.342. The introduction of collective efficacy and other neighborhood structural characteristics considerably reduced the variance across neighborhoods for most of the family management strategies, and most notably for restrictiveness and parental familiarity with their children's peers. For these parenting practices, the variance across neighborhood clusters was no longer significant (u_0= 0.012 and 0.036 respectively). The additional neighborhood variables explained over 50% of the variation across neighborhoods for developmental stimulation and for youth activity involvement, but only 5% in the variation of harsh disciplining. Overall, however, there is still some between-neighborhood variance to be explained.

Family Management Strategies

	Within the Home				Outside the home			
	Developmental Stimulation	*Discipline*	*Supervision*	*Sex*	*Youth Activity Involvement*	*Family Activity Involvement*	*Restrictiveness*	*Knows Peers*
Intercept (β_{00})	8.887	1.847	14.378	-1.181	2.133	5.172	0.845	0.665
Collective Efficacy (γ_{01})	0.783*	0.009	0.354	0.168	0.212	1.268	-1.719***	1.210
Concentrated Disadvantage (γ_{02})	-0.272+	0.032	-0.117	0.020	0.50	-0.047	0.115	-1.122
Immigrant Concentration (γ_{03})	-0.482***	-0.075*	-0.297***	0.317***	-0.187***	-0.152+	0.482***	-0.306***
Stability (γ_{04})	0.100	-0.032	-0.013	-0.006	0.024	-0.214*	0.258	-0.046
Disorder (γ_{05})	-0.036	0.065	0.542	0.069	0.244	0.244	-0.913	-0.190
Random Effects								
Variance (u_0)	0.147**	0.016*	0.132***	0.083*	0.030+	0.285***	0.012	0.036
χ^2	112.932	94.141	118.426	93.588	88.993	161.710	72.541	75.046

+p<0.10 *p<0.05 **p<0.01 ***p<0.001

Sensitivity Analyses- The Moderating Effects of Parent and Child-level controls

The estimates for the sensitivity analyses are presented in Table 17. There is a general consensus among researchers that within a neighborhood framework, individual-level relationships will tend to be stronger than the effects imparted by neighborhood characteristics (Leventhal and Brooks-Gunn 2000). This may explain why, with the introduction of the individual-level controls, several of the neighborhood variables that were previously significant, namely immigrant concentration, have either diminished in strength or are no longer significant at all. Controlling for gender, race, cohort membership, SES and parental warmth, the effect of immigrant concentration on supervision, youth and family activity involvement, restrictiveness and knows peers is no longer statistically significant, suggesting a moderating effect of the level-1 control variables[22].

The results presented in Table 17 also highlight the significant influence of collective efficacy on family activity involvement where there was none before. The inclusion of the demographic measures and parental warmth moderated the effect of collective efficacy. A unit increase in collective efficacy is now significantly associated with a 1.219 ($b=1.219$, $p<0.001$) increase in family activity involvement. Similarly, parents in neighborhoods with higher levels of collective efficacy are more likely to know their children's peers ($b=1.171$, $p<0.001$).[23] Collective efficacy also exerts a marginally significant influence on developmental stimulation, whereby children living in communities with higher levels of collective efficacy experience increased developmental stimulation ($b=0.508$, $p<0.1$).

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[22] Baron and Kenny (1986) describe that "in general terms a moderator is a qualitative (ie. sex, race, class) or quantitative (eg level of reward) variable that affects the direction and or strength of the relation between an independent or predictor variable and a dependent or criterion variable" (p. 1174).

[23] Recall that the variables were grand-mean centered. The intercept represents the average family management for a child living in a mean level of the neighborhood variables and mean level of control variables and who is white (the referent category).

| | Family Management Strategies | | | | | | | |
| | Within the Home | | | | | Outside the home | | |
	Developmental Stimulation	Discipline	Supervision	Sex	Youth Activity Involvement	Family Activity Involvement	Restrictiveness	Knows Peers
Intercept (β_{00})	8.818	1.841	14.363	-1.258	2.120	5.143	0.990	0.655
Collective Efficacy (γ_{01})	0.508^{+}	0.081	0.341	0.305	0.254	1.219***	-1.724***	1.171**
Concentrated Disadvantage (γ_{02})	-0.170	-0.020	-0.102	0.050	0.020	0.042	0.205	-0.023
Immigrant Concentration (γ_{03})	-0.185*	-0.009	-0.100	0.315**	0.012	0.021	0.198	-0.188
Stability (γ_{04})	-0.003	-0.066^{+}	-0.058	0.014	-0.025	-0.267**	0.237*	-0.030*
Disorder (γ_{05})	0.388	-0.009	0.602	0.057	0.342	0.408	-1.321**	0.452
Hispanic (β_{1})	-0.459***	0.011	-0.058	-0.104	-0.310**	0.111	1.005***	-0.900**
Black (β_{2})	0.074	0.286**	0.469**	-0.246	0.260^{+}	0.295	-0.011	-0.713**
C012 (β_{3})	-0.016	-0.078	-0.165*	0.570***	0.107	-0.293**	-1.426***	0.041
Warmth (β_{4})	0.152***	-0.016	0.125***	-0.44	-0.018	0.016	0.045	0.047^{+}
Gender (β_{5})	-00074	0.101*	-0.025	0.712***	-0.260***	0.128	-0.235	-0.069
SES (β_{6})	0.665***	-0.034	0.242***	-0.104	0.184***	0.534***	-0.149	0.262**
Random Effects								
Variance (u_0)	0.066^{+}	0.016^{+}	0.087**	0.069^{+}	0.027	0.223***	0.018	0.002
χ^2	91.440	91.350	104.995	90.597	86.680	141.754	79.929	66.848

$^{+}$p<0.10 *p<0.05 **p<0.01 ***p<0.001

In relation to the individual-level effects, compared to white children, Hispanics were more likely to be restricted by their parents, net of controls (b=1.005, p<0.001) and provided with less developmental stimulation in the home (b=-0.459, p<0.001). According to Table 17, black children are 0.33 times more likely to experience harsh discipline from their parents (b=0.286, p<0.01) and members of the older cohort are more likely to be allowed out in the neighborhood without supervision. In general, and holding all other variables constant, the older cohort is 75% less likely to be restricted by their parents. There was also a positive relationship between parental warmth and developmental stimulation (b=0.152, p<0.001) and supervision (b=0.125, p<0.001). As expected, SES was positively and significantly related to developmental stimulation, supervision, youth and family activity involvement and parental knowledge of their child's peers. Parents with greater financial resources can provide their children with more developmental stimulation (b=0.665, p<0.001) in addition to more outings and activities (b=0.534, p<0.001). The shift in direction and significance between disorder and restrictiveness is intriguing as it suggests a moderating effect of the individual-level controls on the relationship between disorder and restrictiveness

For developmental stimulation, the final ANCOVA model explained 89% of the variance across neighborhood clusters compared to the full unconditional model (0.609 in Table 14 compared to 0.066 in Table 17), but only 11% of the variance for harsh disciplining practices. The ANCOVA model also explains 54% of the between neighborhood variance in supervision practices, 56% in the conversations about sex, 60% in youth activity involvement and 33% in family activity involvement. While much of the variance in the dependent variables across neighborhoods was explained, there is still some variation that has not been accounted for by most of the models.

Research Question 2- Managing the Family: Parenting and Antisocial Behavior

Antisocial Behavior across Neighborhoods

     Prior to analyzing the relationship between family management and antisocial behavior, I evaluated the variation of antisocial behavior across neighborhoods. The graph depicting the means level of antisocial behavior in each of the 78 neighborhood studied (Figure 5) shows distinct peaks and troughs which highlights the differences in the dependent variable from neighborhood to neighborhood. Demonstrably higher levels are evident in two of the neighborhood clusters. Conversely, there is one neighborhood where it appears that youths engaged in virtually no antisocial acts during previous year.
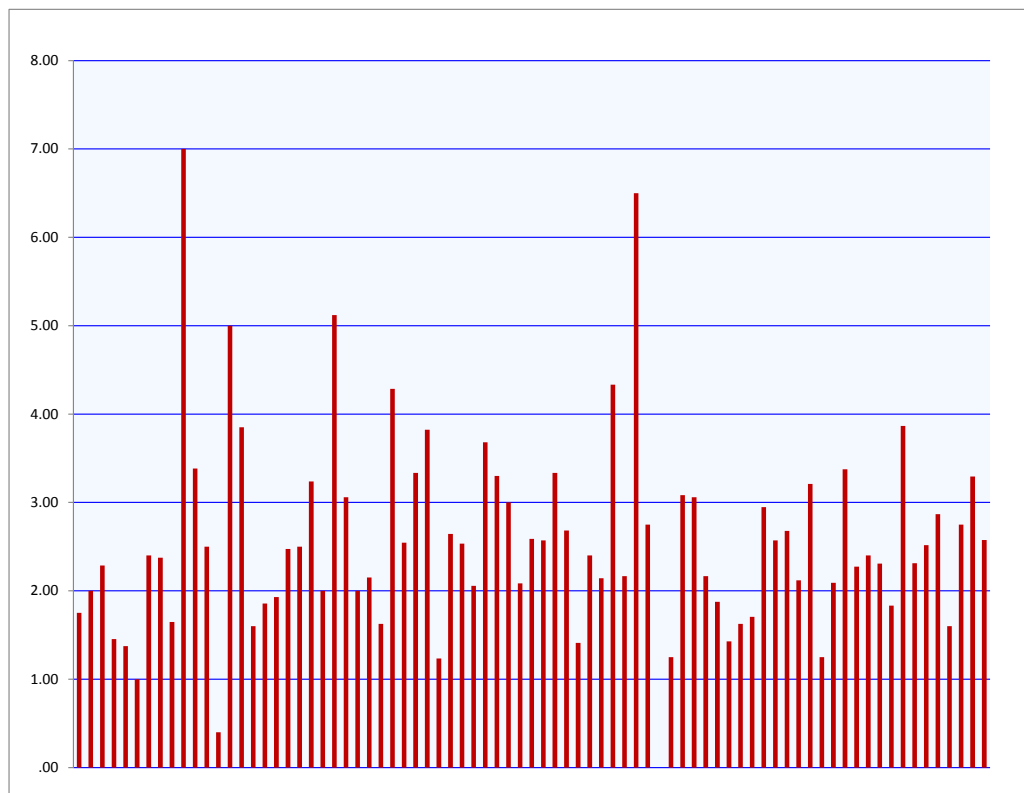
FIGURE 5: Variability of Mean Antisocial Behavior across Neighborhoods[24]

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[24] There is one neighborhood cluster (n. 743) that has only one respondent. Like close to 30% of the sample studied here, this respondent engaged in no acts of antisocial behavior or delinquency in the past year. Hence the mean for that particular neighborhood was zero.

In order to confirm that this between neighborhood variation is statistically significant, a fully unconditional model was also estimated:

$$ASB_{ij} = \gamma_{00} + u_{oj} + r_{ij}$$

where γ_{00} represents the grand mean, in a log linear metric, of antisocial behavior across all children studied, and u_{oj} and r_{ij} are the two error components. The outcome variable is a count of the different antisocial acts each youth engaged in during the past year, therefore an HGLM Poisson model is employed. The model has also been set to correct for overdispersion as the variance was found to be greater than the mean, and not equal to the mean, as is typically assumed in a Poisson regression.

Table 18 presents the results for the fully unconditional model (FUM), calculated for antisocial behavior. The findings confirm that antisocial behavior does indeed vary across neighborhoods, at a significance level of $p < 0.001$.

<div align="center">

TABLE 18: ASB Fully Unconditional Model

</div>

Mean antisocial behavior	2.527^{25}
Variance across Children ($\sigma 2$)	2.817
Variance between Children (τ)	0.044
$\chi 2$	121.431

$^{+}p<0.10,\ ^{*}p<0.05,\ ^{**}p<0.01,\ ^{***}p<0.001$

An intra-class correlation (ICC) was also estimated, as it provides information about the proportion of the variance in the dependent variable, in this case antisocial behavior that is

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[25] Because the raw coefficients are provided in a log linear metric the coefficient is exponentiated so "a one-unit increase in x_{ij} multiplies the expected incidents by a factors of $\exp(\beta_j)$ and a one-unit decrease divides the expected incidents by the same amount" (Gardner, Mulvey and Shaw 1995: 396). Therefore the raw coefficient of 0.927 was exponentiated. The average number of delinquent acts on a scale of 0-13 is 2.527.

accounted for by neighborhood. In essence, the ICC indicates how much of the variance in

antisocial behavior occurs across neighborhoods. However, because antisocial behavior is a

count measure, a pseudo-ICC is calculated by estimating a fully unconditional model with the

dependent variable set as a normally distributed variable (Snijders and Bosker 1999).

$$\text{ICC } (\rho) = \frac{\text{Between neighborhoods}}{\text{Total variance}} = \frac{\tau}{\tau + \sigma^2} = \frac{0.30591}{7.47881 + 0.30591} = 0.0393$$

The results of the pseudo-ICC indicate that close to 4% of the variance in antisocial

behavior occurs between neighborhoods. Compared to other multilevel research, particularly

education studies (Lee and Burkam 2003) the ICC is considerably lower, but it is in agreement

with much of the neighborhood research (Leventhal and Brooks-Gunn 2000). Although small,

there is clearly some between neighborhood variance that may be explained by neighborhood

and individual factors alike. Thus the use of a multilevel model is not only justified but

appropriate.

What Matters Most in the Relationship between Family Management and Antisocial Behavior?

The results of Model 3 are presented in Table 19, and illustrate the relationship between

parenting practices and antisocial behavior. The detrimental effect of harsh disciplining on

antisocial behavior (Hypothesis 3_a) was supported by the findings. Youths exposed to harsher

levels of discipline exhibit, on average, higher levels of antisocial behavior. Each additional

instance of harsh disciplining from parents increased expected involvement in delinquency and

antisocial behavior by a factor of 1.010 (b=0.0101, p<0.05) which is equal to a 1% increase[26]. In

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[26] Percent change in expected involvement in antisocial behavior was calculated using the formula
$\% = 100 \times \left[\left(\exp(\beta) \times \delta \right) - 1 \right]$. where δ is equal to 1.

relation to the other family management strategies implemented within the home, the results were mixed. The impact of supervision on antisocial behavior emerged as predicted. Children subjected to higher levels of supervision participated in fewer antisocial acts. For every unit increase in the amount of supervision provided by primary caregivers, antisocial behavior was found to decrease by a factor of 0.943 (b=-0.059, $p<0.01$) holding all else constant. However, of the within the home strategies examined, only discipline and supervision were found to statistically and significantly influence involvement in delinquency and antisocial behavior in the manner posited by the hypotheses.

TABLE 19: Family Management And Antisocial Behavior

		b	_S.E._	_E.R.R._
	Intercept (β_0)	0.918***	0.043	2.504
Within the Home	**Developmental Stimulation** (β_1)	-0.005	0.020	0.995
	Discipline (β_2)	0.010*	0.005	1.010
	Supervision (β_3)	-0.059**	0.021	0.943
	Alcohol (β_4)	0.297+	0.170	1.346
	Health (β_5)	0.022	0.045	1.023
	Sex (β_6)	0.080***	0.025	1.084
Outside the Home	**Youth Activity Involvement** (β_7)	0.022	0.029	1.023
	Family Activity Involvement (β_8)	0.003	0.023	1.003
	Restrictiveness (β_9)	-0.335***	0.062	0.715
	Knows Peers (β_{10})	-0.125+	0.068	0.882
	**Random Effect**			
	Variance	0.042**		
	χ^2	112.178		

ERR is the Event Rate Ratio which is the exp (b) and provides the change in expected count in the dependent variable by a unit change in the predictor.

