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ABSTRACT

Few studies of contextual effects have attempted to model the effects of neighborhoods and schools at the same time, or to explore the differential impact of these contexts on behavior. In response, this dissertation examines the relative and joint impacts of neighborhood and school social environments on youth behavior by modeling the effects of each on the likelihood of delinquency, school dropout, and arrest. Particular attention is devoted to understanding how the embeddedness of schools within neighborhood communities and the integration between schools and other neighborhood institutions influences social control and, ultimately, youth behavior. The central goal of the study is to understand not only *if* neighborhoods and schools matter, but also *how* and *why* they matter. That is, focus in the study is put upon understanding how and why social ties within neighborhoods, within schools, and between neighborhoods and schools influence processes of social control.

One central challenge to the study of multiple social contexts is the ability to gather information on the structural features and social processes that characterize each context. This dissertation utilizes six data sources in order to examine the neighborhood and school effects on youth. Data from the Project on Human Development in Chicago Neighborhoods and the U.S. Census provide information on neighborhood context. Data from the Consortium on Chicago School Research describes the social context of the Chicago Public Schools. These contextual data are combined with individual-level data from the Project on Human Development in Chicago Neighborhoods, the Chicago Public Schools, and a merged set from the Illinois State Police and Chicago Police Department.

CHAPTER 1

INTRODUCTION

> All men…from the most savage to the most highly civilized, act as they do act, first, because of variations in the circumstances of their environment, both physical and social.
>
> Albion W. Small (1905, p. 205)

1.1 OVERVIEW

Small's compelling statement calls to mind two questions central to sociological discourse: is it, in fact, true that the behavior of man is a function primarily of his physical and social environment? If so, then what specific features of the environment serve to influence this behavior? These two questions are grounded in the problem of social control --- how and why do individuals come to engage in a collective existence, into what we may call society? The central objective of this dissertation is to examine the influence of two particular environments, neighborhoods and schools, each of which are physical sites for the realization of social control. These physical sites are important insofar as they bear upon the social relations necessary to bring about social control.

Before beginning a dissertation on the problem of social control, it is important to ask, social control of what? For the purposes of the present study, the answer is youth behavior. While the study of environmental influences on youth behavior --- referred to hereafter as the influences of social context --- has long been of interest across the social sciences, much of the current popularity of the contextual effects approach derives from the influential work of the late developmental psychologist Urie Bronfenbrenner.

Bronfenbrenner contends that human development and behavior should be studied through a multicontextual approach, recognizing that individuals participate in multiple social contexts at the same time, and enter and exit different contexts throughout their life (1979; 1989).

In order to detect the influences of multiple social contexts on development and behavior, a theoretical model is needed that permits each context to be observed at the same time (Bronfenbrenner 1979). It is also important to comprehend the *interrelation* between the various contextual influences on development and behavior. Bronfenbrenner observes that the ecological environment can be understood as a set of nested structures. He outlines his multi-contextual approach by describing a nested taxonomy of systems, all of which influence development and are influenced by development (Bronfenbrenner 1979). Briefly, microsystems refer to the pattern of activities, roles, and interpersonal relations experienced by a developing person in a given social setting (e.g. home, school, neighborhood). Mesosystems provide the link between the various social settings in which individuals participate (e.g. relations between home and school, or between school and neighborhood). Exosystems are the settings in which individuals do not directly participate, but which still influence the development of the focal individual (e.g. children are influenced by what happens to their parents at work). Finally, macrosystems consist of the overarching ideology, culture, and beliefs that surround the three nested systems.

An abundance of research has begun to advance Bronfenbrenner's overarching framework. As one example from sociology, in *The Truly Disadvantaged*, Wilson (1987) examines a number of factors leading to the substantial growth of an urban underclass

during the 1980s and the conditions of concentrated poverty and social isolation which characterizes the physical and social environment of this class of individuals. In his thesis, which has spawned numerous research efforts attempting to specify *how* and *why* neighborhood conditions might affect individuals, Wilson argues that the primary determinant of the rise of the underclass has been the restructuring of the U.S. economy from a goods-producing to a service-producing system. In essence, rapid changes to U.S. cities in the 1980s, such as deindustrialization and the decline of manufacturing, suburbanization and the flight of middle class blacks, and the rise of the service sector, all influenced the creation of an urban underclass characterized by extreme poverty and social isolation. These changes essentially cut off underclass individuals from mainstream society.

As another example, Bryk, Lee, and Holland (1993) examine how multiplex ties among students, teachers, and school administrators in Catholic schools cultivate communal social organization within schools. This sense of community among school actors ultimately fosters a greater commitment to school on the part of students, teachers, and administrators, and leads to greater effectiveness of schools.

Despite a proliferation of contextual effects research that either implicitly or explicitly follows Bronfenbrenner's (1979; 1989) framework, most contextual effects research has been limited to an assessment of the microsystem influence on individual outcomes. Occasionally research does address the so-called mesosystem level (i.e. the link between social settings); for example, a host of recent studies have assessed how family and neighborhood environments interact to influence child outcomes (e.g. Burton

and Jarrett 2000; Duncan, Connell, and Klebanov 1997). Still, the core argument of this dissertation study is that there has been a limited amount of research pitched at the mesosystem level, particularly when it comes to the interrelations between the contexts that influence youth (e.g. families, schools, neighborhoods, and the criminal justice system). As noted, the two settings of primary focus in the present study are neighborhoods and schools. Relatively little research has empirically examined the neighborhood-school nexus and repercussions for youth outcomes. Exceptions include work by Hellman and Beaton (1986), Garner and Raudenbush (1991), Teitler and Weiss (2000), and Welsh, Greene, and Jenkins (1999), though even these studies are limited to an assessment of the relative influence of neighborhoods and schools, to the neglect of joint influence.

Given these limitations of prior research, the main objective of this dissertation study is to integrate the neighborhood effects and school effects approaches to the study of youth behavior. I seek to determine if it is fruitful and even necessary to examine the effects of neighborhoods and schools on youth outcomes at the same time. A counter argument might be that schools largely imitate the normative environment of the neighborhood in which they are located, and therefore offer little independent normative influence of youth. However, the underlying argument presented in this study is that neighborhoods and schools have both independent and joint influences on youth behavior. Details of this argument will be presented in Chapter 2, and empirically examined thereafter.

As noted, this study focuses on the effects of social control on youth behavior, and youth delinquency in particular. Specifically under the realm of delinquency, I explore the influence of social context on school dropout and arrest. School dropout is a serious social problem with implications not only on crime and delinquency, but also on a host of other life-course outcomes like employment, future earnings, and marital status. Similarly, arrest and official contact with the criminal justice system are major barriers to a pro-social, productive life, and are highly predictive of future arrest and incarceration. It is important to understand that dropout and arrest are not isolated outcomes. Rather they are the culmination of a cumulative series of events over the life-course. For example, dropout is often the final outcome of a student's long-standing disengagement with the education system. Thus, it is critical to examine these outcomes from a life-course perspective. It is also important to understand how these two outcomes are developmentally related. Most often researchers have looked at whether dropout subsequently increases crime and delinquency. Far less studied is whether arrest causally influences dropout.

Four main research questions guide this investigation of the contextual influences on youth behavior:

1. Do neighborhood and school contexts influence the likelihood of delinquent behavior after controlling for the individual characteristics of the youth in respective neighborhoods and schools? If so, what role does neighborhood-level social control and school-level social control play in explaining these outcomes?
2. If neighborhood and school effects do exist, what is the relative impact of each on youth behavior?

3. What are the joint impacts of neighborhood and school contexts on youth behavior?
4. How are dropout and arrest related? More specifically, does arrest influence the likelihood of dropout, and does dropout influence the likelihood of arrest, net of individual, family, neighborhood, and school influences?

It may be clear from these questions that there are two separate, yet related, goals of this study. Practically speaking, the primary goal is to understand the independent variables --- the neighborhood and school effects. As part of this goal, I seek to define a conceptual framework for understanding how multiple contexts operate separately and jointly to impact social life. With this first goal, the dependent variables are consequential only insofar as they allow me to investigate potential influences of neighborhoods and schools. In other words, it is not adequate to talk about social control, defined as the collective pursuit of goals (Janowitz 1975), without defining which specific goals are being examined. In this case, the goals are the control of, or minimization of, youth delinquency. The secondary goal of the dissertation is to understand the dependent variables. If school dropout and arrest are in fact influenced by social context, then so what? The answer lies in understanding that these two events not only have bearing on an individual's immediate existence, but also his or her future life-course. Shifting the focus to the dependent variables allows us to understand the repercussions of these contextually influenced outcomes, and also the indirect, long-term impact of neighborhood and school effects.

1.2 ORGANIZATION OF THE STUDY

This study is divided into a total of 10 chapters. The second chapter provides the theoretical and conceptual foundation for the empirical study to follow. In this chapter, I provide an overview of neighborhood and school effects research, as well as provide justification for combining neighborhoods and schools into a single analytic framework. I couple this discussion with an examination of the concept of social control, which is the primary mechanism I employ to explain the influence of neighborhoods and schools on youth behavior. Following the discussion of social control, I describe the conceptual model guiding this dissertation study.

One central challenge of a study of multiple social contexts is the ability to gather information on the structural features and social processes that characterize each context. Described in Chapter 3 are the six data sources utilized in the study. Data from the Project on Human Development in Chicago Neighborhoods (PHDCN) and the 1990 U.S. Census provide information on neighborhood context. Data from the Consortium on Chicago School Research describes the social context of the Chicago Public Schools. These contextual data are combined with individual-level data of Chicago youth from PHDCN, the Chicago Public Schools, and a merged set from the Illinois State Police and Chicago Police Department. From the individual-level data repositories, I have multiple indicators of both school dropout and arrest; self-report indicators from PHDCN, and official indicators obtained through the Chicago Public Schools and the Illinois State Police/Chicago Police Department. In Chapter 4, I compare self-report and official indicators of arrest to determine if the selection of a particular data source ultimately

influences inferences about the predictors of arrest in empirical analyses. In Chapter 5, I compare and contrast the construction of different dropout measures derived from official data sources through an analysis of student administrative records from the Chicago Public Schools.

Chapters 6 through 9 provide the core empirical chapters of the dissertation. In Chapter 6, I examine the contextual effects on racial and ethnic disparities in arrest. In Chapter 7, I examine the extent to which the social organization of Chicago Public Schools reflects the social organization of the neighborhoods in which they are located. More specifically, I examine the predictors of social ties among teachers, and between teachers and both parents and students. In Chapter 8, I examine the effects of school and neighborhood characteristics on student behavior, paying particular attention to how the integration between schools and neighborhood communities facilitates social control. Finally in Chapter 9, I explore the reciprocal relation between school dropout and arrest. To conclude, in Chapter 10 I summarize my results and discuss implications of my findings. I also address possible limitations of the analyses, including the issues of causality and selection that tend to plague contextual effects research.

CHAPTER 2

NEIGHBORHOOD AND SCHOOL EFFECTS ON YOUTH BEHAVIOR: A THEORETICAL FRAMEWORK

2.1 OVERVIEW

As outlined in Chapter 1, the purpose of this study is to examine the so-called mesosystem of influences on youth behavior, where mesosystem refers to the interrelation between the various social contexts that individuals experience (Bronfenbrenner 1979; 1989). Specifically, I examine how the extent and quality of social ties and social relations within neighborhoods, within schools, and between neighborhoods and schools influence the social control of youth behavior. The core argument presented in this chapter and throughout the study is that neighborhoods and schools have independent and joint influences on youth behavior. What I mean by joint influence is that there are ties linking neighborhoods and schools, between individuals in each context and between organizations, which facilitate the social control of behavior. A critical foundation for the whole study is an understanding of why it is *necessary* to examine the simultaneous influence of neighborhoods and schools on youth behavior. This chapter addresses this issue.

Before starting along an agenda that examines the independent and joint influences of neighborhoods and schools on youth behavior, it is first necessary to provide some grounding in the neighborhood effects and school effects literature. To proceed, in Sections 2.2 and 2.3, I offer working definitions of neighborhood and school effects, and provide some examples by which neighborhoods and schools influence

behavior. In Section 2.4, I provide justification for combining neighborhoods and schools into a single analytic framework. In Section 2.5, I examine the concept of social control, which is the primary mechanism I employ to explain the influence of neighborhoods and schools on youth behavior. In Section 2.6, I reiterate the research questions posed in Chapter 1, and outline the conceptual framework used to answer these questions. In this section, I also provide further discussion of social control by illustrating how social ties within neighborhoods, within schools, and between neighborhoods and schools serve to facilitate social control.

2.2 NEIGHBORHOODS

2.2.1 Defining Neighborhood Effect

Generally we can define a neighborhood effect as an emergent property of neighborhoods, net of neighborhood differences in composition (Cook, Shagle, and Degirmencioglu 1997; Sampson, Morenoff, and Gannon-Rowley 2002).[1] In other words, if neighborhood effects do in fact exist, then neighborhood differences in some outcome, like the rate of crime, may be a function of the social organization of neighborhoods, and not solely due to differences in the population composition across neighborhoods.

Figure 2.1 presents a conceptual framework of the relation between neighborhood characteristics and processes and youth behavior. This figure illustrates the fact that neighborhoods potentially influence youth outcomes in a number of direct and indirect

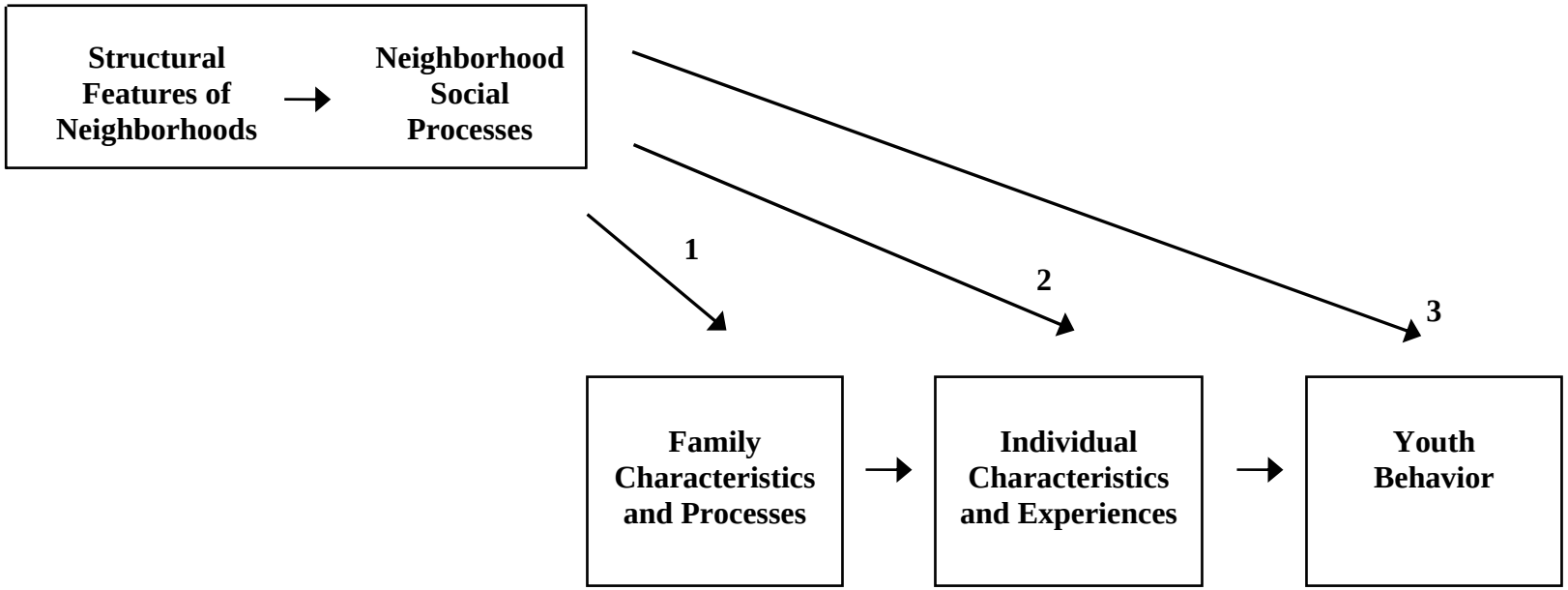
[1] Note that I utilize the term neighborhood throughout the study to refer to an ecological unit. As Sampson (2002) points out, other researchers have defined neighborhood by sentiment and affect, as well as by group characteristics like cohesion. However, in this study I define neighborhood ecologically.