+$p<0.10$, * $p<0.05$, **$p<0.01$, ***$p<0.001$

Although, the number of health related talks parents have with their children was not significantly related to problems behavior, both alcohol and sex related conversations were. The positive coefficients for alcohol and sex related parent child conversations were not as

hypothesized. Rather than serving as a protective factor against problem behavior, the talks

parents have with their children about alcohol, and sex, seem to have a negative effect on

behavior. According to the results presented in Table 19, children who had talked to their

parents about alcohol were actually more likely to engage in antisocial and delinquent acts ($b=$

0.297, p<0.10). Children whose parents regularly talked with them about sex-related issues also

exhibited greater levels of antisocial behavior ($b=0.080$, p<0.001). Instead of decreasing

involvement in problem behaviors, these preventative strategies seemed to be exacerbating them.

The propositions made in Hypothesis 3_b, were therefore not entirely supported by the data.

In relation to the family management strategies applied outside the home, the findings

indicate some support for Hypothesis 3_c. Neither promotive strategy was found to significantly

affect youth involvement in antisocial behavior. Whether engaging in activities after school or in

the community or participating in family outings, activity involvement of any kind does not seem

to influence antisocial behavior, especially when modeled with other parenting strategies.

Nevertheless, two of the preventative strategies examined did exert the predicted effect on

delinquency and antisocial behavior. Restrictiveness and familiarity with child's peers were

shown to have significant protective effects on youth antisocial behavior. Children who are not

permitted to spend time unsupervised in the neighborhood engage in considerably fewer

delinquent acts ($b=-0.335$, p<0.001). In essence, by restricting their children's access to the

neighborhood, expected involvement in antisocial behavior is reduced by close to 30%. Parents'

acquaintance with their children's peers has a similar preventative influence. Although

borderline in statistical significance, youth antisocial behavior is decreased by a factor of 0.882,

or rather, for children whose parents know their friends, expected participation in antisocial

behavior is predicted to decrease by close to 12%.

The Mediating Influence of Exposure to Violence and Peer Deviance

Limiting children's access to the neighborhood and increasing familiarity with their friends are some of the strategies parents adopt in order to reduce youth contact with violence and association with deviant peers. These practices have the potential to reduce youth problem by curtailing their experiences with elements known to increase the risk of problem behavior (Eccles 1992; Furstenberg et al. 1999). Hypothesis 4 specifically targets whether the effect of family strategies, in particular outside the home practices like parental restrictiveness and peer knowledge, on antisocial behavior are mediated by the proximal mechanisms defined in the model. The analysis was conducted in two stages. Firstly the impact of family management on exposure to violence and deviance of peers was estimated. The results depicted in Table 20 show that restrictiveness in particular is strongly related to both proximal mechanisms of antisocial behavior. By controlling youth access to the neighborhood, exposure to violence was reduced by 37% (b=-0.470, p<0.001) and association with deviant peers by approximately 14% (b=-0.145, p<0.01). Youth activity involvement seems to predict increased exposure to violence in the neighborhood. For each additional increase in activity, expected exposure to violence is increased by a factor of 1.080 (b=0.077, p<0.01).

TABLE 20: Family Management and the Proximal Mechanisms of Antisocial Behavior

	Exposure to Violence		Deviant Peers	
	b	S.E.	b	S.E.
Intercept (β_0)	0.032	0.060	0.885	0.037
Developmental Stimulation (β_1)	0.004	0.030	-0.020	0.017
Discipline (β_2)	0.011[+]	0.006	0.007	0.004
Supervision (β_3)	-0.027	0.026	-0.027	0.017
Alcohol (β_4)	0.219	0.190	0.084	0.098
Health (β_5)	-0.080	0.069	-0.005	0.042
Sex (β_6)	0.126[***]	0.035	0.026	0.026
Youth Activity Involvement (β_7)	0.077[**]	0.029	0.028	0.020
Family Activity Involvement (β_8)	-0.056[+]	0.030	0.009	0.015
Restrictiveness (β_9)	-0.470[***]	0.089	-0.145[**]	0.054
Knows Peers (β_{10})	-0.069	0.087	-0.085[+]	0.051
Random Effects				
Intercept (u_0)	0.098		0.053	
χ^2	134.470[***]		157.340[***]	

[+]p<0.10 [*]p<0.05 [**]p<0.01 [***]p<0.001

If the effect of restrictiveness and peer knowledge is mediated through exposure to violence and association with deviant peers, the coefficients are likely to be reduced after including exposure to violence and deviance of peers in the model, (Klebanov, Brooks-Gunn, Chase-Lansdale and Gordon 1997: 119; Cui and Conger 2008). As illustrated in Table 21, the introduction of these mechanisms into the model decreased the magnitude of the restrictiveness coefficient by over 40% (from -0.335 in Table 19 to -0.193 in Table 21) and familiarity with children's peers by 68% (from -0.125 to 0.04).

TABLE 21: The Mediating Effects of Exposure to Violence and Deviant Peers on Antisocial Behavior

		b	S.E.	E.R.R.
	Intercept (β_0)	0.883***	0.044	2.419
Within the Home	**Developmental Stimulation** (β_1)	-0.008	0.019	0.992
	Discipline (β_2)	0.008	0.005	1.009
	Supervision (β_3)	-0.046*	0.021	0.955
	Alcohol (β_4)	0.183	0.173	1.200
	Health (β_5)	0.067	0.043	1.069
	Sex (β_6)	0.047+	0.026	1.048
Outside the Home	**Youth Activity Involvement** (β_7)	0.011	0.027	1.011
	Family Activity Involvement (β_8)	0.014	0.023	1.014
	Restrictiveness (β_9)	-0.193**	0.066	0.824
	Knows Peers (β_{10})	-0.040	0.068	0.937
	Exposure to Violence- NHB (β_{12})	0.147***	0.120	1.094
	Exposure to Violence- Home (β_{13})	0.090	0.017	1.159
	Peer Deviance (β_{14})	0.068***	0.016	1.070
	Random Effect			
	Variance	0.035*		
	χ^2	104.160		

+$p<0.10$, *$p<0.05$, **$p<0.01$, ***$p<0.001$

In tandem with much of the literature on youth exposure to violence and peer deviance, the results in Table 21 show that these proximal mechanisms of antisocial behavior were strongly related to increased delinquent and antisocial behavior. For each additional experience of violence in the neighborhood, expected participation in antisocial behavior increases by 16% (b=0.147, $p<0.001$). Similarly, for each additional deviant peer, youths experience a 7% (b=0.068, $p<0.001$) increase in expected involvement in problem behavior. Still significant even after the introduction of exposure to violence and peer deviance, suggesting partial rather than full mediation, restrictiveness continues to have a protective influence on antisocial behavior. The expected number of antisocial acts committed by youths decreases by 18% for youths who

are denied unconstrained access to the neighborhood (b=-0.193, p<0.01) controlling for other parenting practices and proximal mechanisms of antisocial behavior.

Do the Relationships between Family Management and Antisocial Behavior vary across Neighborhoods?

In a random intercept model, only the intercepts are set to vary across the level 2 units. In effect, the random intercept model assesses whether the mean level of the dependent variable varies between the level-2 units. In this case, whether mean levels of antisocial behavior varies from neighborhood to neighborhood. There are, however, occasions when the variability of the slopes is of interest as well. Therefore, in addition to examining the intercept variability, the slope model evaluates how each family management practice affects antisocial behavior, and if this relationship changes between neighborhoods. Model 5 investigates the between-neighborhood variability of the slope relationships. Figure 4, below, illustrates the relationship between the family management strategies and antisocial behavior, using the level-1 equations of the random coefficients regressions. A random sample of groups are depicted in each graph, as presenting all 78 individual lines would, in all likelihood, conceal distinctions between them. In most cases, there are few, if any, discernible differences between the slopes, with perhaps the exception of supervision and antisocial behavior.

WITHIN THE HOME FAMILY MANAGEMENT
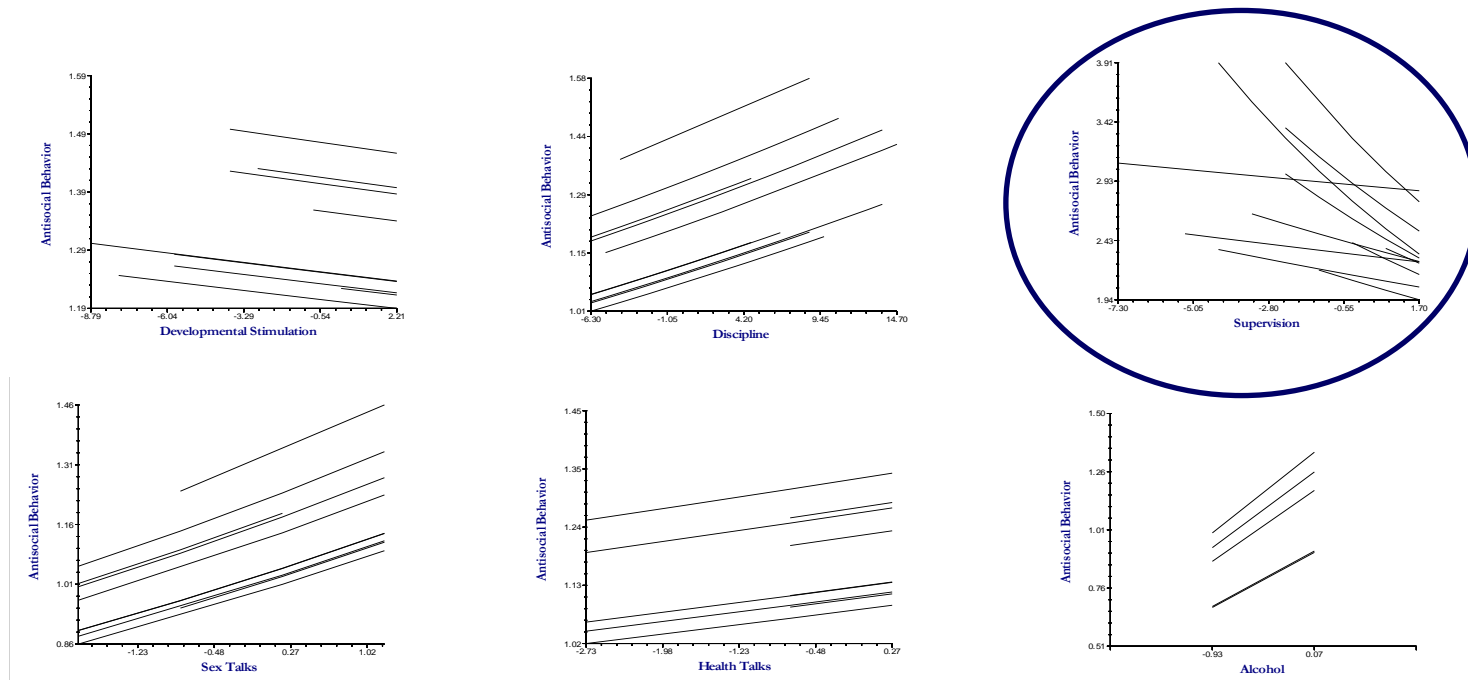
OUTSIDE THE HOME FAMILY MANAGEMENT
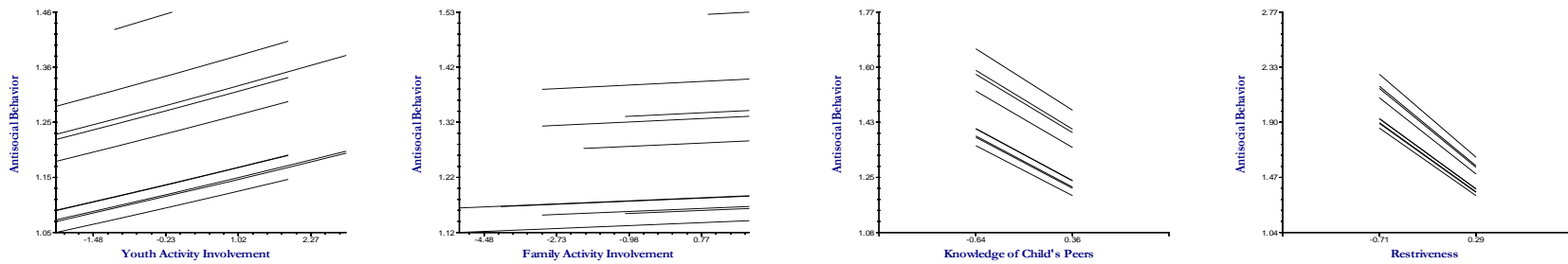
FIGURE 6: Graphical Representations of the Relationships between the Different Family Management Practices and Antisocial Behavior

To confirm what the visual inspection revealed, the relationships were statistically examined, and, as illustrated in Figure 3, the supervision-antisocial behavior relationship (u_1) was the only one found to vary significantly across neighborhood clusters (Table 22)[27]. However, the significance is appreciably reduced once the remaining family management variables are included in the analyses (Model 5a). The inclusion of the other parenting practices "explained" away the slope variability whereby the slope variance decreased from 0.004 to 0.001. These findings suggest that Hypothesis 5 is only partially supported, and results indicate that a non-randomly varying slope model is preferable to an intercepts and slopes as outcomes model. The non-randomly varying slope model still permits examination of how level-2 variables may influence the relationship between level-1 predictors and antisocial behavior.

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[27] In the interest of parsimony, only the significant findings are presented in Table 21. The analyses of all the slopes models are available upon request.

Model 5

	b
Intercept (β_0)	0.919^{***}
Supervision (β_{12})	-0.055^{**}

Random Effect	Variance	χ^2
Intercept (u_0)	0.044^{***}	121.901
Supervision (u_1)	0.004^{**}	108.602

Model 5a

		b
	Intercept (β_0)	0.916^{***}
Within the Home	**Developmental Stimulation** (β_1)	-0.009
	Discipline (β_2)	0.010^{*}
	Supervision (β_3)	-0.047^{*}
	Alcohol (β_4)	0.292^{+}
	Health (β_5)	0.012
	Sex (β_6)	0.078^{**}
Outside the Home	**Youth Activity Involvement** (β_7)	0.020
	Family Activity Involvement (β_8)	0.003
	Restrictiveness (β_9)	-0.327^{***}
	Knows Peers (β_{10})	-0.136^{*}

Random Effect	Variance	χ^2
Intercept (u_0)	0.045^{**}	112.791
Supervision (u_1)	0.002^{ns}	89.241

$^{+}p<0.10$, $^{*}p<0.05$, $^{**}p<0.01$, $^{***}p<0.001$

Sensitivity Analyses

Much research suggests that family and child characteristics like SES, gender, race and even parental warmth can influence parent behaviors and decisions. As such, sensitivity analyses were conducted to determine if these control variables moderate the impact of family management on antisocial behavior. Specifically, evidence shows that family SES affects how promotive strategies influence youth behavioral problems (Furstenberg et al 1999) and that parenting styles and strategies may differ across ethnicity and gender of the child as some evidence indicates that parents tend to be more restrictive of girls than boys (Elliott et al 2006; Cernkovich and Giordano 1987; Seydlitz 1991; Heimer 1996; Steinberg, Dornbusch and Brown 1992; Spencer and Dornbusch 1990; Perez and Fox 2008). Contrary to expectations, incorporating family SES into Model 2 neither altered the magnitude nor significance of the impact of promotive strategies on youth antisocial behavior nor was SES significantly related to antisocial behavior. None of the promotive practices were found to affect youth involvement in delinquent activities, thus if SES or any control measure did in fact moderate these relationships, a change in significance or direction of the relationship would have taken place. As the estimates in Table 23 demonstrate, no such changes emerged. Furthermore, only cohort membership and gender were found to influence antisocial behavior. Being male increased expected involvement in antisocial behavior by a factor of 1.27 (b=0.239, p<0.001) just as belonging to cohort 12 increased expected participation by 32% (b=0.281, p<0.001). There were, however, visible decreases in the coefficients for supervision, restriction, exposure to violence and peer deviance.

TABLE 23: Sensitivity Analyses- Family Management, Individual Controls and Antisocial Behavior

		b	S.E.	E.R.R.
	Intercept (β_0)	0.870***	0.045	2.387
	Developmental Stimulation (β_1)	-0.007	0.023	0.993
	Discipline (β_2)	0.009	0.006	1.009
Within the Home	**Supervision (β_3)**	-0.043+	0.023	0.958
	Alcohol (β_4)	0.164	0.185	1.178
	Health (β_5)	0.062	0.046	1.064
	Sex (β_6)	0.059+	0.025	1.061
	Youth Activity Involvement (β_7)	0.018	0.028	1.019
	Family Activity Involvement (β_8)	0.005	0.025	1.006
Outside the Home	**Restrictiveness (β_9)**	-0.122+	0.074	0.885
	Knows Peers (β_{10})	-0.071	0.070	0.931
	Exposure to Violence- NHB (β_{11})	0.103***	0.111	1.086
	Exposure to Violence- Home (β_{12})	0.082	0.022	1.108
	Peer Deviance (β_{13})	0.064***	0.017	1.065
	Hispanic (β_{14})	0.008	0.103	1.008
	African (β_{15})	0.024	0.089	1.025
	Cohort 12 (β_{16})	0.281***	0.086	1.326
	Warmth (β_{17})	-0.021	0.015	0.980
	Gender (β_{18})	0.239***	0.073	1.270
	SES (β_{19})	0.036	0.048	1.036
	Random Effect			
	Variance	0.038*		
	χ^2	107.734		

+p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Research Question 3- Neighborhood Disorder and Antisocial Behavior

The direct effect of neighborhood disorder on antisocial behavior

The direct effect of neighborhood disorder on youth participation in delinquency and antisocial behavior is explored in Model 6. Contrary to the prediction of Hypothesis 6, the results in Table 24 demonstrate that disorder, on its own, does not significantly influence mean involvement in antisocial behavior. Moreover, the variation of antisocial behavior (random effects) across neighborhoods continues to be significant, indicating that Model 6 explained, little, if any, of the intercept variance (u_0).

TABLE 24: The Effects Of Neighborhood Disorder on Antisocial Behavior

	b	S.E.	E.R.R.
Intercept (γ_{00})	0.928***	0.041	2.529
Disorder (γ_{01})	-0.082	0.113	0.921
Random Effects			
Intercept (u_0)	0.045***		
χ^2	120.392		

$^+$p<0.10 *p<0.05 **p<0.01 ***p<0.001

Meditating effects of Exposure to Violence and Association with Deviant Peers

Throughout the literature, there are several studies that submit the association between neighborhood characteristics and youth behavior is indirect functioning through important mediators like family and exposure to violence. Therefore, mediating effects models were conducted in order to assess whether exposure to violence and youth association with deviant peers mediate the relationship between disorder and antisocial behavior (Table 25). These analyses began with an estimation of the main effects of disorder on exposure to violence in the neighborhood and association with deviant peers. Both are influenced by the levels of disorder in the neighborhood. Children living in communities with greater neighborhood disorder

experienced more instances of violence in the neighborhood. Specifically, for each additional

unit of disorder, youths' exposure to violence increased by a factor of 1.684 (b=0.521, $p<0.001$).

Additionally, for every unit increase in disorder, expected involvement with deviant peers

increases by a factor of 1.332 (b=0.287, $p<0.001$). Without including any neighborhood or

individual level control variables (which is undertaken next), the main effects presented in Table

25 indicate that disorder directly influences the proximal mechanisms of antisocial behavior.

TABLE 25: Disorder, Exposure To Violence And Peer Deviance

	Disorder and the Proximal Mechanisms of Antisocial Behavior			
	Exposure to Violence		*Deviant Peers*	
	β	*S.E.*	*β*	*S.E.*
Intercept ($β_0$)	0.033	0.058	0.893***	0.035
Disorder ($γ_{01}$)	0.521***	0.175	0.287***	0.101
Random Effects				
Intercept (u_0)	0.096***		0.048***	
$χ^2$	141.657		156.297	

$^+p<0.10$ $^*p<0.05$ $^{**}p<0.01$ $^{***}p<0.001$

The next step in the analysis was to examine the full model (Model 7). The incorporation

of exposure to violence and deviance of peers into the disorder-antisocial behavior model yielded

interesting results not only in relation to the magnitude of the disorder coefficient, but the

direction as well. According to the data and findings illustrated in both Table 24 and 25,

disorder alone has no statistically significant impact on antisocial behavior, but a positive and

significant influence on exposure to violence and association with deviant peers (Table 25). The

estimates displayed in Table 26, tell a different story about the relationship between

neighborhood disorder and youth problem behavior. For every unit increase in disorder,

involvement in delinquent and antisocial behavior actually *decreases* by a factor of 0.809 (b= -

0.212, p<0.05). The estimates suggest that the criminogenic effect of disorder is apparently greater for lower levels of disorder than higher. Although clearly not as some of the disorder research would have predicted, it is also possible, as some researchers have found, that lower levels of disorder have far more negative consequences for antisocial behavior because of differences in parenting or interactions with the community (Seidman et al. 1998). Additional analyses were therefore undertaken to further unpack the effect of disorder on antisocial behavior. The neighborhood disorder variable was recoded into high, medium and low and dichotomized into "high", "medium" and "low" binary variables (see Appendix B for a description of the procedure).

TABLE 26: Mediating Effects Of Exposure To Violence And Deviant Peers

	b	S.E.	E.R.R.
Intercept (β_{00})	0.891^{***}	0.041	2.438
Disorder (γ_{01})	-0.212^{*}	0.102	0.809
Exposure to Violence (β_1)	0.168^{***}	0.018	1.183
Peer Deviance (β_2)	0.074^{***}	0.013	1.077
Random Effects			
Intercept (u_0)	0.033^{*}		
χ^2	105.519		

$^{+}$p<0.10 *p<0.05 **p<0.01 ***p<0.001

Deconstructing the Indirect Effect of Disorder on Antisocial Behavior

The main effects of living in medium or low versus high disorder neighborhoods are presented in Table 27. According to the estimates shown, in comparison with the high disorder neighborhoods, youths in low disorder communities have a 1.189 (b=0.173, $p<0.05$) greater expected involvement in delinquency and antisocial behavior, holding all other variables constant. Although seemingly counterintuitive, the estimates indicate that youths living in low disorder neighborhoods engage in a greater variety of antisocial and delinquent acts, findings that are actually comparable to other studies of disorder and delinquency.

TABLE 27: The Effects of Living in Medium and Low Disorder Neighborhoods

	b	S.E.	E.R.R.
Intercept (β_{00})	0.889	0.040	2.433
Medium Disorder (γ_{01})	0.141	0.093	1.151
Low Disorder (γ_{02})	0.173[*]	0.086	1.189
Exposure to Violence (β_1)	0.168[***]	0.019	1.183
Peer Deviance (β_2)	0.073[***]	0.013	1.076
Random Effects			
Intercept (u_0)	0.034		
χ^2	104.324[*]		

$^+p<0.10$ $^*p<0.05$ $^{**}p<0.01$ $^{***}p<0.001$

Figures 8 and 9 portray the effect of exposure to violence and peer deviance on antisocial behavior in high and low disorder neighborhoods. While exposure to violence significantly increases expected involvement in delinquency and antisocial behavior, Figure 8 also shows that this impact is more pronounced in low disorder neighborhoods. In Figure 9, the differences between low and high disorder are less clear, but the slope for peer deviance-antisocial behavior

is slightly steeper in the low disorder neighborhoods. More likely than not, in addition to the effects of exposure to violence and deviance of peers, it is also likely that protective parenting strategies adopted in disordered neighborhood also minimize exposure to violence and peer deviance, in turn influencing antisocial behavior. The findings for research questions 1 demonstrate that disorder has some effect on parenting strategies, in particular restrictiveness. Thus it is possible that family management may be influencing how disorder affects antisocial behavior, a relationship that is further explored in research question 4.
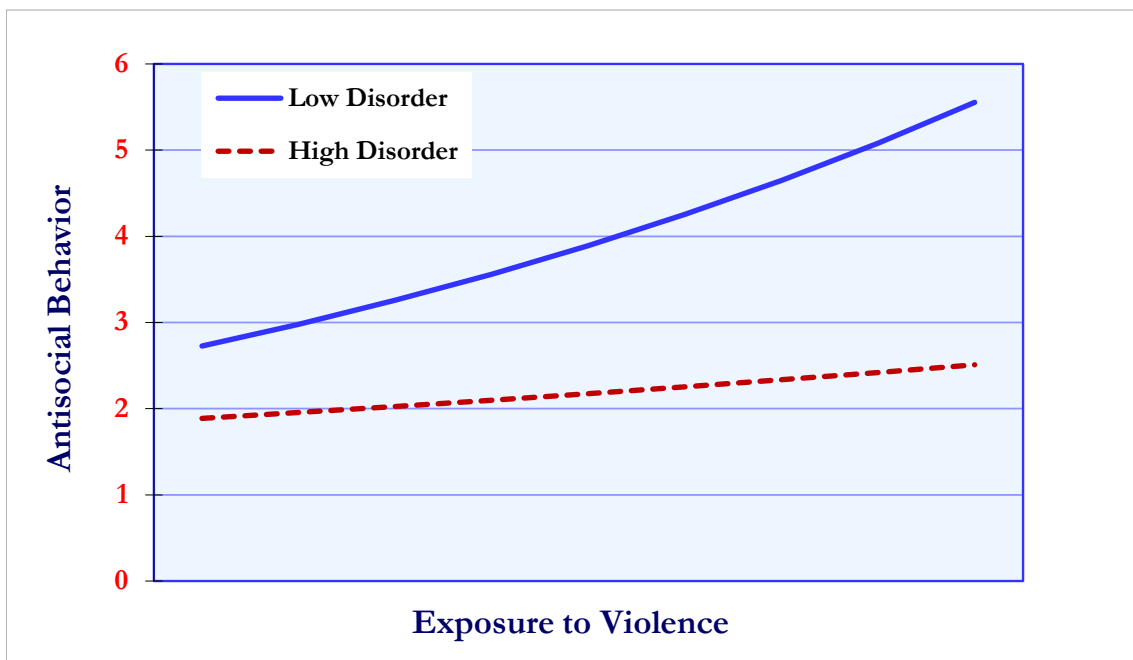
FIGURE 7: Antisocial Behavior by Exposure to Violence and Disorder
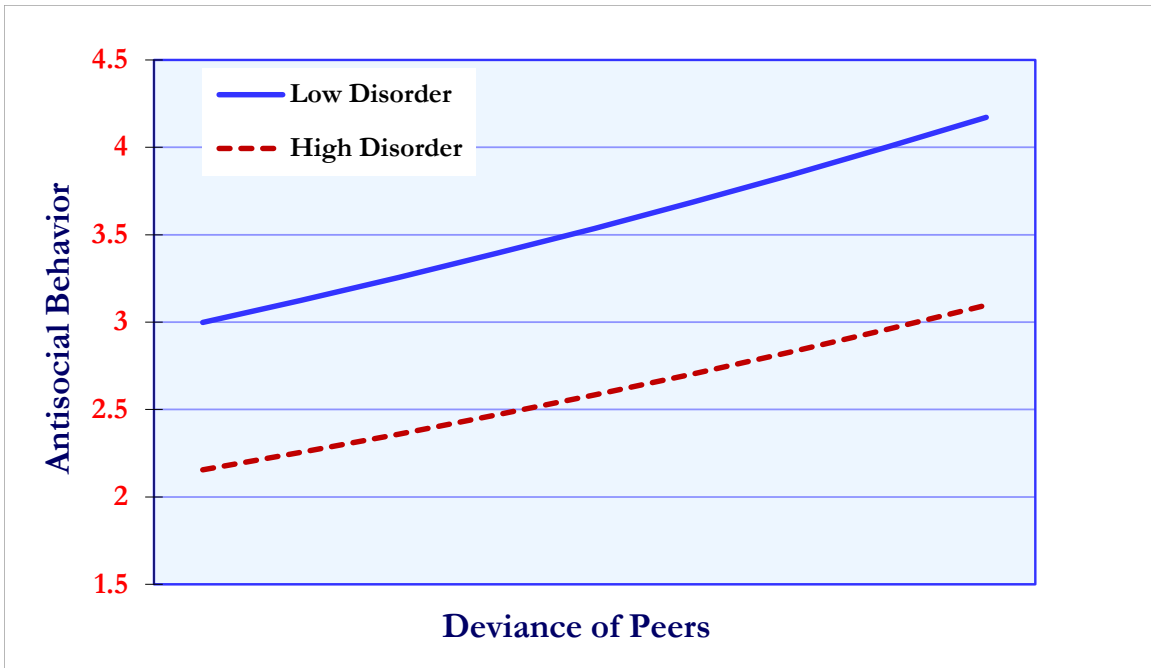
FIGURE 8: Antisocial Behavior by Exposure to Violence and Disorder

Sensitivity Analyses: Exploring the effects of neighborhood structural characteristics and disorder on youth antisocial behavior

With the introduction of the neighborhood structural characteristics and collective efficacy, the impact of disorder on average youth involvement in antisocial behavior was demonstrably reduced and no longer significant (Table 28). Furthermore, none of the neighborhood variables were shown to have a significant impact on antisocial behavior. The effects of exposure to violence and peer deviance on youth antisocial behavior remained significant, indicating that both proximal mechanisms of antisocial behavior continue to have an important influence on youth deviance.

TABLE 28: Antisocial Behavior, Disorder and Neighborhood Controls

	b	S.E.	E.R.R.
Intercept (β_{00})	0.896^{***}	0.042	2.450
Collective Efficacy (γ_{01})	-0.039	0.236	0.961
Concentrated Disadvantage (γ_{02})	-0.035	0.076	0.966
Immigrant Concentration (γ_{03})	-0.020	0.039	0.980
Residential Stability (γ_{04})	-0.024	0.048	0.976
Disorder (γ_{05})	-0.180	0.246	0.835
Exposure to Violence (β_1)	0.169^{***}	0.019	1.184
Peer Deviance (β_2)	0.074^{***}	0.013	1.077
Random Effects			
Intercept (u_0)	0.038		
χ^2	105.027^{**}		

$^{+}p<0.10 \quad ^{*}p<0.05 \quad ^{**}p<0.01 \quad ^{***}p<0.001$

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Research Question 4: Putting it all Together- The Multilevel Relationship between Disorder, Family Management and Antisocial Behavior

<u>Building the final model</u>

Guidelines to building a final model stem from whether a particular study is exploratory or theoretical or even whether predictors empirically contribute to model fit and variance explained (Luke 2004; McCoach 2010; Raudenbush and Bryk 2002). One the dangers of including all predictors, especially when estimating both the intercepts and one or more slopes is of oversaturating the model thereby overly partitioning the variance and increasing the risk that none of the variables will be of any significance. Therefore, the final model was built using a step-up process whereby first the level-1 predictors were reduced followed by the level-2 variables. Decisions pertaining to whether a variable was removed from the analyses were made according to three criteria: 1) significance of the variable in predicting antisocial behavior, 2) results of the hypothesis testing determining whether the variable contributed significantly to the model and 3) examining the correlation between the predictor and the dependent variable as well as other predictors in order to ensure that model misspecification and thus omitted variable bias were minimized. Of the family management variables examined developmental stimulation, alcohol, family activity involvement and youth activity involvement were removed.