ways. For instance, in reference to arrow number ***1*** depicting the indirect relation between neighborhoods and youth behavior through family characteristics and processes, neighborhood conditions may influence parental practices if, for example, parents respond to unhealthy neighborhood environments by limiting the amount of time their children spend outside of their homes and by instituting curfews. If parents find neighborhood conditions to be unmanageable because of wayward youth, then parents may react to troublesome peers by influencing which peers in the neighborhood their children associate with, or by moving away from a given neighborhood.

As for arrow number ***2***, describing the association between neighborhoods and youth behavior through individual characteristics and experiences, this relation can represent the influence of neighborhood institutional resources on youth. For example, if a neighborhood has a library or literacy programs, then these resources may be beneficial for stimulating youth interest in learning. An example of another potential neighborhood mechanism that influences youth behavior is exposure to neighborhood violence. Exposure to violence may influence the mental health of youth, and may desensitize individuals over time to the use of violence (Bingenheimer, Brennan, and Earls 2005).

Finally, the relation depicted in arrow number ***3*** represents the direct effect of neighborhood characteristics on youth behavior. For example, neighborhoods directly influence youth behavior through the creation of criminal opportunities. In some neighborhoods there are relatively more suitable targets for a crime than in others (Cohen and Felson 1979). Furthermore, some neighborhoods lack capable guardians to scrutinize suspicious suspects or activity in the neighborhood.

Figure 2-1. The Neighborhood Effects Framework



2.2.2 Models of Neighborhood Effects

While the preceding examples offer a glimpse of potential mechanisms of neighborhood effects, a number of recent research reviews have systematically outlined various taxonomies to describe ways in which neighborhood conditions causally affect individuals, particularly youth (Jencks and Mayer 1990; Leventhal and Brooks-Gunn 2000; Sampson et al. 2002). These reviews offer a framework for understanding *how* and *why* neighborhood structural properties, like socioeconomic status, ethnic heterogeneity, and residential mobility (see Shaw and McKay 1942) affect various individual outcomes. In their review of the literature, Jencks and Mayer (1990) describe six distinct models of neighborhood effects:

1) Epidemic/Contagion: this model focuses on the influence of peers to spread problem behavior as the mechanism of neighborhood effects. More specifically, contagion models posit that social problems are contagious and spread through peer influence, and may result in epidemics (i.e. extremely high incidence of social problems).
2) Competition: this model posits that neighborhood residents compete for scarce resources.
3) Cultural Conflict: this model posits that subcultures arise in environments where success is unequally distributed, such that these subcultures develop an unconventional route as a means of achieving mainstream societal goals.
4) Relative Deprivation: posits that residents evaluate their relative standing compared to their neighbors. In this view, individuals will hold a more favorable

opinion of their status and abilities if they reside in impoverished areas or attend poor quality schools.

5) Institutional: this model emphasizes the importance of neighborhood institutions like schools, child care, access to medical care, social services, police, and recreational centers.
6) Collective Socialization: in regards to socialization of youth, this model posits that prosocial adults serve two purposes. They serve as role models, and also provide supervision and monitoring of youth behavior. Collective socialization is a means for achieving the social control of behavior.[2]

While these models present a general taxonomy of neighborhood influences, it is important to specify in discussions of neighborhood effects just what outcome is being affected. For instance, it has been vigorously debated in the field of urban studies just what neighborhoods are good for and how their influence has changed with time. Employing the conception of community lost, saved, and liberated, Wellman (1979) observes that industrial advances in modern society have fundamentally changed the structure and location of communal social ties. Put simply, primary social ties are much more dispersed now than they once were. However, as Sampson (1999) argues, the local neighborhood still can serve vital purposes, namely as a geographic site for the pursuit of

[2] Collective socialization and social control are related concepts, both of which are used throughout the study. However, an important distinction should be made. I use Jencks and Mayer's (1990) phrase *collective socialization* to refer to a structure of social relations within and between neighborhoods and schools that can be activated to achieve social control of youth. Collective socialization is the means; social control is the ends.

common goals like public safety and the collective socialization of youth. In their review, Jencks and Mayer (1990) are primarily examining neighborhood effects with respect to youth outcomes. Likewise, the objective of this dissertation is to examine neighborhood effects on youth socialization and control of youth behavior.

Throughout this dissertation study, I pay particular attention to the collective socialization model outlined above, and the means by which collective socialization functions to socially control youth behavior. Later in the chapter I provide an overview of research related to the effects of various aspects of collective socialization on youth behavior. In the study, I also examine the effects of schools on youth outcomes and behavior. While some researchers subsume schools under the rubric of a neighborhood institution (i.e. Model #5 from Jencks and Mayer), throughout this study I examine the influence of schools and neighborhoods as interrelated, yet distinct entities. In other words, I do not consider schools to be solely a neighborhood institution; rather, I consider the social organization of schools to be influenced by a number of disparate factors, only one of which is neighborhood social organization. I make this distinction between neighborhoods and schools for a number of reasons that will be detailed in Section 2.4 to follow.

2.3 SCHOOLS

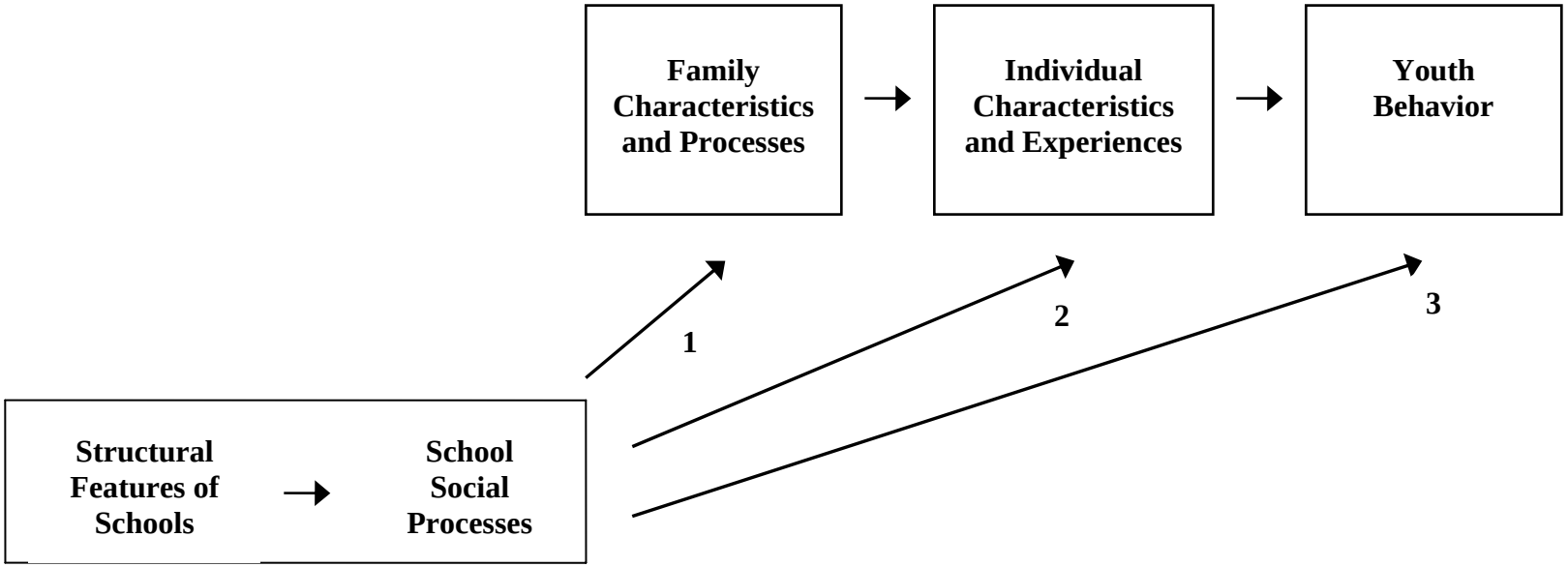
2.3.1 Defining School Effect

A school effect as an emergent property of schools, controlling for demographic composition of the schools. Speaking to the problem of school effects, Dreeben (1994,