In relation to the neighborhood controls, concentrated disadvantage and collective efficacy were deleted from the final model. Both variables are highly correlated with disorder but not, in this case, correlated with antisocial behavior. The decision to remove concentrated disadvantage was not only related to the fact that the variable was not a significant predictor of antisocial behavior, but because of issues related to multicollinearity whereby disorder's standard error was inflated when concentrated disadvantage was included in the model. Although I was not able to test this due to restrictions imposed on the census measures provided in the PHDCN data, it is

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possible that the "percentage of children under age 18" component of the concentrated disadvantage is capturing a similar concept to the "groups of teenagers hanging out in the neighborhood and causing trouble" included in the disorder measure, which may lead to problems in the model building. With respect to collective efficacy, the decision to remove it from the model was purely empirical as it did not contribute significantly to the model, nor was it related to the antisocial behavior measure studied here. However, as can be seen from the alternative models presented in Appendix E, even with collective efficacy included in the intercept model, disorder (although with an inflated standard error) continued to exert a significant influence on youth involvement in antisocial behavior. Upon reducing both the level-1 and level-2 variables, a parallel model was run whereby the same neighborhood predictors were incorporated for the intercept and slope models. This is an important starting point, and many researchers prefer these especially if there is a strong covariance between the intercept and slopes (McCoach 2010; Raudenbush and Bryk 2002).

Finally, in exploring the slope models, the relationship between supervision and antisocial behavior and exposure to violence and antisocial behavior were shown to significantly vary across neighborhood clusters. Both supervision and exposure to violence were group-mean centered and error terms allowed to be free, although after the neighborhood predictors were incorporated, the error terms were fixed as these predictors explained away the variability of the slopes. The resultant models are non-randomly varying slopes (Raudenbush and Bryk 2002). Group-mean centering removes the between-group variation in the independent variables. As such, the slope coefficient becomes a better representation of the relationship at level-1 and the estimation of the variance is therefore much more precise (Enders and Tofighi 2007). It is important that when variables are group-mean centered that aggregate variables of both are

introduced in the intercept model because "without an aggregate or contextual variable at level 2, all of the information about the between-cluster variability is lost," (McCoach, 2010: 130).

A Final Model of Disorder, Family Management and Antisocial Behavior

When solely estimating the effects of disorder and parenting on antisocial behavior, the results suggest that parenting strategies exert a more substantial influence on youth problem behavior, than disorder (Table 29), as predicted by Hypothesis 8. The lack of an effect by disorder is hardly surprising considering that in previous analyses disorder was found to have no statistically significant impact on antisocial behavior (Table 24). It is, nevertheless possible that disorder's influence on youth antisocial behavior is indirect; operating through family management, but this was not supported by the main effects of Model 8a. If parenting practices had indeed intervened in the relationship between disorder and problem behavior, a change in the disorder coefficient would have emerged, but no such change occurred. Therefore, even though disorder (on its own) does have an impact on some of the family management practices, as illustrated by the findings for Research Question 1, the effects did not translate into an indirect influence of disorder on mean levels of delinquent and antisocial behavior.

Also related to Model 8a, the reduced family management model confirms what prior analyses conducted revealed. Of the ten parenting strategies examined in this study, four were classified as promotive and six as protective/preventative. None of the promotive strategies were found to exert any statistically significant effects on youth engagement in antisocial behavior meaning that only the preventative practices were retained during the building of the final model.

	Model 8a			Model 8b			Model 8c		
	b	S.E.	E.R.R.	b	S.E.	E.R.R.	b	S.E.	E.R.R.
Intercept (β_0)	0.901***	0.040	2.462	0.880***	0.039	2.411	0.862***	0.040	2.368
Disorder (γ_{01})	-0.099	0.108	0.906	-0.303**	0.105	0.738	-0.284*	0.119	0.753
Aggregate Supervision (γ_{02})	-0.100	0.065	0.905	-0.052	0.060	0.949	-0.045	0.060	0.956
Aggregate ETV (γ_{03})				0.286***	0.056	1.331	0.251***	0.061	1.285
Discipline (β_1)	0.011*	0.005	1.011	0.008	0.006	1.008	0.008	0.006	1.008
Supervision (β_2)	-0.053**	0.019	0.949	-0.034+	0.020	0.967	-0.031	0.021	0.969
Residential Stability (γ_{21})	0.040+	0.022	1.041	0.047*	0.022	1.048	0.048*	0.023	1.049
Health (β_3)	0.036	0.044	1.036	0.068	0.043	1.071	0.067	0.045	1.069
Sex (β_4)	0.093***	0.024	1.097	0.050*	0.025	1.051	0.062*	0.026	1.064
Restrictiveness (β_5)	-0.339***	0.060	0.712	-0.192**	0.063	0.825	-0.137*	0.069	0.872
Knows Peers (β_6)	-0.111+	0.065	0.895	-0.079	0.063	0.924	-0.074	0.065	0.929
Exposure to Violence (β_7)				0.136***	0.019	1.145	0.090***	0.024	1.094
Immigrant Concentration (γ_{71})				0.033+	0.017	1.033	0.032+	0.018	1.033
Deviance of Peers (β_8)				0.076***	0.015	1.079	0.072***	0.016	1.075
Cohort 12 (β_9)							0.279***	0.084	1.322
Warmth (β_{10})							-0.021	0.015	0.979
Gender (β_{11})							0.240***	0.070	1.271
Hispanic (β_{12})							0.047	0.107	1.048
African (β_{31})							0.031	0.090	1.031
SES (β_{14})							0.009	0.045	1.009
Random Effect									
Variance	0.041**			0.032*			0.034*		
χ^2	109.433			99.509			101.195		

+p<0.10, * p<0.05, **p<0.01, ***p<0.001

The main effects displayed in Table 29 demonstrate that although several of the family management strategies shape antisocial behavior in the predicted manner, the number of sex-related conversations parents have with their children exacerbated rather than reduced the risk of antisocial behavior, even after including disorder. The frequency of these conversations had no protective relevance in reducing antisocial behavior. For every additional talk, youth's expected involvement in delinquency increases by a factor of 1.097 (β=0.093, p<0.01). It is possible that this somewhat paradoxical effect is moderated by child characteristics like gender or age, both of which were previously found to be solidly related to antisocial behavior (Table 23).

The importance of restrictiveness and supervision is also salient in these results. With respect to participation in delinquent and antisocial acts, controlling access to the neighborhood continues to have clear benefits for youths. For children whose parents restrict their access to the neighborhood, expected involvement in delinquency and antisocial behavior decreases by a factor of 0.712 (b=-0.339, p<0.001), holding all other variables constant. Keeping youths from spending unsupervised time in the neighborhood reduces antisocial behavior by close to 30%. Likewise, the level of supervision parents provide their children is equally protective against problem behavior, as a unit increase in supervision decreases involvement in antisocial behavior by a factor of 0.949 (b=-0.053, p<0.01), representing a 5% decrease. Moreover, the analyses revealed an influence of residential stability on the relationship between supervision and antisocial behavior. While neighborhood residential stability may not significantly influence mean levels of antisocial behavior (intercept model), it does according to the findings, have a significant effect on how supervision shapes expected involvement in antisocial behavior. Supervision seems to matter more in neighborhoods where stability is lower. However, contrary

Hypothesis 9, disorder did not affect the relationship between supervision and antisocial behavior.
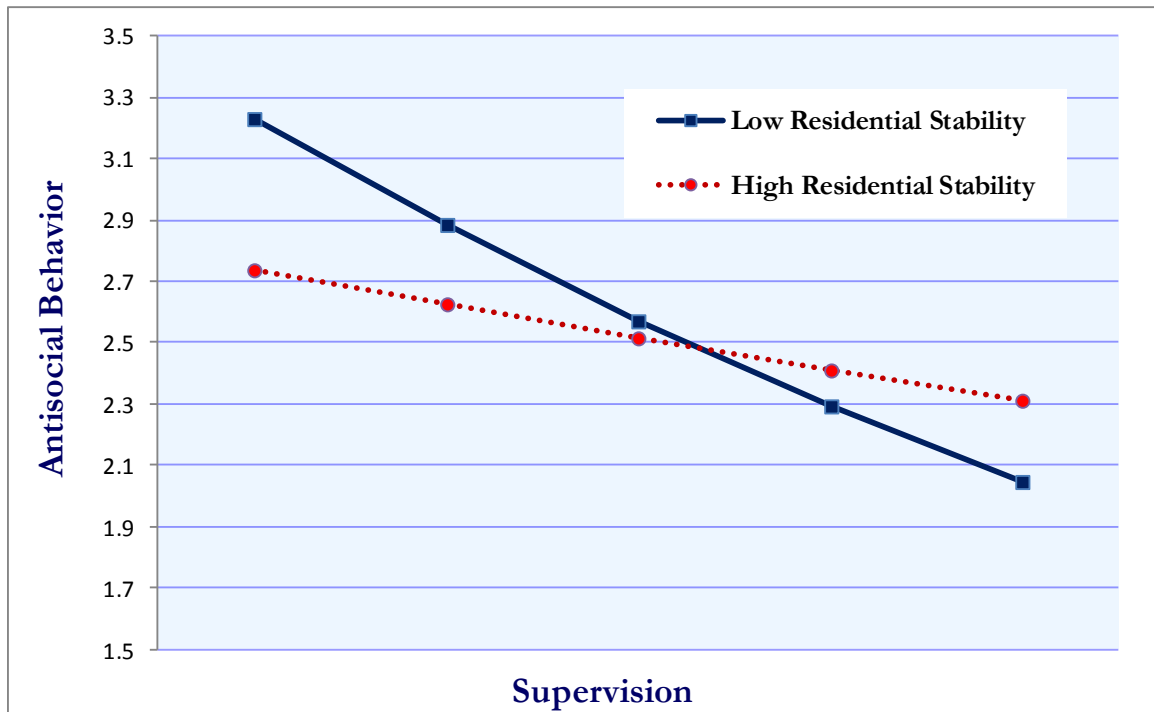
Figure 9: Antisocial behavior by Supervision and Residential Stability

Just as supervision and restrictiveness serve as preventative strategies parents adopt that can lower the risk of antisocial behavior, the results for Model 8a also underscore how damaging certain parenting behaviors can be. Harsh parental disciplining has obvious negative consequences for youth antisocial behavior. The positive and significant coefficient indicates that higher instances of harsh disciplining predict more youth involvement in delinquency and antisocial behavior. For every additional instance of harsh disciplining youth are subjected to, participation in antisocial behavior increases by a factor of 1.011 (b=0.011, p<0.05).

The role of the proximal mechanisms of antisocial behavior is explored in Model 8b, the estimates of which are also presented in Table 29. The intercept now represents the average expected involvement in antisocial behavior for a youth living in an average disorder

neighborhood, and who is average across all the individual-level predictors. The mean expected involvement in antisocial behavior for the average youth is 2.411 (*b*=0.880), a slight decrease from the 2.462 (*b*=0.901) in Model 8a. The χ^2 test remains statistically significant, indicating that there is still unexplained variation in the average antisocial behavior across neighborhoods. Interestingly, the strongest predictor of mean antisocial behavior is the aggregate of exposure to violence, which suggests that the level of exposure to violence in the neighborhood exerts effects on youth antisocial behavior above and beyond the individual effect of exposure to violence (*b*= 0.286, p<0.001).

In stark contrast to the findings shown for Model 8a, after including both exposure to violence and deviance of peers, disorder now has a statistically significant effect on mean levels of antisocial behavior, albeit in the opposite direction to predicted. A unit increase in disorder decreases the average expected involvement in antisocial behavior by a factor of 0.738 (*b*=- 0.303, p<0.01), meaning that average expected participation in antisocial behavior decreases 26% with each additional unit increase in disorder. The introduction of exposure to violence and peer deviance also brought about changes in the relationships between the family management measures and antisocial behavior. The results suggest that exposure to violence and deviance of peers mediates the relationship between family management and youth problem behavior, which supports Hypothesis 10. There were noticeable decreases in the magnitude of the discipline, supervision, alcohol, sex, restrictiveness and parental knowledge of child's peers. But all of these, with the exception of knows peers, remained statistically significant indicating that the proximal mechanisms of antisocial behavior only partially mediated these relationships (Sharkey 2006). There was also a substantial decrease in the intercept variance from Model 8a to Model

8b (0.041 to 0.032.) indicating that an additional 22% of the variance in antisocial behavior was explained after the introduction of exposure to violence and association with deviant peers.

The slope relationship between exposure to violence and youth antisocial behavior was found to significantly vary across neighborhood clusters, but disorder was not found to statistically and significantly affect how exposure to violence influences youth deviance, thus not supporting Hypothesis 11. Instead, of the neighborhood level predictors explored, only immigrant concentration had a marginally significant impact on this slope model. As can be seen in the figure below, the effect of exposure to violence on antisocial behavior is more pronounced in neighborhoods with higher levels of immigrant concentration.
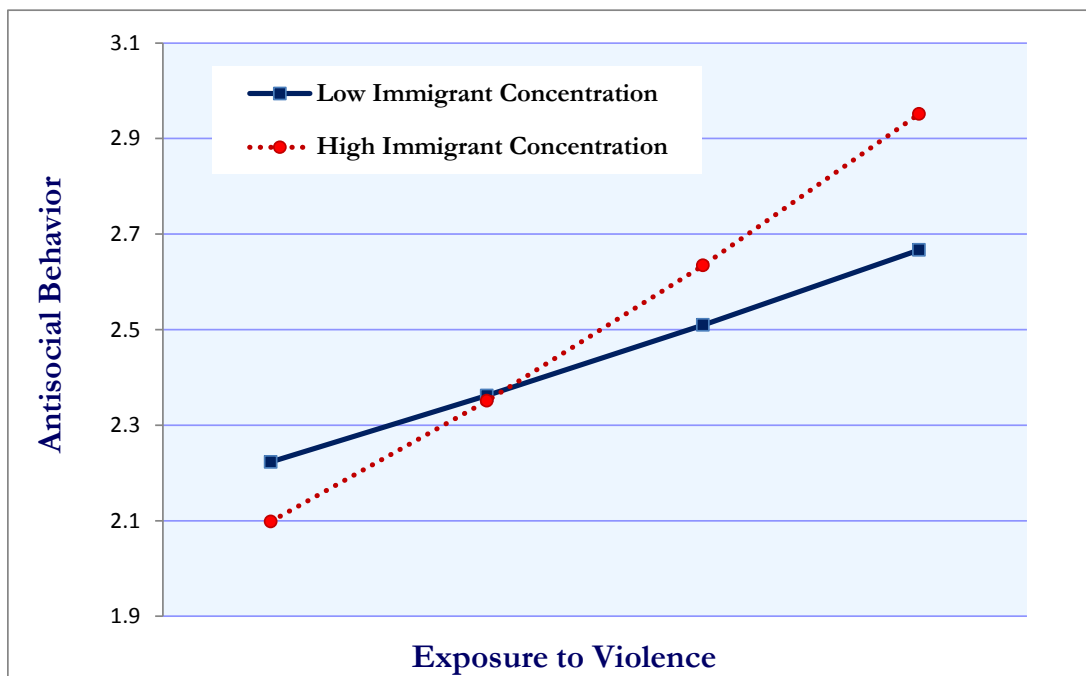
Figure 10: Antisocial behavior by Exposure to violence and Immigrant Concentration

The relationship between exposure to violence, restrictiveness and disorder was also graphically examined.
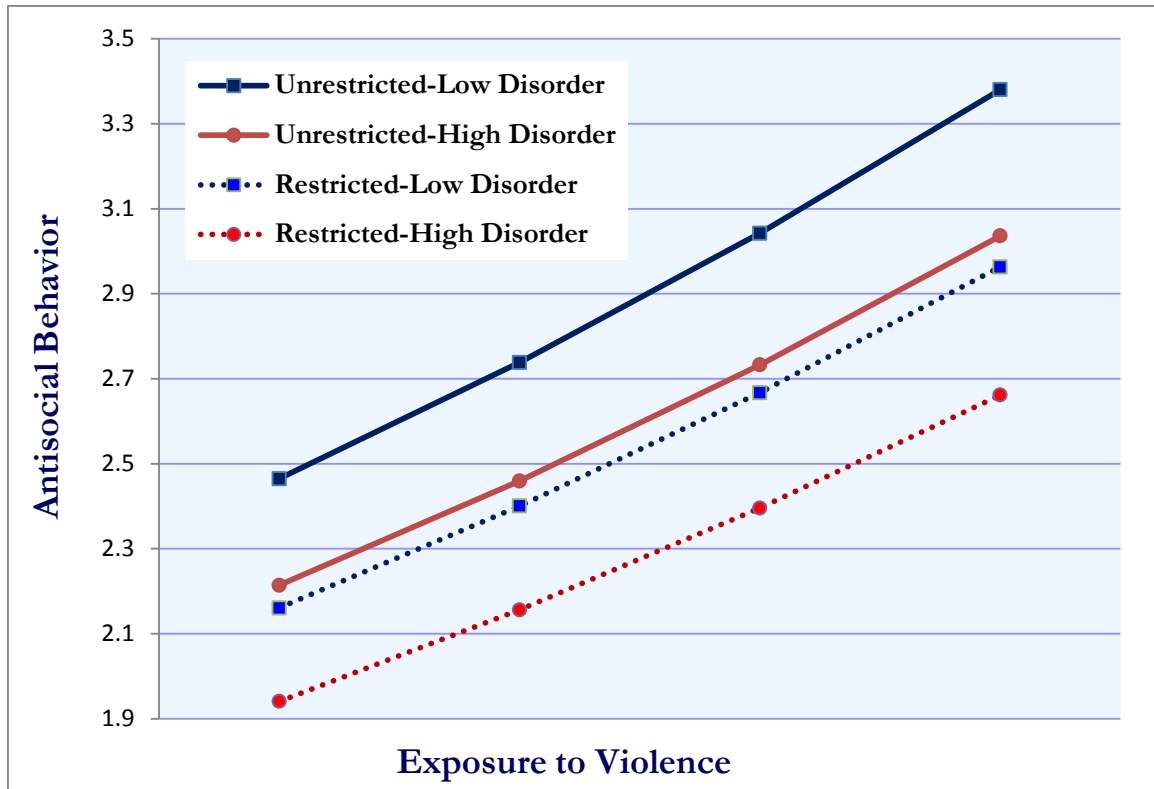
Figure 11: Antisocial behavior by Exposure to violence, Restrictiveness and Disorder

Figure 10 provides a visual representation of the relationship between exposure to violence and antisocial behavior while controlling for parental restriction and level of disorder in the neighborhood. There are clear differences between the groups with respect to the intercept. The mean levels of antisocial behavior for youths who are unrestricted and live in low disordered neighborhoods have a greater expected involvement in antisocial behavior. Although exposure to violence increases the risk of antisocial behavior across all categories, being restricted, regardless of disorder level can attenuate the influence of exposure to violence. Restrictiveness in high disorder neighborhoods appears to be especially beneficial.

The influence of several individual-level child and family characteristics was estimated in Model 8c, to control for potential moderating effects. Among the several control variables incorporated, only gender and cohort membership were significantly related to antisocial

behavior. Table 29 presents the main effects for these sensitivity analyses. The magnitude of several measures, with the exception of peer deviance, was further reduced with the introduction of the individual-level controls, yet some of the parenting practices still have a robust impact on antisocial behavior. Note that while the statistical significance of disorder on average antisocial behavior decreased the restrictiveness coefficient, which decreased in both magnitude and significance, still has a significant impact on antisocial behavior. As the findings for research question 2 suggest, gender and cohort membership in particular, considerably modify the relationship between restrictiveness and youth involvement in antisocial behavior.

Similar to the findings for research question 2, members of the older cohort have a greater expected involvement in antisocial behavior as do the boys. In essence, compared to children in cohort 9, being in cohort 12 increases expected involvement in antisocial behavior by 32% (b= 0.279, p<0.001, just as being male increases it by 27% (b= 0.240, p<0.001. Interestingly, the intercept variance did not significantly change after the inclusion of the individual-level controls, suggesting that the individual-level controls did not explain much more of the intercept variance than Model 8b.

CHAPTER 6- Discussion and Conclusions

Considerable debate has surrounded the issue of neighborhood effects on child and youth development. Specifically, the influence neighborhood conditions and characteristics may have on those who live in and experience these conditions first hand (Brooks-Gunn, Duncan, Klebanov, and Sealand 1993; Furstenberg et al. 1999; Leventhal and Brooks-Gunn 2000). While increasing research has been dedicated to understanding the complex relationships between community circumstances and individual behavior, most findings have been mixed. Behavior, much of the research suggests, is largely explained by individual-level factors (Leventhal and Brooks-Gunn 2000). Indeed, as many studies indicate, family processes, especially during childhood and early adolescence, tend to exert greater influences on youth socialization than do components of the macro-level community. But neighborhood context, although not as strongly as family, peer and individual contexts, matters too, and quite a few studies find relevant neighborhood-behavior relationships, some of which explicitly look at disorder.

The concept of neighborhood disorder, conceived long before Wilson and Kelling's (1982) broken windows theory, has piqued the interest of many. Evaluations of neighborhood incivilities, hassles, dangers and in the most recent permutation- disorder have highlighted how it aggravates a host of ailments, for those who must face it day after day. From stress, to psychological withdrawal and even obesity, the destructive influences of neighborhood disorder are far-reaching, extending from adults to children. Unfortunately, like much of the literature devoted to assessing neighborhood effects on individual behavior, findings regarding disorder are still inconclusive. Furthermore, of the unique studies that have evaluated how neighborhood conditions have impacted parents and informed parental decisions, few focus on the way in which disorder shapes parental management practices and how these parental responses

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influence child and youth antisocial behavior (Elliott et al. 2006; Furstenberg 1993; Furstenberg et al. 1999).

In order to address these evident gaps in the research, the dissertation objectives were threefold. First, to explore how neighborhood conditions, in particular disorder, mold individual behavior, specifically, how neighborhood disorder influences parental management practices and youth involvement in antisocial behavior. Second, I unpack family management strategies and expand upon current conceptions of supervision and monitoring, moving parenting from within to outside the home and borrowing from the conceptual framework proposed by Furstenberg and colleagues (1999) to do so. And last, to fully portray the multileveled relationship between disorder, family management styles and antisocial behavior, in an attempt to inform both theory and policy on the relevant, but somewhat understudied mechanisms underlying this multicontextual relationship. Using parent and youth data from the three waves of the PHDCN Longitudinal Cohort Study and neighborhood information from the Community Survey, a series of hierarchical linear models were conducted testing the relationships between disorder, family management and youth involvement in antisocial behavior. Several important conclusions are drawn from these findings.

First, when examined on its own, disorder has a significant effect on several family management strategies. Parents living in neighborhoods with higher levels of disorder are less likely to engage in shared family activities, meaning fewer outings, trips and support for children's hobbies. Living in these conditions also means reduced opportunities for developmental stimulation. Parents in these neighborhoods tend to provide fewer books, music and reference materials than do parents in less disordered areas. Just as the importance of these promotive practices is emphasized by Furstenberg et al (1999), so are the financial resources

parents can access in order to deliver them. More often than not, parents living in disorder are financially constrained and therefore unable to supply enough developmental stimulation for their children. The negative relationship between disorder and developmental stimulation may in fact reflect the economic status of the family, rather than a response to disorder itself.

Interestingly, according to the data, disorder inhibits parents' acquaintance with their children's peers, as parents in disordered communities are less likely to know their children's friends. Therefore, contrary to the predicted hypothesis, disorder does not foster this protective strategy in parents. In neighborhoods rife with disorder, social control like social ties are severely weakened (Molnar, Gortmaker, Bull, and Buka 2004; Roche and Leventhal 2009; Sampson 2003; Sampson and Raudenbush 1999). The lack of social networks amongst neighbors may also impede parental outreach which in turn explains why parents in these communities are less likely to establish bonds with their children's friends.

More importantly, the positive association between disorder and parents' decision to limit their children's access to the neighborhood is in accordance with much of the literature testing parent preventative practices (Elliott et al. 2006; Furstenberg et al. 1999). Parental desire to protect their children from noxious neighborhood environments illustrates the importance of good parenting in bad neighborhoods. In problematic neighborhoods, preventing children from spending time unsupervised in the neighborhood is apparently the go-to strategy, and is congruent with the propositions made in this dissertation. For the most part, the analyses revealed that disorder is especially predictive of protective/preventative family management practices suggesting that parents respond to the negative environment disorder represents and seek to minimize their children's exposure to it.

Second, the incorporation of neighborhood-level structural characteristics muddied the relationship between disorder and the individual family management methods. Across the board, immigrant concentration was the strongest predictor of each parenting practice. Immigrant concentration, like disorder, may inhibit the formation of social bonds between neighbors (Graif and Sampson 2009; Putnam 2007) potentially informing parental decisions regarding supervision, monitoring and within the home promotive strategies. In neighborhoods with higher concentrations of foreign and Latino born, parents provide less developmental stimulation as measured here, more restrictiveness and are less likely to know their children's peers. Oftentimes, researchers view effects of population heterogeneity within a neighborhood as a structural characteristic, when it may also represent cultural transmission of values within and across cultures. This relationship becomes especially evident when examining how child and family characteristics moderate family management practices, as Hispanic children received less developmental stimulation, but were more likely to be restricted by their parents, compared to white children. The impact of immigrant concentration on parenting may, beyond the structure of the neighborhood, reflect cultural differences toward childrearing.

Perhaps the most unexpected finding, but not unlike previous research by Sampson and Raudenbush (1999), is the shift in the relationship between disorder and restrictiveness, following the introduction of both neighborhood and individual level controls. Prior to including child and family measures, collective efficacy had the greater influence on restrictiveness. Parents in high collective efficacy neighborhoods were less restrictive, allowing their children to spend time in the neighborhood without supervision. However, race and cohort membership clearly regulate neighborhood effects on restrictiveness. Parents in higher disorder but also higher collective efficacy were more inclined to allow child access to the neighborhood. It may

be that these findings represent an interaction between disorder and collective efficacy and a cross-level interaction between these neighborhood measures and the relationship between individual characteristics and restrictiveness. In high or medium collective efficacy neighborhoods where disorder is medium or high, parents resort less to preventative parenting methods, especially for the older children, as demonstrated by the results for Research Question 1.

Third, family practices can function effectively in curbing antisocial behavior and its proximal mechanisms; exposure to violence and association with deviant peers. In relation to exposure to violence, with the exception of the number of sex-related conversations parents have with their children, three out of the four management strategies employed outside the household significantly predicted youth's expected exposure to violence. Like others have shown, youth activity involvement has a complex relationship with exposure to violence and youth behavior (Fauth, Roth, and Brooks-Gunn 2007b; Gardner and Brooks-Gunn 2008; Gardner and Brooks-Gunn 2009). The analyses clearly suggest that greater participation in these activities actually increases expected exposure to violence, while restrictiveness has a strong protective influence on exposure to violence and is the only parenting practice, with the exception of parents' knowledge of children's peers that affects peer deviance. In fact, as much research, including this dissertation, demonstrates, competent family management methods can minimize both exposure to violence and association with deviant peers, and ultimately involvement in antisocial behavior (Warr 2005; Lahey et al 2000; Criss et al 2009; Gibson et al 2009).

The relevance of parental restrictive practices is highlighted by the results and in accordance with the conclusion of several studies. More importantly, the magnitude of the association between the preventative strategies adopted for when children are not at home,

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namely restrictiveness, and antisocial behavior is in agreement with findings throughout the

literature (Elliott et al. 2006; Loeber and Stouthamer-Loeber 1986; Patterson and Stouthamer-

Loeber 1984b; Seidman et al. 1998). This study illustrates, as other research does, the role

parental supervision and protective practices play in reducing youth involvement in antisocial

behavior and delinquency. But what makes this project distinctive is the decoupling of the

supervision and monitoring practices into within and outside the home components. The data

show that, for the age groups examined here, limiting access to the community can have robust

positive effects on youth problem behavior. These findings also underscore the relevance of

both exposure to violence and peer deviance in predicting antisocial behavior, which is also

consistent with the large body of research on both these mechanisms (Chauhan and Reppucci

2009; Gibson, Morris, and Beaver 2009).

Neither family nor youth family activity involvement had a statistically significant impact

on youth deviant behavior, findings not in agreement with those of Furstenberg et al (1999) or

Gardner and Leventhal (2009). For these teens shared family activities are simply not as

important in predicting conduct problems, especially when examined in conjunction with other

more proximal mechanisms. Similarly, unlike the criminogenic influence of youth activities in

previous findings, the lack of an effect here suggests that other parenting strategies have stronger

influences, above and beyond those imparted by these types of activities. Although Furstenberg

et al (1999) find less of an effect of restrictiveness on youth development; the models analyzed in

this dissertation show a powerful impact of parental restrictiveness practices on youth

involvement in antisocial behavior. The contemporaneous nature of the data used by

Furstenberg et al (1999) versus the longitudinal data of the PHDCN may help explain the

difference in the findings. It is possible that preventative parenting may have a greater payoff, in the long run, for teens, a protective benefit not evidenced by Furstenberg and his colleagues.

Interestingly, as depicted in the results for both research questions 2 and 4, the numbers of sex-related conversations parents have with their children actually predicted greater involvement in antisocial behavior. Rather than act as a protective factor against delinquency, these parent-child talks increased the risk of deviant behavior. It is possible that parents, who choose to engage in these conversations more regularly, do so in response to behaviors their children are exhibiting, whereby parents feel the need to discuss sex as a reaction to behaviors they see as more problematic (i.e., the causal sequence in the model is misspecified) However, there is some evidence to suggest that it is the content of these conversations rather than the frequency, in addition to the quality of parent-child relations that may have a significant influence on how children behaviorally respond to these talks. For example, O'Sullivan, Meyer-Bahlburg, and Watkins (2001) show that positive communication about sex between parents and their children may be muted by the quality of the relationship, especially for girls as they transition through adolescence. Moreover, the measure used here does not assess family positions regarding sex, abstinence or rules about dating, even though there is evidence to suggest these can delay sexual initiation and reduce risky behavior (Hovell, Sipan, Blumberg, Atkins, Hofstetter, and Kreitner 1994). Also, the positive relationship between the number of sex talks and antisocial behavior may simply reflect the fact that parents of cohort 12 had these talks much more frequently than parents of cohort 9, and that youths in cohort 12 engaged in significantly more instances of antisocial behavior than those in cohort 9. Regardless, this relationship warrants further exploration not only because of the importance antisocial behavior has in child and adolescent development but because evidence suggests that adolescents, in particular urban adolescents are

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at greater risk for STDs, pregnancy and early sexual initiation (Browning, Leventhal, and Brooks-Gunn 2005; Browning, Leventhal, and Brooks-Gunn 2004b; Hovell et al. 1994; Miller, Benson, and Galbraith 2001).