p.30) contends, “[I]ts exploration requires devoting attention to the properties of schools and whether and how they influence achievement [or other youth outcomes], net of individual social background and other potentially confounding influences.”

Figure 2.2 presents a conceptual framework of the relation between school characteristics and processes and youth behavior. As with neighborhoods, schools influence youth outcomes in a number of direct and indirect ways. For instance, in reference to arrow number ***1*** depicting the indirect relation between school and youth behavior through family characteristics and processes, one extreme response of families to school conditions is when parents withdraw their children from schools because of the poor quality of schools or because of safety concerns, and instead choose to home school them. A causal mechanism representing arrow number ***2*** could be the influence of school resources on academic engagement. For instance, Hellman and Beaton (1986) find that the higher the ratio of students to teachers in a given school, the more likely suspension of middle school students will be. Providing attention to students fosters academic engagement, which, in turn, tends to keep students out of trouble. As for the direct effect of schools on youth behavior, as represented by arrow number ***3***, similar to neighborhoods, schools provide criminal opportunities for youth. As Gottfredson (2001) notes, schools are a physical environment where individuals come into contact with other individuals with desirable goods (e.g. CDs, clothes, electronics), thus providing opportunities for theft.

Figure 2-2. The School Effects Framework



2.3.2 Models of School Effects

Research on school effects generally examines the argument that student achievement, or various other student outcomes, is measurably influenced by some characteristic of schools as an institution or schooling as a process. However, some of the earliest studies of school effects actually concluded that schools have little effect on educational outcomes. Most notable of these early works is the so-called *Coleman Report* (Coleman et al. 1966), which concludes that schools make little difference in explaining student differences in attainment. Coleman and colleagues reason that a vast majority of the differences in educational attainment is explained by family background, with little of the variation in attainment due to school attributes.

However, the *Coleman Report*, and related studies in the status attainment tradition (for example, see Jencks et al. 1972), generally neglected to examine the importance of the internal organization of schools in the consideration of student outcomes (Lee, Bryk, and Smith 1993). For instance, restricting the consideration of school characteristics to factors like per pupil expenditures ignores the internal organization of schools, and can lead to premature conclusions about the ineffectiveness of schools (Rutter et al. 1979). Likewise, the tendency of the status attainment tradition to define educational attainment by the number of years of schooling completed or by standardized test scores essentially disregards the fact that attainment more precisely refers to the specific content of what is learned in school and the actual experiences of students within school (Bidwell and Friedkin 1988). In other words, simply counting up the number of years of schooling and using that as a predictor of status ignores the fact

that two students who completed the same number of years of school may have actually attended schools characterized by drastically different organizational properties and had drastically different educational experiences. Twelve years attained in School A may not equal twelve years attained in School B.

In their distinction between schools versus schooling, Bidwell and Kasarda (1980) formalize the conceptual difference between studies like the *Coleman Report* and those which examine the internal organization of schools. These authors (Bidwell and Kasarda 1980) argue:

> Studies of 'school effects' must make a clear conceptual distinction between school and schooling. School is an organization that conducts instruction; schooling is the process through which instruction occurs…A theory of schooling must include a conceptualization of its social organizational components. A theory of school effects must show how the organizational form of schools affects schooling. (P.401)

Per this argument, to examine school effects, it is not sufficient to examine the effect of some characteristic of the school (e.g. per pupil expenditure); it is necessary to examine the effects of the social organization of schools (e.g. interaction between students and teachers, which may be influenced, in part, by school characteristics like per pupil expenditure).

It may be clear by now that a common theme has arisen in both neighborhood and school research, which is an emphasis on the mechanisms by which social context matters. Just as neighborhood research has sought to examine why structural characteristics like neighborhood poverty influence individual outcomes, school research has sought to understand the relation between school characteristics and the schooling process, and how and why the organization of schooling affects educational attainment

and other student outcomes (where attainment refers to more than a count of years of schooling completed).

As a final point about models of school effects, we should ask, school effects *on what*? Much of the literature on school effects, whether in the status attainment or school organization tradition, has focused on the influence of schools on educational outcomes like attainment and achievement. However, this narrow focus on the effects of schools contrasts with some of the earliest writings in the sociology of education. For instance, Durkheim ([1922] 1956; [1925] 1961) was concerned with the role of schools in the practice of moral education. For Durkheim, what is attained in schools is not merely a trade, rather the values and habits necessary to ensure productive adult lives (Bidwell and Friedkin 1988). To be clear, it is the intent of this dissertation study to examine the effects of schools and schooling on the broader moral and normative development of youth, and not the cognitive development or the practice of learning a trade per se. This notion of moral education will be addressed in greater detail in Section 2.5, which examines the concept of social control.

2.4 COMBINED MODELS OF NEIGHBORHOODS AND SCHOOLS

Both the neighborhood effects and school effects paradigms have established lines of inquiry, with an abundance of research examining the effects of each context on all types of social outcomes. However, these two streams of research are often done in isolation. Relatively little research has simultaneously examined the independent influence of neighborhoods and schools on youth outcomes, and even less has examined

the interrelation between neighborhoods and schools and their joint impact on social outcomes. To proceed, I am going to first offer some justification for combining neighborhoods and schools into a single analytical framework, albeit a framework that emphasizes the importance of independent effects of neighborhoods and schools on youth outcomes and also joint effects. After providing some justification for this framework, I describe a few select studies that have simultaneously examined the influence of neighborhoods and schools on youth outcomes.

2.4.1 Treating Schools as Distinct from Neighborhoods

In Section 2.2.2, I mentioned that an objective of this study is to examine the influence of schools and neighborhoods as distinct entities, as opposed to treating schools as just one of many neighborhood institutions. As a first justification for this approach, while schools may be located spatially in a neighborhood, the individual actors (e.g. students, teachers, administrators) that participate in this particular social context may actually reside in a different neighborhood than the one in which their school is located and may spend very little time in the neighborhood when outside the confines of school grounds. For example, in the Chicago Public School system, roughly half of high school students attend schools outside of their neighborhood (Bryk and Schneider 2002). Perhaps a more important reason to treat schools as distinct from neighborhoods is that schools are not solely influenced by the neighborhoods in which they are spatially located. For instance, one prominent argument from neoinstitutional research in the sociology of organizations literature is that schools are embedded within, and influenced

by, both local neighborhood communities and larger organizational fields (Arum 2000; DiMaggio and Powell 1983; 1991). As one example, schools and the schooling process are certainly influenced by a number of non-local institutional forces, such as the state regulatory environment.[3]

What are the potential repercussions for understanding youth development and behavior when researchers fail to examine the effects of schools on student outcomes at the same time as neighborhoods? Similarly, what is lost in terms of scientific understanding when researchers simply treat school social organization as a reflection of the wider neighborhood organization in which a school is geographically located? In addressing the proliferation of neighborhood effects studies of educational outcomes that ignore school effects, Arum (2000) provides an unequivocal response to the aforementioned questions:

> It is quite remarkable, however, that these studies usually model neighborhood effects on individual educational outcomes without incorporating consideration of variation in the structure of schooling across neighborhoods: i.e., ignoring the most important probable source of institutional variation affecting educational achievement within neighborhoods. Models of neighborhood effects on educational outcomes that fail to incorporate measures of school characteristics thus implicitly assume that either schools vary solely as a function of demographic and organizational characteristics of neighborhood settings (usually defined by census tracts) or that variation in schooling is inconsequential and insignificant. If schools, however, vary as a result of (unmeasured) political and institutional factors, and variation in the structure of schooling affects student achievement, then much of the research on how neighborhoods affect educational outcomes has been characterized by significant omitted-variable bias. (P.401)

[3] Schools are not the only organizations typically regarded as "neighborhood institutions" that nonetheless are subject to non-local institutional forces. For instance, Small and Stark (2005) find that the prevalence of, and funding for, child-care centers is influenced by the extent of both government funding resources and non-profit resources. The wider implication for research is that many so-called neighborhood institutions may be influenced by non-local forces; a point which closely aligns with the arguments put forth by Logan and Molotch (1987) about the influence of government practices on the operation of urban markets.