Fourth, according to the results, disorder has no direct effect on youth delinquency and antisocial behavior. The null findings from Research Question 3 are incongruent with some of the literature (Furstenberg et al. 1999; Romano, Tremblay, Boulerice, and Swisher 2005). However, once the proximal mechanisms of antisocial behavior were included, a negative but significant impact of disorder emerged. That lower disorder predicts greater involvement in antisocial behavior compared to higher disorder contradicts the most basic premise of broken windows theory and the notion that drug-ridden, dilapidated neighborhoods promote youth misbehavior. Further analyses revealed, however, that the relationship between exposure to violence and antisocial behavior is much more pronounced in neighborhoods where disorder is lower, signaling that perhaps parenting methods are at least partially responsible for this finding. Relaxed restrictive practices in lower disorder neighborhoods, means children are not only freer to roam the community but also more vulnerable to victimization, violence and deviant peers, strong predictors of youth deviance.

Fifth, in general, and as purported by several researchers (Elliott et al. 2006; Ingoldsby and Shaw 2002; Leventhal and Brooks-Gunn 2000), family management practices and individual-level characteristics are stronger predictors of antisocial behavior than are neighborhood conditions such as disorder. The negative effect of disorder on child and youth behavior, in addition to the strong impact restrictiveness, exposure to violence and peer deviance have on antisocial behavior further support the significance of parenting in dangerous neighborhoods. O'Neill and associates (2001) report that parental monitoring and restriction are particularly

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relevant in bad neighborhoods and find important interactions between parenting and

neighborhoods; specifically, the utility of protective parenting in damaging neighborhood

environments. As previously mentioned parents in low disorder neighborhoods are less likely to

use restrictive methods and more prone to relaxing supervision and monitoring. Furthermore,

parents of older kids and boys are also more inclined to be less restrictive. It is the interaction of

these processes that affects youth antisocial and deviant behavior. While the protective effects of

family practices can counterbalance the negative influence of neighborhood disorder (Brody et al

2001), the data also show that lax family management in neighborhoods where disorder is less of

a problem, can have deleterious consequences for child and youth development.

Limitations

The current dissertation, however exploratory, offers significant insights into the

relationship between community, parenting and youth development. There are, nonetheless,

several methodological and data challenges worth addressing.

Model Misspecification Errors

A primary methodological aim of this project was to target the model misspecification

problems of previous neighborhood and home research by decoupling parenting strategies and

placing them within and outside the household. Nevertheless, as comprehensive as the processes

examined here are, there is always the danger that some interactions have been overlooked. For

example, it is possible if not likely, that parent management strategies interact with each other.

Parents who restrict may be parents who are more involved in shared activities or who use less

harsh disciplining. Each strategy was individually assessed, but there may be combinations of

strategies and parenting styles that have not been examined. While conceptually related, the

family management practices were independently evaluated in Research Question 1, and

examined as predictors in Research Question 2 and 4, but whether it is a combination of strategies that influence behavior, rather than each one individually within the model, was not tested.

The method used here, is however, not without merit. Expanding our conception of parenting and family management beyond the household walls was a primary goal in this study. The characterization of each practice into a within or outside the home practice, promotive or preventative strategy served to categorize the parenting methods and identify how and where they operate. Establishing a common tie amongst them was critical, if not a direct examination of their interactions. The findings in this dissertation provide a solid step in understanding the complexities of parenting and the value of incorporating a more comprehensive definition of family management strategies in studying both "good" and "bad" neighborhoods.

Another possible contributor to model misspecification concerns the neighborhood-level influences. Neighborhood structural characteristics as well as conditions like disorder and collective efficacy are difficult to detangle. The strong associations between these measures (Appendix C), and cross-level interactions can sometimes obscure relevant relationships both at the macro and micro level. Parenting and youth behavior may look different when neighborhood characteristics are not treated as individually operating units and instead examined as more global descriptors of neighborhood. For example, rather than look at disorder on its own, or collective efficacy as a control, it may be that parents respond to a combination of collective efficacy and disorder. The efforts dedicated to studying the relationship between disorder and collective efficacy (Sampson 2003; St. Jean 2007) have, to a degree, neglected neighborhood-level interactions; in essence whether the impact of disorder coupled with collective efficacy may shape parenting and youth behavior. This limitation, notwithstanding, the significance of

disorder is emphasized by the results presented in Chapter 5. Moreover, a critical objective of

this dissertation was met, as the findings comprehensively illustrate how neighborhood affects

family management strategies, and stress the key role restrictive parenting plays in disordered

neighborhoods.

<u>Variability of Antisocial Behavior Across the Neighborhood Cluster</u>

Research assessing neighborhood effects on youth delinquency and antisocial behavior

within a multilevel framework have demonstrated that the variance of antisocial behavior to be

explained by neighborhood factors is generally small (Simons, Simons, Burt, Brody, and Cutrona

2005). In a recent examination of the relationship between collective efficacy and delinquency,

Simons and colleagues determined that only 5% of the variance in delinquency occurred between

neighborhoods, a little higher than the variance calculated in the current study. Although the

HLM results do suggest that there is significant variability of antisocial behavior across

neighborhoods, warranting a multilevel approach, there are inherent limitations that should be

discussed. Firstly, the amount of variance because it is small, may overburden the HLM models.

Building a model to adequately explain the variance can lead to oversaturation and extreme

partitioning of the variance resulting in insignificant neighborhood effects, when in fact these are

significant. Secondly, the 4% may not reflect actual differences across neighborhoods but

merely residual error or "noise" which cannot be explained by the predictors. And thirdly,

because the variance is small, other statistical methods (like OLS with cluster corrections or

cluster analysis) may have been as appropriate if not more to assess the relationship between

disorder, family management and antisocial behavior. Nevertheless, and considering the amount

of variance to be explained, the models presented here successfully explain some of the variation

of antisocial behavior across neighborhoods, and do demonstrated important neighborhood effects on both parenting and antisocial behavior.

Generalizability

The richness and depth of the PHDCN data make them distinctly suited to the current investigation. However, the data are limited to the city of Chicago and ideally, it would be preferable to have a more representative sample, one that would allow rural as well as urban distinction. Furthermore, by focusing on cohort 9 and 12, neither changes in family management practices over time nor the relevance of these strategies for younger children was examined here. Nevertheless, the racial and cultural diversity represented in the PHDCN data, still permits an in depth investigation of family management across a heterogenic population, and as such extends these findings to other urban, if not rural populations.

The failure to account for the age-graded effect of neighborhoods on youth development is one of the most common criticisms of neighborhood-development research. Essentially, it is when children begin to fully experience their surroundings that neighborhood conditions and characteristics will have a more direct impact. It makes less sense to attempt to capture neighborhood effects during infancy or early childhood, as children are mostly shielded by their caregivers (Brooks-Gunn, Duncan, Klebanov, and Sealand 1993; Elliott et al. 2006). In order to successfully determine whether neighborhood effects influence parenting and youth behavior, it is necessary to select older youths who are more likely to be exposed to their community circumstances. By focusing on cohorts 9 and 12, this study addresses some of the criticism and evaluates neighborhood impact on an age-appropriate sample. The findings and conclusions, although not entirely generalizable to all children and youth, provide a much needed picture of

how disorder and parenting can, for better or worse, influence the behavior of children and youth.

Attrition and Missing Data

As with any longitudinal project, there are losses due to attrition from wave to wave of data collection. Of the over 6000 respondents surveyed at the outset of the Longitudinal Cohort Study, approximately 20% were lost by Wave 3. Only 25 of the participants were deceased, meaning the overwhelming majority were unreachable for follow-up. There are numerous explanations for why over 1000 of the initial subject pool no longer participated in the study including moving within Chicago, moving outside Chicago, or simply becoming unavailable to participate; however research suggests that there may be a relationship between attrition and delinquency, whereby individuals who no longer participate in a study have higher rates of deviant behavior (Thornberry, Bjerregaard, and Miles 1993). Although some have found few significant differences between subjects who remain in a study and those who leave with respect to delinquency and antisocial behavior (Loeber, Stouthamer-Loeber, Van Kammen, and Farrington 1991) it is nevertheless important to recognize the potential for bias in the estimates produced in these instances. A comparison of antisocial behavior (measured at Wave 1) between all respondents in the longitudinal cohort study at Wave 1 and those who remained in the study revealed no significant differences in levels of antisocial behavior, however issues of validity may still exist and should be considered when examining the results presented here.

As is to be expected, there are also a number of non-trivial missing cases and values. Precisely why subjects dropped out from the study is not known and can represent genuine differences in terms of residential biases or attitudes regarding parenting. The attrition analyses performed at the beginning of this dissertation underscored significant differences between the

retained and lost sample members in relation to demographic characteristics, with the retained

sample having both a higher SES and education level[28]. Nonetheless, there were no statistically

significant differences between the two groups for the antisocial behavior measure. In relation to

individual measures, a listwise deletion procedure rather than a multiple imputation method was

used during the HLM analyses. Multiple imputation procedures are a possible alternative to

listwise deletion although there is some evidence to suggest that imputation procedures in the

PHDCN data produce similar results to the listwise deletion (Maimon and Browning 2012).

Nevertheless, in view of possible measurement error and biases, missing values are still a

limitation to be noted.

Measurement Reliability and Validity Issues

Great emphasis is placed on family management practices throughout this dissertation, but

as with any use of secondary data, it is possible that some of these strategies are not ideally

measured. The restrictiveness variable is an example of this. Although the results are clear, and

findings straightforward, reducing parental restrictiveness practices to a single binary measure of

whether yes/no parents allow their children to spend unsupervised time in the neighborhood is

not without potential problems. It would be preferable to have a plethora of parenting practices

that capture these preventative practices more completely. In a perfect parenting world, what

parents say is what children do and data would measure these relationships accurately. The

restrictiveness variable functioned, across the board, as hypothesized, demonstrating its

usefulness in reducing youth involvement in antisocial behavior and thus indicating good content

validity. Additionally, whether children obey parents' restriction would certainly be important in

assessing how preventative parenting may influence deviant behavior. Moreover, whether, such

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[28] Similar findings are reported in other research using the PHDCN like Maimon and Browning 2010.

a measure operates similarly in other studies, is not known, raising the question of reliability. Nevertheless, this dissertation does a good job in bringing parental restrictive practices to the forefront and the results are congruent with both the research that has sought to evaluate family management and youth conduct and the hypotheses proposed in this study.

There is also the concern that compared to other self-reported surveys such as the National Longitudinal Survey of Youth, the levels of antisocial behavior reported here are lower than would be expected. For example, although over 70% of the sample studied in this dissertation engaged in at least one act of antisocial behavior, a finding similar to Apel and Kaukinen (2008), the elements comprising antisocial behavior (Table 7), especially those pertaining to drug sales, may be much lower. However, in examining comparable measures used here and those used by both Apel and Kaukinen (2008) and Apel et al. (2007) both of which use the NLSY97[29], and similar age range of youths, there do not seem to be dramatic differences in levels of self-reported deviant before. For example, whereas Apel and Kaukinen (2008) find that only 4% of their sample ran away from home, the percentage is considerably higher in the current study (9%). Close to 60% in the Apel et al (2008) study and over 60% in the Apel and Kaukinen (2008) reported substance use compared to close to 50% in this dissertation. Even though this value is lower, the use of hard drugs was not included in the construction of my outcome measure which may partially explain the difference. Moreover, with respect to income obtained from illegal means, only drug sales are measured here, meaning that income from theft, income from property crime and income from other drug sales, as is obtained from the NLSY97 and used by several researchers, are not reported. Nevertheless, differences across self-report instruments should be taken into account and evaluated, as under– or over-reporting may pose a

[29]A comparison is made here between the NLSY97 and the PHDCN as both have been extensively in research on delinquency and antisocial behavior.

significant threat to inferences made regarding the predictors of antisocial behavior and delinquency.

Theoretical Implications for Criminology

The findings reported in this study not only illustrate the need to expand our theoretical horizons regarding the multilevel relationship between neighborhood, parenting and youth development, but also the relevance of the proposed framework to both theory and policy advancement in criminology. The value of the model proposed here rests not in its ability to advise any one explanation of crime. Instead, its worth lies in how the framework can inform and possibly contribute to other criminological theories.

The multicontextual approach to the study of antisocial behavior depicted in the current research is compatible with control theories. For example, within a macro-level setting, Bursik and Grasmick (1993) expanded upon social disorganization as a community's inability to impose informal social control and stated instead that community level social control comes in three forms- 1) private: family, intimate relationships; 2) parochial: neighbors, peers, friends and 3) public: school, church. The authors propose that social disorganization affects these forms of social control and therefore impacts crime within the community. The models described in this dissertation are especially relevant as they provide a foundation upon which to connect private, parochial and public controls, by incorporating family management as a possible link between the levels of control. As Sampson (1997) argues "exactly how parents perceive and manage their children's involvement in the world outside the household is a topic that has not received much research attention," and that "strategies tied to the community may be no less consequential for children's development than the more direct, proximate controls observed within the home," (p.

51). Thus, this dissertation builds upon Bursik and Grasmick's (1993) theory by encompassing the cross-level effects of neighborhood on parenting and youth conduct providing a micro-level complement to the macro-level explanation of crime.

Family management in disadvantaged neighborhoods and its importance in attenuating youth involvement in antisocial behavior are also applicable to Sampson's (1997) human embeddedness approach to delinquency and violent offending. In his review of community and urban violence, Sampson (1997) adopts a developmental-ecological (Bronfenbrenner 1979) perspective to the study of child socialization. Sampson (1997) identifies a clear gap in our understanding of neighborhood influences on parenting and family management beyond the home, but he also notes that "there is limited quantitative evidence on the contextual effects of community structure on family management and delinquency," (p. 54). In essence, Sampson (1997) outlines a framework that emphasizes informal social control, social capital, family management and violence, which he supports with a detailed summary of the related literature but without directly testing his model. The theoretical framework evaluated here supports the idea advanced by Sampson (1997), that not only do family management practices vary across neighborhoods, but that they offer a useful marriage between neighborhood conditions and youth behavior. Moreover, the model provides a foundation upon which to further expand Sampson's (1997) human embeddedness paradigm by including not only relevant neighborhood measures but also significant proximal mechanisms of antisocial behavior.

Additionally, the framework explored and tested here has applications for developmental theory. Like Elliott et al (2006) who conclude that "the effects of neighborhood on development appear to be stronger for older teens than for children" and that "contextual influences are thus not constant over the course of development," (p, 293), the findings of this dissertation also

suggest that parenting strategies, in response to neighborhood conditions of disorder, may also be age-graded. Older children tend to be subjected to less restrictive parenting which can, in turn, have negative consequences for antisocial behavior, either directly or via more proximal mechanisms like exposure to community violence or association with deviant peers. As such, theories that seek to explain crime and deviance over the life-course (for example Sampson and Laub 1993; Sampson and Laub 1997) should consider that the oft-used parenting practices of monitoring and supervision change throughout childhood and that family management outside the home is a function of both neighborhood and child characteristics and therefore likely to change as children transition from one developmental epoch to another. Therefore, when incorporating various contexts whether community, school, family/parenting in a developmentally oriented explanation of deviance, it is also important to consider the developmental evolutions of parenting as well.

The role family management practices have in curbing exposure to violence and association with deviant peers, with the final goal of reducing problem behavior, fits well with theories of victimization as it incorporates parental decision-making into a broader conception of the lifestyle paradigm. In 1978, Hindelang, Gottfredson and Garofalo (1978) proposed that individuals engaging in certain types of lifestyles were more, or less, susceptible to personal victimization, formulating a set of propositions outlining the relationship between lifestyle and personal victimization. Of particular importance, in this case, is the idea that the probability of an individual being in a public place is a function of lifestyle. But for children and youths, lifestyle is more than a personal characteristic as it also reflects to a degree, family management practices and parental decision-making. Victimization then becomes a product of inadequate family management strategies and the inability of parents to insulate their children from the

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surrounding environment. Placing the framework described here within a lifestyles paradigm brings to light the dynamic relations between parenting and youth conduct, especially the role parenting strategies like restrictiveness, in-home supervision and sex-related talks have on the daily life of children and teens with respect to exposure to violence, peer deviance and antisocial behavior.

The model is also well-suited to routine activities theories (Cohen and Felson 1979, Wilcox et al 2003). In its earlier conception, routine activities was based on the idea that crime is the product of the convergence in time and space of motivated offenders, suitable targets and lack of capable guardianship. With respect to the framework described, parents are brokers between their children and the community in which they reside. They are, in effect, the guardians capable of instilling protective measures, minimizing children's interaction with noxious neighborhoods conditions. The findings in this dissertation highlight a growing need to more closely examine how parenting can, in the face of neighborhood harms, create a protective barrier which may cushion children and youths from the dangers the surrounding environments can bestow and within the routine activities perspective, limit exposure to the motivated offenders. The framework adds to the routine activities theory by delineating relationships between suitable targets and capable guardianship with parenting as an addition of the guardianship role often attributed to the individual or household (Rountree, Land, and Miethe 1994; Wilcox, Land, and Hunt 2003). Moreover, with the incorporation of exposure to violence and peer deviance, a theoretical bridge is formed between the target and the offender (Smith, Glave Frazee, and Davison 2000). The theoretical models analyzed here complement these theories, because they posit the mechanisms explaining the presence in social settings of both victims and offenders via family management practices and neighborhood disorder.

Finally, the disorder-family management-antisocial behavior model presented here can be incorporated into collective efficacy theory. Developed by Sampson, Raudenbush and Earls (1997) the theory expands upon the informal social control formulations of social disorganization theory (Kornhauser 1978; Sampson and Grooves 1989; Sampson and Wilson 1995) and shifts focus away from neighborhood ties. Instead collective efficacy, "the linkage of mutual trust [amongst neighbors] and willingness to intervene for the common good," (Sampson et al 1997: 919) is seen as a more useful concept in explaining the relationship between neighborhood structural characteristics and neighborhood problems such as crime. Research evaluating the macro-level role of collective efficacy in neighborhood dynamics has been generally supportive (Sampson and Raudenbush 1999; Sampson, Raudenbush, and Earls 1997b), and Pratt and Cullen (2005) find, in their evaluation of several prominent criminological theories, that collective efficacy is one of the strongest predictors of crime.

At the individual level, collective efficacy has been successfully linked to unstructured socializing (Maimon and Browning 2010), adolescent sexual initiation (Browning, Leventhal, and Brooks-Gunn 2005) and delinquency (Simons et al. 2005), but although some studies clearly highlight the benefits of living in a community with increased collective efficacy (Browning 2002; Kirk 2009; Simons et al. 2005), others have found few or none of its effects on individual outcomes (Kirk 2008; Kirk 2009; Maimon and Browning 2012; Sampson, Morenoff, and Raudenbush 2005). In view of the mixed findings at the individual-level, it is at the micro-level that the current framework may prove more useful. As a blatant indicator of rough neighborhood circumstances, disorder is a valuable concept in understanding how community attributes can affect the behavior of families and children and build upon the individual-level influences collective efficacy and disorder convey to residents. Family management practices provide a

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platform upon which disorder as the visible manifestation of weakened collective efficacy[30] and youth behavior connect, thus establishing a much more palpable neighborhood construct than collective efficacy to which residents obviously respond.

Policy Implications

In addition to the theoretical relevance of this research piece, there are also policy implications worth addressing. The relatively recent increase in the neighborhood studies focusing on child development has, as previously mentioned, emerged mostly from studies of disadvantaged communities and how children fare in these conditions. Within a policy paradigm, gains in knowledge concerning community influences on parenting, in addition to the mediating effects of exposure to violence and association with deviant peers can help further develop community, family and youth-based interventions, designed to foster positive development. Community programs targeting youth should, as Eccles and Gootman (2002) also propose, strive to address the needs of youths from diverse settings and from a multi-faceted perspective. Programs and youth organizations should attempt to create a sanctuary from community violence and peer deviance, a place where youths can spend time away from home without being exposed to the dangers some neighborhoods may exact. Moreover, in view of the interaction between disorder and exposure to violence, careful attention should be paid to youths who are at a greater risk for violence. One way would be to increase the availability of youth organizations in the neighborhood. As Gardner and Brooks-Gunn (2009) suggest, increasing organizations in the community like boys and girls clubs, YMCA and organized sports acts as a protective factor against youth exposure to violence in the community. The availability of these

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[30] In fact, Sampson and Raudenbush (1999) found that disorder is predicted by lowered collective efficacy. The authors conclude that crime and, more importantly, disorder are "explained by the same constructs at the neighborhood level, in particular concentrated disadvantage and decreased collective efficacy," (pg. 637).

institutions not only provides children with places to be after school but also, according to the authors, serve as cues to residents that investments in youth wellness are being made, thus bolstering the potential for community control and reduction of youth risk factors at the neighborhood level.

Just as good parenting is crucial for children in bad neighborhoods, bad parenting matters for children in good neighborhoods. If, as the results indicate, that parents do adopt their management strategies in response to neighborhood circumstances, it is clear that family management practices are critical to successful youth development. How parents choose to manage the time children spend away from the home can reduce youth involvement in antisocial behavior, either directly or through minimizing exposure to both violence and deviant peers. Therefore, family- and parent-based interventions should stress such practices in promoting child and youth positive rearing regardless of where they live. A majority of parenting programs focus on general strategies without examining what is done beyond the home, but those that have focused on parenting beyond household walls have had notable success, like the Triple P positive parenting (Bodenmann, Cina, Ledermann, and Sanders 2008; Sanders 2003; Sanders 2008). This parent-based intervention is designed to both treat and prevent problem behaviors in children well into adolescence. The program is tiered offering five levels of treatment, tailored to the specific needs of children. Parenting skills, confidence and competency are developed with each successive level increasing in intensity (see Sanders 2003). A recent meta-analysis by De Graaf, Speetjens, Smit, De Wolff, and Tavecchio (2008) demonstrated the utility of the program in attenuating problem behavior. Moreover, what makes the current framework especially relevant to Triple P, is the role parenting outside the home plays in reducing antisocial behavior. Group Triple P (De Graaf et al. 2008) is aimed at low income families and seeks to promote effective

parenting in both the home and community. The family management practices described here

help identify which parenting strategies are most useful, especially in neighborhoods where good

parenting is critical to successful youth outcome, thus providing useful information in the

development of interventions like these.

Fostering good parenting is a promising start, but should be placed within a broader context

of intervention. By far, the best approach to improving the quality of life and promoting positive

child and youth development is multicontextual. Multisystemic therapy (Henggeler et al 1992),

although targeting youths who have developed conduct problems, including aggressive

delinquency, seeks to improve youth development by changing how they behave in social

settings including the home, school and neighborhood. MST is a family and youth based

program that extends its treatment into several ecological contexts with generally favorable

outcomes (Schaeffer and Borduin 2005) by teaching parents how to successfully manage their

children's lives through curfews, rule enforcement and the promotion of healthy friendships.

The multicontextual model proposed here complements programs like MST, not only by

focusing on a broader conception of antisocial behavior but by extending the concepts of family

management and identifying useful parental strategies in reducing youth exposure to violence,

association with deviant peers and youth problem behavior. The incorporation of neighborhood

effects serves to integrate community, family and youth elements, which can in both the short

and long term foster beneficial outcomes for youth.

Directions for Future Research

There are many possible avenues of research that stem from this dissertation findings.

Within a developmental perspective, an important step would be to further examine the age-

graded nature of both neighborhood effects and family management practices. Parenting decisions change, as they should, as children get older, gain autonomy and expand their horizons beyond home and school. Research focused on this particular subject would provide rich information that would enhance developmental criminology from both a theoretical and policy perspective. Understanding how parenting evolves throughout the life-course of both parents and children can serve to broaden our understanding of how family management practices can differentially affect the development of antisocial behavior and possibly further contribute to what we know about parents and child development. From a policy perspective, we must consider that parenting changes over time, so should parent training. In essence, "the changing developmental needs of children mean that parenting programs need to be continuously accessible throughout a parent's parenting career," (Sanders 2008: 515).

While it was useful in the context of the present piece to examine family management practices individually, expanding the conception of management practices to management styles in a fashion similar to the typologies proposed by Baumrind (1971) may prove fruitful, especially with regard to the study of parenting in disadvantaged neighborhoods. There is, certainly, a danger of reducing the independent importance of each strategy, but a typological approach would enable researchers to identify family management styles that best serve youths in different types of neighborhoods. As such, it would also be necessary to incorporate more comprehensive measures of family management, especially those instilled outside the household. Studies should be specifically aimed at management outside the home, and therefore constructing measures that are truly aimed at examining what parents do beyond household walls, especially as children move into adolescence.

The framework proposed by this dissertation utilized a very broad and encompassing measure of antisocial behavior. It is possible that community, family influences and the proximal mechanisms investigated may function differently if violent delinquency or only aggressive behavior were examined. To what extent family management affects violent as opposed to general antisocial behavior is of interest to the research community. Moreover, it is possible that different parenting processes are particularly relevant to different forms of youth problem behavior. As much of the research on exposure to violence suggests violence begets violence (Gibson et al 2009; Chauhan and Repucci 2009; Molnar et al 2004). Future research should focus on deconstructing antisocial behavior and specifically examine different types and severity of youth delinquency and antisocial behavior within the tiered framework proposed here. Examining how the proposed framework may help explain youth behavior is of much interest as it contributes to a broader literature on neighborhood effects and violence whilst adding to what we already know about the effects of parenting.

There is so much happening at the neighborhood level, Neighborhood characteristics are so highly related that by singling out conditions like collective efficacy or trying to detangle what came first- disorder or collective efficacy; we may have missed valuable neighborhood interactions and mechanisms. Tremendous research has been devoted to highlighting the advantages of characteristics like collective efficacy, or validating the importance of disorder, that very little research has questioned whether combinations of disorder and collective efficacy in addition to structural characteristics may be the key to understanding individual behavior as a function of neighborhood. It is time that researchers step away from trying to pit neighborhood conditions against each other in an effort to demonstrate which is better at predicting crime and delinquency and instead focus our ideas on clarifying what it is about these neighborhood

conditions that influence residents. We should be aiming our research at uncovering the

significance of living in different types of communities, perhaps even examining combinations

between disorder, collective efficacy and structural characteristics, and determine for example

how parenting may significantly vary between communities with low disorder-high collective

efficacy, as opposed to high disorder-low collective efficacy. It is in the interaction of disorder

and collective efficacy that the next step in research on neighborhood, family management and

youth behavior should lay.

APPENDIX A- Operationalization of Variables

Variable	Item/Question	Response Categories

Outcome Variable
  Antisocial Behavior

1) Run away from home overnight   1= Yes, 0=No
2) Absent from school, no excuse
3) Stole from store
4) Stolen from household member
5) Stolen from a car
6) Bought/sold stole goods
7) Carried hidden weapon
8) Caused trouble in public
9) Set fires
10) Snatched purse
11) Hit someone not live with
12) Attack with weapon
13) Thrown objects at people
14) Been in gang fight
15) Broke into building to steal
16) Sold marijuana
17) Sold cocaine/crack
18) Damaged property
19) Threaten to hurt
20) Shot at someone
21) Smoked cigarettes
22) Drank alcohol
23) Used marijuana
24) Got into Fights
25) Chased someone to scare

Variable	Item/Question	Response Categories

Family Management Variables

  Developmental Stimulation

1) record/cd/tape player and   1= Yes, 0=No
2) 5+ items real musical instrument
3) 2+ board games
4) 10+ age appropriate books
5) to desk or other suitable place for studying
6) dictionary
7) library card
8) Encouraged to read on own
9) 3+ books of own
10) Develop hobbies
11) Achieve advanced motor skills

  Harsh Disciplining

*CTS at Wave 1 and 3- "In the past year when there was a problem with ****…how many times did you…"*

The response categories were: 0= never, 1= once, 2= 2 times, 3= 3-5 times, 4= 6-10 times, 5= 11-20 times and 6= more than 20 times

1) insult or swear at ****?
2) sulk and/or refuse to talk about an issue?
3) stomp out of the room or house or yard?
4) say or done something to spite ****?
5) threaten to hit or throw something at ****?
6) thrown, smash, hit or kick something?
7) thrown something at ****?
8) slap or spank **** with an open palm?
9) push, grab or shove ****?
10) kick, bite or hit **** with a fist?
11) hit or try to hit **** with something?
12) beat **** up?

In-home Supervision

1) PC has rules about homework and checks   1= Yes, 0=No
2) PC assisted subject with homework
3) PC talks daily with subject about day
4) PC visited schl/talked to teach,pst 3 mo
5) PC discussed TV programs w/SUB,pst 2 wk
6) PC discussed curr events w/SUB,pst 2 wk
7) family has regular schedule for subject
8) PC sets and enforces limits for subject
9) PC is consistent w/family rules
10) SUB must sleep at home on school nights
11) SUB must check in with PC if PC away
12) SUB is at supervised place after school
13) PC has rules for SUBs behavior w/peers
14) PC has contact w/2 SUB friends,pst wk
15) PC denies SUB access to alcohol in home
16) PC knows signs of drug usage

Variable	Item/Question	Response Categories

Alcohol
Wave 2- Primary Caregiver was asked "*In the past year have you discussed the hazards of alcohol or drug use with ***?"*   1= Yes, 0=No

Health
Wave 2 Home Survey- Primary Caregiver was asked "*In the past year, how often have you discussed ***'s personal appearance or issues of personal health with him/her?"*   Recoded so that 0= Never, 1= Once a year, 2= Two or three times a year, 3= More than three times a year

Sex
Wave 2 Home Survey- Primary Caregiver was asked "*In the past year, how often have you discussed issues related to sex with ***?"*

Youth Activity Involvement
Questions were preceded by "*In the last 12 months, <u>at school</u> have you been involved in…*"   Recoded so that 1= Yes and 0= No
   1) Orchestra
   2) School Sports
   3) Cheerleading
   4) Student Government
   5) Church Group
   6) Community Activities
   7) Volunteer Work

Family Activity Involvement
The questions were preceded by the stem "*In the past month **OR** in the past year how often have you or someone else in the family…*"   Recoded so that 1= Yes and 0 No
   1) Taken **** places?
   2) Done some outdoor activity with ****?
   3) Gone to a place like a museum or zoo with ****?
   4) Taken a trip on a plane, bus or train not including trips on a subway with ****?
   5) Taken a trip more than 50 miles from home with ****?

Restrictiveness
Wave 2 Home Survey- Primary Caregiver was asked "Is *** allowed to be in public places without adult supervision?"   1= Yes, 0=No

Knows Child's Peers
Wave 2 Home Survey- Primary Caregiver was asked "How many of *** Is close friends do you know by sight OR by first and last name? Do you know:..."   Recoded so that 1= Yes and 0 No

Variable	Item/Question	Response Categories

Proximal Mechanisms of Antisocial Behavior

Exposure to Violence in the Neighborhood
Regarding the past year-   1= Yes, 0=No

    1) saw someone or youth was chased in neighborhood/other neighborhood?
    2) saw someone or youth was hit in neighborhood/other neighborhood?
    3) saw someone attacked or youth was attacked in neighborhood/other neighborhood?
    4) saw someone shot or was shot in neighborhood/other neighborhood?
    5) saw someone shot at or youth was shot at in neighbored/other neighborhood?
    6) saw someone killed in neighborhood/other neighborhood?
    7) Youth was sexually assaulted in neighborhood/other neighborhood?
    8) saw threat/hurt or youth was threatened/hurt in neighborhood /other neighborhood?