Assuming that schools provide both a moral education and cognitive development, I would suggest that Arum's argument applies to a broader range of youth development than just educational outcomes.

In sum, I consider schools to be an institution in their own right, and throughout the study draw a distinction between neighborhoods and schools. Furthermore, if we assume that the neoinstitutionalists are correct and that schools are not merely a function of local organization, then it reasons that schools will have independent effects on youth outcomes net of neighborhood effects. One final distinction is important to reiterate. I have argued for an examination of neighborhoods and school as distinct entities and their independent effects on youth outcomes, but the importance of the *interrelation* between these two distinct entities is also a key issue examined in this study.

2.4.2 Empirical Studies of both Neighborhood Effects and School Effects

Few studies have empirically examined neighborhood effects and school effects on youth outcomes at the same time. Exceptions include work by Hellman and Beaton (1986), Garner and Raudenbush (1991), Teitler and Weiss (2000), and Welsh, Greene, and Jenkins (1999), which will be reviewed in this section. As will become clear, however, even these studies are limited to an assessment of the relative influence of neighborhoods and schools, to the neglect of joint influence.

In one of the earliest empirical studies attempting to differentiate neighborhood and school effects, Hellman and Beaton (1986) investigate the relation between school suspension, school characteristics, and neighborhood characteristics, using data from all

public schools in Boston during the 1982-83 school year. Conducting analyses separately by neighborhood and school predictors, they find significant correlations between school suspension and a number of neighborhood characteristics, including the crime rate and housing quality. However, they observe that neither the unemployment and income levels in a given neighborhood are associated with suspension rates, nor is the racial composition of the neighborhood. With schools, they find that a number of factors are significantly associated with suspension rates, and that the school correlates of suspension are different for middle schools and high schools. Key school factors include the demographic composition of the school, as well as teacher and student mobility. Interestingly, when combining neighborhood and school factors into the same model, they find that the neighborhood crime rate is still a significant predictor of suspension in high schools, along with various school factors, but neighborhood crime is not a significant predictor of suspension in middle schools. The authors conclude that remedies for student suspension in high school, and the criminal and violent behavior leading to suspension, cannot solely focus on the internal school environment. Rather, neighborhood interventions are needed that address problems like poor housing quality and high crime rates.

In another study with both neighborhood and school units of analysis, Garner and Raudenbush (1991) examine the effects of neighborhood deprivation on educational attainment. Using school and census data from Scotland, with a sample of 16 schools and 437 neighborhoods, Garner and Raudenbush find that neighborhood disadvantage maintains a significant, negative effect on attainment, even after controlling for pupil

ability, family background, and school effects (i.e. capturing variation in school structure and process). Subsequent analysis of the data suggests that neighborhoods are relatively more influential than schools in explaining educational attainment (Raudenbush 1993).

Teitler and Weiss (2000) use a cross-classified multilevel model in a study of neighborhood and school effects on youths' sexual behavior. In contrast to Raudenbush (1993), Teitler and Weiss find that schools are relatively more important than neighborhoods in explaining youth behavior. Although neighborhood and school characteristics are significantly and positively related to sexual behavior when examined separately, the final model incorporating both contexts shows that schools maintain significant correlations with sexual behavioral outcomes while neighborhood effects reduce to nonsignificance. In a subsequent analysis limited to schools, the authors find the strongest school effects in white schools, although it is unclear whether this is a race effect or a function of the greater diversity (i.e. outcome variation) of schools attended by white students.

Finally, through a particularly innovative research design, Welsh, Greene, and Jenkins (1999) examine the effects of social contexts on school disorder. In addition to examining school effects, Welsh and colleagues differentiate the effects of both the schools' neighborhood ("local" neighborhood) and the students' home neighborhood ("imported" neighborhood). The former refers to the census tract in which the school is located, which is not necessarily the same as the tract where students reside. By distinguishing between local and imported neighborhoods, the authors are able to test whether neighborhood characteristics have effects that transcend school walls (i.e.

overriding the effect of the school itself, as well as the characteristics of its students). Welsh and colleagues find that individual-level factors are the strongest predictors of school disorder and student misconduct. Of note, neither local nor imported measures of neighborhood crime affect these outcomes. The only neighborhood measure that retains significance in their fully specified model is neighborhood poverty (for both local and imported neighborhoods).

In sum, these past studies have examined the simultaneous impact of neighborhoods and schools, and for the most part reveal that both neighborhoods and schools do matter as predictors of youth outcomes. What these studies also reveal is that the relative importance of each context is a function of what specific outcome is being investigated. While these studies are an important advance in contextual effects research, they are all limited by a focus on neighborhood and school structural characteristics, to the neglect of social processes. In other words, findings from these studies do not truly explain why factors like neighborhood poverty or teacher mobility are related to youth outcomes. One possible answer is social control.

In the last subsection I offered some justifications for a combined emphasis on neighborhoods and schools. Furthermore, if these respective contexts do in fact matter, it remains important to specify the mechanisms by which these contexts independently matter, and to examine whether effective schools can compensate for ineffective neighborhoods and vice-versa. It follows that one important research question to examine is the relative impact of neighborhoods and schools on youth outcomes like delinquency, arrest, and school dropout. While prior research does offer some clues to answer this

research question, still left unanswered is the role of the interrelation between neighborhoods and schools and their impact on youth outcomes. In other words, we can ask, what is the joint impact of neighborhoods and schools on youth behavior? To answer these questions about the relative and joint impacts of neighborhoods and schools, I employ the concept of social control.

2.5 SOCIAL CONTROL

The central focus of this study is on one particular mechanism of contextual effects, namely social control. Both neighborhoods and schools are characterized by distinct sets of social relations and group affiliations that can lead to social control. Additionally, there are social ties between neighborhoods and schools that can facilitate social control. Therefore, I seek to examine how social control stemming from social relations within neighborhoods, within schools, and between neighborhoods and schools influence youth behavior.

2.5.1 A Brief History of Social Control

The concept of social control has long been one of the foremost concerns to the discipline of sociology. Park and Burgess (1928) contend that the central problem of society is to determine how and why individuals come to act together in a corporate way. Indicative of this view about the problem of social control is Park's ([1925] 1967) comment about the place of the individual man in society:

> In view of the fact that man is so manifestly—as Aristotle described him—a political animal, predestined to live in association with, and dependence upon, his

> fellows, it is strange and interesting to discover, as we are compelled to do, now and again, how utterly unfitted by nature man is for life in society. It is true, no doubt, that man is the most gregarious of animals, but it is nevertheless true that the thing of which he still knows the least is the business of carrying on an associated existence. (P. 99)

In terms of definition, as Janowitz (1975, p.82) observes, early formulations of social control tended to define it as the capacity of a social group or a society "to regulate itself according to desired principles and values." Traditionally this concept has been applied to the examination of how social groups manage to maintain social order, especially in the face of social change (particularly shifts from Gemeinschaft to Gesellschaft). Janowitz's definition has two important parts. The regulation component of the definition implies collective action, while the principles and values part implies that collective action is used towards some collective goal or purpose. As Hunter (1985) comments, the emphasis on *self*-regulation implies that social control is very much a part of the structure and function of social groups. Janowitz (1978, p. 3) notes that interest in the concept of social control sprang from a rejection of economic self-interest theories, and states "[S]elf-regulation must imply a set of 'higher moral principles' beyond those of self-interest." Like Park and Burgess (1928), Janowitz (1978) also argues that a key empirical and theoretical task of sociology is to identify those factors which facilitate or hinder the group pursuit of collective goals.