Exposure to Violence in the Home
    1) saw someone or youth was chased in home?   1= Yes, 0=No
    2) saw someone or youth was hit in home?
    3) saw someone attacked or youth was attacked in home?
    4) saw someone shot or was shot in home?
    5) saw someone shot at or youth was shot at in home?
    6) saw someone killed in home?
    7) Youth was sexually assaulted in home?
    8) saw threat/hurt or youth was threatened/hurt in home?

Peer Deviance
Questions were preceded by the stem "*During the past year, how many of the people who you spend time with...*"

Item responses: 1= None of them, 2= Some of them and 3 = All of them recoded so that 0= None of them, 1= Some of them and 2= All of them

    1) # gotten in trouble in school
    2) # purposefully damaged property
    3) # stolen something worth >$5,<=$500
    4) # attacked someone with a weapon
    5) # used marijuana or pot
    6) # used any form of alcohol
    7) # used tobacco
    8) # had sexual intercourse

Variable	Item/Question	Response Categories

Control Variables

Gender

              1) Male   Recoded 1= Male, 0=

              2) Female   Female

Race/Ethnicity

              1) Hispanic   Hispanic:

              2) Black   1- Hispanic, 0= Non-

              3) White   Hispanic

              4) Other   Black:

                                                       1= Black, 0= Non-Black

                                                      White:

                                                      1= White, 0= Non-white

Cohort

              Cohort membership   1= Cohort 12, 0= Cohort 9

Family SES

Standardized principle component of parents' maximum
education, household income and parents' socioeconomic index

Parental Warmth

                1) PC talks w/subject twice in visit
                2) PC answers 1 of subject's quest verbally
                3) PC encourages subject to contribute
                4) PC caresses/kisses/hugs subject once
                5) PC positive response to praise of SUB
                6) PC praises subject twice
                  7) PC mentions particular skill of subject
                8) PC uses diminutive for subject's name
                9) PC's voice conveys positive feelings
               10) PC does not shout at SUB during visit
               11) PC does not express annoyance w/SUB
               12) PC does not slap/spank subject
               13) PC does not scold/criticize SUB

Variable	Item/Question	Response Categories

Neighborhood-level Variables

Neighborhood Disorder

Each question was preceded by "*how much of a problem is…*"

    1) litter, broken glass or trash on the sidewalks and streets
    2) graffiti on buildings and walls
    3) [are] vacant or deserted houses or storefronts
    4) people selling or using drugs
    5) drinking in public
    6) groups of teenagers hanging our in the neighborhood and causing trouble
    7) different social groups who do not get along with each other

Responses were recoded so that:
a- a big problem=2
b- somewhat of a problem=1
c- not a problem=0

Collective Efficacy

Informal Social Control

Likert-type scale ("Would you say it is very likely, likely, neither likely nor unlikely, unlikely, or very unlikely that your neighbors could be counted on to take actions if:")

    1) children were skipping school and hanging out on a street corner,
    2) children were spray painting graffiti on a local building,
    3) children were showing disrespect to an adult,
    4) a fight broke out in front of their house,
    5) the fire station closest to home was threatened with budget cuts.

Reverse coded

Social cohesion/trust

Respondents were asked how strongly they agreed (on a 5-point scale) that:

    1) People around here are willing to help their neighbors,
    2) This is a close-knit neighborhood,
    3) People in this neighborhood can be trusted,
    4) People in this neighborhood generally don't get along with each other
    5) People in this neighborhood do not share the same values

Neighborhood Structural Variables

Concentrated Poverty	Immigrant Concentration	Residential Stability
Below poverty line	Latino	Same house as in 1985
On public assistance	Foreign-Born	Owner-occupied house
Female-headed households		
Unemployed		
Less than age 18		
Black		

APPENDIX B- Recoding Disorder

I created a categorical variable where the NCs were classified as low, medium, and high disorder, by examining the distribution of the disorder variable(Figure 2) for clear breaks that would indicate specific groups of disorder and by calculating the value of disorder for each tertile (Burdette and Hill 2008). Using this information neighborhoods with a mean disorder of over 2 were classified as "high", between 1.60 and 2.00 as "medium" and below 1.60 as low, resulting in close to 40% of the neighborhoods categorized as "high disorder" (Table 30).
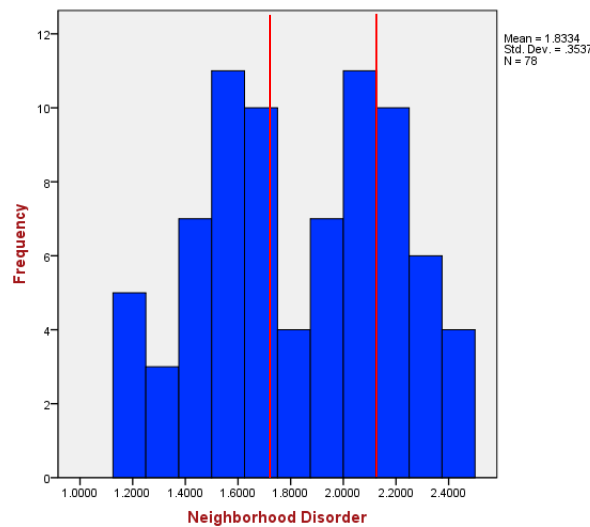
Figure 12: Frequency Distribution of Neighborhood Disorder

TABLE 30: Distribution of Disorder Ordinal Variable

	f	%	Cumulative %
Low	23	29.49	29.49
Medium	24	30.77	60.26
High	31	39.74	100.00

APPENDIX C- Correlation Matrix of Neighborhood-Level Variables

	Disorder	Concentrated Disadvantage	Immigrant Concentration	Residential Stability	Collective Efficacy
Disorder	1.000				
Concentrated Disadvantage	0.747	1.000			
Immigrant Concentration	0.354	0.031	1.000		
Residential Stability	-0.325	-0.001	-0.181	1.000	
Collective Efficacy	-0.736	-0.299	-0.500	0.555	1.000

APPENDIX D- Correlation Matrix of Individual-Level Variables

Family Management Variables

	Developmental Stimulation	Discipline	Supervision	Alcohol	Sex	Health	Youth Activity Involvement	Family Activity Involvement	Restrictiveness	Peer Familiarity
Developmental Stimulation	1.00									
Discipline	-0.022	1.00								
Supervision	0.391	-0.048	1.00							
Alcohol	0.067	0.027	0.178	1.00						
Sex	0.194	0.013	0.199	0.238	1.00					
Health	0.134	0.015	0.141	0.080	0.168	1.00				
Youth Activity Involvement	0.146	0.045	0.151	0.002	0.092	-0.008	1.00			
Family Activity Involvement	0.299	-0.033	0.254	0.047	0.194	0.128	0.087	1.00		
Restrictiveness	-0.096	-0.062	-0.004	0.024	-0.135	0.055	-.065	-0.066	1.00	
Peer Familiarity	0.210	-0.033	0.186	0.121	0.143	0.063	0.105	0.223	-0.105	1.00

Family Management and Proximal Mechanisms of Antisocial Behavior

	Exposure to Violence in the Neighborhood	Deviance of Peers
Exposure to Violence in the Neighborhood	1.00	
Deviance of Peers	0.182	1.00
Developmental Stimulation	-0.017	-0.048
Discipline	0.068	0.077
Supervision	-0.049	-0.043
Alcohol	0.038	0.017
Sex	0.129	0.017
Health	-0.053	-0.004
Youth Activity Involvement	0.099	0.063
Family Activity Involvement	-0.022	-0.010
Restrictiveness	-0.175	-0.113
Peer Familiarity	-0.005	-0.042

APPENDIX E- Alternative Models

Disorder only Parallel vs. non-parallel model

Model 8a

	Disorder Only Parallel Model		*Dissertation Model*	
	b	*S.E.*	*b*	*S.E.*
Intercept	0.902^{***}	0.040	0.901^{***}	0.040
Disorder	-0.127	0.153	-0.099	0.108
Aggregate Supervision	-0.097	0.067	-0.100	0.065
Aggregate ETV				
Collective Efficacy	-0.040	0.202		
Discipline	0.012^{*}	0.005	0.011^{*}	0.005
Supervision	-0.048^{*}	0.020	-0.053^{**}	0.019
Disorder	-0.071	0.058		
Residential Stability			0.040^{+}	0.022
Health	0.032	0.044	0.036	0.044
Sex	0.090^{***}	0.024	0.093^{***}	0.024
Restrictiveness	-0.343^{***}	0.060	-0.339^{***}	0.060
Knows Peers	-0.114^{+}	0.064	-0.111^{+}	0.065
Random Effect				
Variance	0.043^{**}		0.041^{**}	
χ^2	109.611		109.433	

	**Disorder Only Parallel Model**		_**Dissertation Model**_	
	_**b**_	_**S.E.**_	_**b**_	_**S.E.**_
Intercept	0.882***	0.039	0.880***	0.039
Disorder	-0.315*	0.150	-0.303**	0.105
Aggregate Supervision	-0.062	0.064	-0.052	0.060
Aggregate ETV	0.279***	0.054	0.286***	0.056
Collective Efficacy	-0.042	0.212		
Discipline	0.009+	0.006	0.008	0.006
Supervision	-0.033		-0.034+	0.020
Disorder	-0.072			
Residential Stability			0.047*	0.022
Health	0.070+	0.042	0.068	0.043
Sex	0.048*	0.025	0.050*	0.025
Restrictiveness	-0.197**	0.064	-0.192**	0.063
Knows Peers	-0.076	0.063	-0.079	0.063
Exposure to Violence	0.139***-	0.021	0.136***	0.019
Disorder	0.016	0.064		
Immigrant Concentration			0.033+	0.017
Deviance of Peers	0.072***	0.016	0.076***	0.015
**Random Effect**				
Variance	0.033*		0.032*	
χ^2	98.327		99.509	

	Disorder Only Parallel Model		*Dissertation Model*	
	b	*S.E.*	*b*	*S.E.*
Intercept (β_0)	0.864***	0.040	0.862***	0.040
Disorder	-0.273+	0.161	-0.284*	0.119
Aggregate Supervision	-0.052	0.064	-0.045	0.060
Aggregate ETV	0.246***	0.060	0.251***	0.061
Collective Efficacy	-0.006	0.205		
Discipline	0.010	0.006	0.008	0.006
Supervision	-0.030	0.022	-0.031	0.021
Disorder	-0.059	0.068		
Residential Stability			0.048*	0.023
Health	0.071	0.045	0.067	0.045
Sex	0.058*	0.026	0.062*	0.026
Restrictiveness	-0.141*	0.075	-0.137*	0.069
Knows Peers	-0.075	0.066	-0.074	0.065
Exposure to Violence	0.093***	0.025	0.090***	0.024
Disorder	-0.013	0.066		
Immigrant Concentration			0.032+	0.018
Deviance of Peers	0.068***	0.016	0.072***	0.016
Cohort 12	0.052***	0.108	0.279***	0.084
Warmth	0.025	0.090	-0.021	0.015
Gender	0.285***	0.084	0.240***	0.070
Hispanic	-0.020	0.015	0.047	0.107
Black	0.239	0.071	0.031	0.090
SES	0.010	0.045	0.009	0.045
Random Effect				
Variance	0.035*		0.034*	
χ^2	100.200		101.195	

Reduced Parallel versus non-Parallel Models

	Parallel Model		*Dissertation Model*	
	b	*S.E.*	*b*	*S.E.*
Intercept	0.893***	0.040	0.901***	0.040
Disorder	-0.013	0.119	-0.099	0.108
Aggregate Supervision	-0.141*	0.063	-0.100	0.065
Residential Stability	0.043	0.044		
Immigrant Concent.	-0.056	0.041		
Aggregate ETV				
Discipline	0.010*	0.005	0.011*	0.005
Supervision	-0.071***	0.021	-0.053**	0.019
Disorder	-0.063	0.067		
Residential Stability	0.050*	0.028	0.040+	0.022
Immigrant Concent.	0.045	0.021		
Health	0.027	0.046	0.036	0.044
Sex	0.093***	0.025	0.093***	0.024
Restrictiveness	-0.335***	0.060	-0.339***	0.060
Knows Peers	-0.116+	0.066	-0.111+	0.065
Random Effect				
Variance	0.039**		0.041**	
χ^2	104.229		109.433	

	Parallel Model		Dissertation Model	
	b	*S.E.*	*b*	*S.E.*
Intercept $_{(\beta_0)}$	0.877***	0.040	0.880***	0.039
Disorder	-0.305*	0.135	-0.303**	0.105
Aggregate Supervision	-0.045	0.062	-0.052	0.060
Residential Stability	0.001	0.042		
Immigrant Concent.	0.010	0.044		
Aggregate ETV	0.290***	0.063	0.286***	0.056
Discipline	0.008	0.006	0.008	0.006
Supervision	-0.046+	0.023	-0.034+	0.020
Disorder	-0.047	0.082		
Residential Stability	0.052+	0.030	0.047*	0.022
Immigrant Concent.	0.032	0.023		
Health	0.062	0.044	0.068	0.043
Sex	0.052*	0.030	0.050*	0.025
Restrictiveness	-0.199***	0.062	-0.192**	0.063
Knows Peers	-0.080	0.063	-0.079	0.063
Exposure to Violence	0.143***	0.025	0.136***	0.019
Disorder	-0.045	0.088		
Residential Stability	-0.013	0.035		
Immigrant Concent.	0.031+	0.019	0.033+	0.017
Deviance of Peers	0.075***	0.015	0.076***	0.015
Random Effect				
Variance	0.034*		0.032*	
χ^2	98.192		99.509	

	Parallel Model		Dissertation Model	
	b	*S.E.*	*b*	*S.E.*
Intercept (β_0)	0.859***	0.042	0.862***	0.040
Disorder	-0.250+	0.136	-0.284*	0.119
Aggregate Supervision	-0.052	0.062	-0.045	0.060
Residential Stability	0.013	0.041		
Immigrant Concent.	-0.003	0.044		
Aggregate ETV	0.241***	0.062	0.251***	0.061
Discipline	0.009	0.006	0.008	0.006
Supervision	-0.047*	0.023	-0.031	0.021
Disorder	-0.038	0.083		
Residential Stability	0.057+	0.030	0.048*	0.023
Immigrant Concent.	0.040	0.025		
Health	0.059	0.044	0.067	0.045
Sex	0.064*	0.027	0.062*	0.026
Restrictiveness	-0.139*	0.067	-0.137*	0.069
Knows Peers	-0.080	0.063	-0.074	0.065
Exposure to Violence	0.093**	0.031	0.090***	0.024
Disorder	-0.038	0.089		
Residential Stability	-0.008	0.037		
Immigrant Concent.	0.033+	0.019	0.032+	0.018
Deviance of Peers	0.069***	0.016	0.072***	0.016
Cohort 12	0.283***	0.083	0.279***	0.084
Warmth	-0.020	0.014	-0.021	0.015
Gender	0.239***	0.071	0.240***	0.070
Hispanic			0.047	0.107
Black			0.031	0.090
SES			0.009	0.045
Random Effect				
Variance	0.035*		0.033*	
χ^2	100.025		101.067	

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