In terms of the site of social control, neighborhoods, in addition to the family, have long been regarded as one of the primary loci of social control. However, the relative influence of neighborhoods on social control may have changed over time. Park ([1925] 1967, pp.106-107) asserts, "with the growth of great cities…the old forms of

social control represented by the family, the neighborhood, and the local community have been undermined and their influence greatly diminished." While Park proclaims the demise of the neighborhood as the locus of social control, recent research still regards neighborhoods as key sites for society members to realize collective goals (Sampson, Raudenbush, and Earls 1997). Whether in regards to the rapid expansion of cities during the industrial era, or during more recent post-industrial times, scholarship has given considerable attention to the role of neighborhoods in the social control process.

While studies of social control have long considered the impact of neighborhoods and neighborhood life, schools have also been regarded as a key locus of social control. John Dewey (1900) was a key proponent of the view that schools and the educational process should do more than simply teach students mere facts, rather schools should function to prepare youth to be productive members of society. Similarly, in his classic text, *The Sociology of Teaching*, Willard Waller (1932) examined the problem of social control and the role of schools in working to integrate youth into larger society. Dreeben (1994, p.12) summarizes Waller's concern over social control as "referring to how societies regulate the conduct of their members by establishing premises for appropriate conduct in each new generation. From a cultural viewpoint the school 'imposes' the standards of the wider community on the children of a locality as well as those of the older generation on the younger." Perhaps the most notable proponent of this view that education carries a moral imperative is Emile Durkheim. Durkheim ([1922] 1956; [1925] 1961) viewed the educational process, and the institutions of educations, as functioning to socialize youth to the values and moral character of larger society. Some more recent

scholarship has also embodied this view. For instance, in his magnum opus, *On What is Learned in School,* Dreeben (1968, p.4) argues, "if schooling forms the linkage between the family life of children and the public life of adults, it must provide experience conducive to learning the principles of conduct and patterns of behavior appropriate to adulthood." The point is that schools, and educational institutions more generally, have long been regarded in the discipline of sociology as institutions of social control, not merely as institutions designed to educate youth for narrowly defined vocational purposes.

2.5.2 Social Change and Evolving Sources of Social Control

As already noted, Park ([1925] 1967) stressed that because of social change and the growth of modern cities at the end of the 19th century and in the beginning of the 20th century, the role of neighborhoods in the social control process has diminished. He (Park [1925] 1967) remarks:

> It is in the community, rather than in the family or the neighborhood, that formal organizations like the church, the school, and the courts come into existence and get their separate functions defined. With the advent of these institutions, and through their mediation, the community is able to supplement, and to some extent supplant, the family and the neighborhood as a means for the discipline and control of the individual. (P.106)

In a similar vein, Coleman (1987) remarks that mass schooling outside of the home occupies a very small slice of human history, spurred by the transfer of economic activity outside of the household in industrialized nations during the latter half of the 19th

century. Prior to this period, the education and socialization of youth took place largely within the home and the nearby neighborhood.

However, numerous authors have found problematic the transfer of responsibility over youth from families and neighborhoods to schools and other public and private institutions. Writing a short while after Park (and Burgess), Znaniecki ([1940] 1965) examined the role of both families and schools as institutions of education[4], but finds that these institutions are largely isolated from broader society. Znaniecki argues that this isolation threatens the capacity of schools to effectively educate and socialize youth.

Shaw and McKay ([1942] 1969), too, observe the problem of isolated social institutions. They give the impression that schools and other community institutions have neither supplemented nor supplanted the role of the family and neighborhood in controlling individuals. As with Znaniecki, the problem to them (Shaw and McKay [1942] 1969) appears to be one of the isolation of schools and other institutions from the larger community:

> Tax-supported public institutions such as parks, schools, and playgrounds are also found in high-rate, as well as in low-rate [delinquency] areas. These, too, are usually controlled and administered from without the local area; and, together with other institutions, they represent to the neighborhood the standards of the larger community…If the school or playground adapts its program in any way to local needs and interests, with the support of local sentiment, it becomes a functioning part of the community; but, instead, it is often relatively isolated from the people of the area, if not in conflict with them. High rates of truants in the inner-city areas may be regarded as an indication of this separation. (Pp.185-186)

[4] Znaniecki applied the term "education" broadly, to include the socialization of youth and cognitive development.

Relatedly, Janowitz (1978, pp.16-17) uses the term "disarticulation," which he defines as "a condition of a lack of unity or integration," to describe the fact that massive population increases during the 20th century "have not been accompanied by the emergence of effective institutions of coordination and self-regulation." Changes in family functioning (e.g. decline of family supervisory functions) over time and the decreasing reliance on the neighborhood community as the nexus of social life have not been offset by the rise of societal institutions to replace the group-regulatory functions previously performed by families and neighborhood communities. In essence, neighborhoods and schools can play vital roles in the social control process, but whether they generally have is another matter altogether.

In sum, two related points from the foregoing discussion are worth reiterating. The neighborhood influence on social control may have declined in the face of social change, without an apparent substitution of schools as the locus of social control. However, the reason that schools have failed to supplant neighborhoods as sources of social control may be due to the fact that schools are isolated from the neighborhood community in which they are located and are not effectively responding to the needs of the community. This discussion of the evolving influences of neighborhoods and schools brings us back to the task of answering questions about the relative and joint impact of neighborhoods and schools on individual life. The answer lies in understanding that the maintenance of social control requires that there is an equilibrium between neighborhoods and schools. Do schools compensate for the decline or absence of neighborhood-level social control? Or when neighborhood-level social control is lacking,

is school-level control necessarily lacking? Do “bad” neighborhoods, generically defined, contain bad schools?

The three questions immediately above speak to the relative impact of neighborhoods and schools, and whether an equilibrium exists between these two contexts. It is a different question to ask whether the absence of social control is due, in part, to a lack of integration and articulation between neighborhoods and schools? Are there benefits for social control when neighborhoods and schools are jointly involved in the moral and educational development of youth? In the next section, I formalize the ways I employ the concept of social control in order to answer these and other related questions.

2.6 RESEARCH QUESTIONS AND CONCEPTUAL MODEL

In this section, I first restate the research questions presented in Chapter 1 that I attempt to answer in the dissertation. I then present a conceptual framework in Figure 2-3, which serves as a guide for answering these questions.

2.6.1 Research Questions

1. Do neighborhood and school contexts influence the likelihood of delinquent behavior after controlling for the individual characteristics of the youth in respective neighborhoods and schools? If so, what role does neighborhood-level social control and school-level social control play in explaining these outcomes?
2. If neighborhood and school effects do exist, what is the relative impact of each on youth behavior?

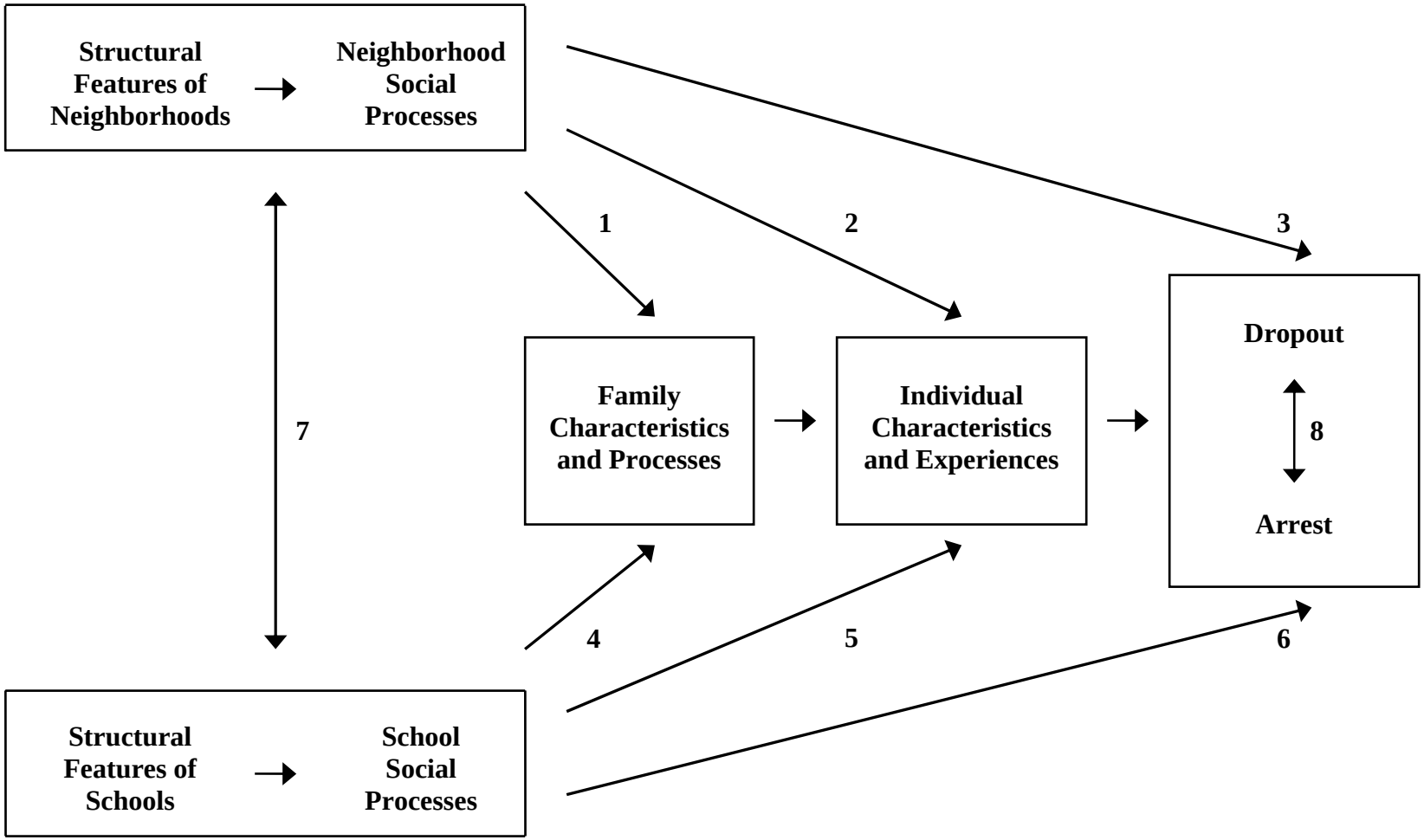
3. What are the joint impacts of neighborhood and school contexts on youth behavior?
4. How are dropout and arrest related? More specifically, does arrest influence the likelihood of dropout, and does dropout influence the likelihood of arrest, net of individual, family, neighborhood, and school influences?

2.6.2 Conceptual Framework

The conceptual framework presented in Figure 2-3 depicts, at a high-level, how neighborhoods and schools independently and jointly influence youth behavior. Much of the focus in the study is on the boxes denoting neighborhoods and schools. “Structural Features of Neighborhoods” refers to aggregate demographic characteristics of a given neighborhood: racial and ethnic composition, socioeconomic status and disadvantage, family structure, population density, residential stability, and immigrant concentration. Similarly, “Structural Features of Schools” refers to aggregate demographic characteristics of a given school: racial and ethnic composition, socioeconomic status of students, school size, school type (e.g. private, parochial, or various types of public schools), grades served (e.g. high school versus elementary school), school resources, and student mobility.

“Neighborhood Social Processes” and “School Social Processes” refer to the mechanisms by which structural features are associated with youth outcomes. For instance, these social processes help explain why crime more commonly occurs in high social process in neighborhoods and schools: social control.

Figure 2-3. Conceptual Framework of Neighborhood and School Effects on Dropout and Arrest



As noted in my descriptions of Figures 2-1 and 2-2, neighborhoods and schools influence youth behavior in a number of direct and indirect ways. Arrows 1, 2, 4, and 5 illustrate this point in Figure 2-3. While these indirect relationships will be considered to some extent in this study, in the interest of limiting the scope of the study to a practical level, most emphasis is put on the relationships depicted in arrows 3, 6, and 7. To be clear, in order to fully understand the neighborhood and school effects on youth behavior, it is important to understand that family-level factors and individual-levels factors are subject to contextual influences, and both mediate and moderate the effects of neighborhoods and schools. However, in the interest of scope, focus in this study is put upon direct contextual effects.

Arrow number 8 depicts the reciprocal relation between arrest and school dropout. Exploring this relationship allows me to answer Research Question 4 from the preceding page. While the main emphasis in this study is on exploring the neighborhood and school effects on youth behavior, it is vital to understand that contextual effects and life transitions from one time period shape developmental and behavioral outcomes in future time periods (Bronfenbrenner 1989). In essence, if neighborhoods and schools influence a given youth outcome (e.g. school dropout), I then want to understand how this outcome is developmentally related to subsequent individual outcomes.

In order to put this framework to the test, I focus on how the quality and usefulness of social ties influence youth behavior. I examine whether social ties within neighborhoods, within schools, and between neighborhoods and schools inhibit, or maybe even promote, youth behavior like arrest and dropout. This emphasis on social ties

relates to the earlier discussion about the collective socialization model of contextual effects (Jencks and Mayer 1990), and the importance of social ties for both supervisory and youth socialization purposes. With social ties in mind, a discussion of two related concepts, social capital and collective efficacy, will illustrate the relation between social ties and social control of youth behavior within neighborhoods and within schools.

2.6.2.1 Ties Within Neighborhoods and Schools

Coleman (1990) observed that when parents know the parents of their children's friends, there are potential benefits for adolescent development and control of behavior. This intergenerational closure that Coleman describes provides parents with information from other parents and neighbors about their children, provides extra supervision and monitoring of children, enables parents to discuss what is appropriate behavior for their children and appropriate sanctions for misbehavior, and generally facilitates social control (see also Sampson, Morenoff, and Earls 1999). Coleman (1988) notes that intergenerational closure (i.e. network closure) is one type of social structure that facilitates what he terms social capital, where social capital refers to a resource that arises from social relations. Social capital, as a resource, can be used to control youth behavior — one of many uses of social capital.

One of the common critiques in the literature on research examining the importance of social ties is that strong ties among neighborhood residents are not always conducive to social control. One classic example is *Street Corner Society* by William F. Whyte (1943). Cornerville was characterized by dense social ties, but the area still had

much criminal activity, including organized crime.[5] One lesson learned from Whyte's study is that dense social ties are certainly a resource available to control crime and misbehavior, but they must be used towards a specific purpose, like stopping neighborhood crime.

Similarly, Coleman (1988, p.s98) was careful to point out that social capital is not completely fungible, in that social capital that is valuable for facilitating certain actions are useless for other types of actions. Again in regards to the example of *Street Corner Society*, social capital in Cornerville may have actually facilitated crime instead of crime *control*.

Coleman (1988) was also careful to remark that social capital makes possible certain actions, but that does not guarantee that such actions will necessarily take place. Therefore, in some sense social capital is a necessary, but not a sufficient requirement for action. If social networks provide a capacity for action, how is this capacity activated? In response to this question, Sampson and colleagues (1997) introduce a concept called "collective efficacy," which refers to the process of activating or converting social ties to achieve collective goals, such as public order or the control of crime. Collective efficacy is based upon a combined measure of neighborhood informal social control and ties among neighborhood residents.

Just as with neighborhoods, it is relevant to examine the influence of social ties on social control and behavior in schools. Recently, attention has been given in the sociology of education literature to understanding how social ties influence school

[5] Cornerville is a pseudonym used by Whyte (1943), which refers to a section of an urban area in the northeastern region of the United States.

effectiveness. One particular effort is the work of Bryk and Schneider (2002) in their explication of "relational trust." Bryk and Schneider (2002, p.14) define relational trust as a "consequential organizational property of a school community" that is rooted in the "nature of interpersonal social exchanges" among members of the school community. They argue that the basic operation of schools is conditioned upon social exchanges between teachers and students, teachers and other teachers, teachers and parents, and teachers and school administration. The conception of relational trust is strongly related to Coleman's (1988) discussion of social capital. In adherence with Coleman's (1988) reasoning, exchanges between school actors described by Bryk and Schneider (2002) carry with them a set of obligations and expectations. When these obligations and expectations are not met, relational trust and social relationships are weakened. However, when obligations and expectations are met, and relationships are characterized by trust, then consensus on norms and collective control of student behavior are more likely.

Just as Coleman (1988) observed that social capital merely makes possible certain actions, one could ask whether relational trust is sufficient for producing social control. Perhaps relational trust is best characterized as a "resource potential," but one that must also be activated and utilized (Sampson et al. 1999). Thus, the conception of collective efficacy may be appropriately applied to school environments to refer to the way relational trust among school actors is converted in order to achieve some collective goal (e.g. school improvement, control of youth misbehavior).

2.6.2.2 Ties Between Neighborhoods and Schools

Three types of ties between neighborhoods and schools will be examined in this section, which can be employed to answer Research Question 3. The first set of ties is between parents and the school or school actors. The second type of tie is between schools and neighborhood institutions. The third set of ties concern the role of the neighborhood community in the governance of schools.

As already noted in Section 2.5.2, one important reason for the absence of social control is the isolation of neighborhoods institutions like families and schools (Janowitz 1978; Shaw and McKay [1942] 1969). Kornhauser (1978, p. 79) observes that in socially disorganized areas, "there is a paucity of intermediate relations that link primary to secondary institutions and secondary institutions to each other…The family in particular has few links to other institutions. The school stands apart from the remainder of the community, alien and unresponsive to its needs." What exactly are these "intermediate relations" that link community institutions, such as schools? We can look to Shaw and McKay ([1942] 1969, p.443) for an answer: "social control in low-crime-rate areas is achieved through institutions linked to each other by means of voluntary associations."

The preceding subsection introduced the concept of social capital, and social structures like network closure that bring about social capital. In fact, much of James Coleman's empirical research on social capital examines the intermediate relations between community institutions, particularly between families and schools. For instance, Coleman and Hoffer (1987) examine social capital garnered from teacher-student relations, student-to-student relations, and parent-to-parent relations. In regards to the

latter set of relations, between parents, Coleman and Hoffer examine the role of schools is facilitating the type of social network closure that fosters social capital and ultimately social control. They (Coleman and Hoffer 1987, p.239) argue, the "most important point is the recognition on the part of the principal [of a school] that the social capital that exists in the community, its power to make and enforce norms for the youth of the school, is not fixed and immutable but can be affected by actions of the school."

While Coleman and Hoffer (1987) are primarily describing the role of the school is facilitating network closure among parents and students, their arguments have been applied to show how schools can work with other local and non-local organizations (i.e. churches, community groups, non-profit agencies) in order to foster social capital in the neighborhood community (Dryfoos 1994). In their study, Coleman and Hoffer (1987) attribute variations in student outcomes like school dropout to differences in the social organization of schools. In particular, Coleman and Hoffer suggest that Catholic schools have relatively greater parental involvement than other types of schools, which helps generate social capital. The fact that a religious community surrounds the school community in Catholic schools makes intergenerational closure more likely. Coleman (1987) argues that the reason social capital is more prevalent in religious schools (both Catholic and non-Catholic) is because religious organizations have cross generational members and are particularly adept at fostering the intergenerational closure so vital to social capital. The implication for non-religious schools is that to create neighborhood-level social capital, ties are necessary between schools and neighborhood organizations that service students, parents, and neighborhood residents.

One recent application of this argument about fostering neighborhood-level social capital has taken the form of what are known as full-service schools, or community schools (Dryfoos 1994). These types of schools are designed to support all aspects of youth development, which includes not only education of youth, but also endeavors like after-school programs, education classes for parents, and social services. The focus of these schools is not solely on bettering the school context of youth, but also the familial and neighborhood context of youth. While the implementation of these types of schools varies across school districts, typically the schools collaborate with the non-profit sector and social welfare/social service agencies (i.e. juvenile justice, child protective services, mental health, and public health).

One final set of neighborhood-school ties are critical to examine with respect to the joint impact of neighborhoods and schools on youth behavior, namely local governance of schools. While I have been careful to observe that schools and the schooling process are not solely shaped by neighborhood dynamics (i.e. district, state, and federal policies and practices all influence the functioning of schools), I still contend that the local neighborhood can play a role in the governance of schools, particularly public schools. To the extent that effective governance of schools is a prerequisite for school social control, it is important to understand the neighborhood and non-local forces that shape the way a school is governed, and ultimately a school's capacity for social control of youth.

Democratic localism embodies the notion that resident participation, community control, and local flexibility are vital for effective governance of schools and other public

institutions (Bryk et al. 1998). With regards to schools, Bryk and colleagues (1998) observe that the assumption behind democratic localism is that local community participation acts as a "lever" for fundamental changes in the operation of schools that ultimately enhance education. Further, with respect to the specific governance of the Chicago Public Schools, they (Bryk et al. 1998) note:

> the commitment to democratic localism [in Chicago] was seen, by at least some advocates for reform, as part of a larger strategy at urban community building. The loss of local institutions of all kind---social, economic, and religious---have denuded urban community life and undermined the viability of these communities. Any effort to stem the current destruction and to recreate communities requires a massive commitment to local institution-building. Key in this regard is expanded opportunities for citizen participation and community education about local affairs. With sustained local engagement and some external supports, it is argued that even poor citizens can take control of their circumstances and improve them. (P. 17)

For the purposes of the present study, I seek to determine whether the extent of local participation in the governance of schools diminishes the social isolation of schools from the larger neighborhood community described by the aforementioned authors (Janowitz 1978; Kornhauser 1978; Shaw and McKay [1942] 1969; Znaniecki [1940] 1965).

In sum, I operationalize the conceptual framework presented in Figure 2-3 by describing social ties within neighborhoods, within schools, and between neighborhoods and schools, and by examining the relation between these social ties and the social control of youth behavior.

2.7 CONCLUSION

In conclusion, in this chapter I have offered a theoretical framework and discussion for the ensuring empirical analyses, grounded in an emphasis on what

Bronfenbrenner (1979; 1989) characterized as the mesosystem domain of youth development. In addition to providing definitions and examples of neighborhood and school effects, I provided justification for a combining neighborhoods and schools into a single analytic framework. Through a series of empirical chapters, the rest of this study examines the quality and extent of ties within neighborhood and school contexts, and between these contexts, and the potential benefits of these ties in terms of the social control of youth behavior.

One caveat should be made at the outset of this study given arguments presented in this chapter. It has been pointed out that a number of early 20th century sociologists (e.g. Park and Burgess) foresaw the demise of neighborhoods as sites of social control, and the need for schools to perform functions of control previously carried out in neighborhoods (and families). These sociologists were writing in an era different from today, when American cities in the Midwest and Northeast were expanding rapidly. It may be true that neighborhoods were relatively less important in the social control process than schools in the 1920s. It may be true today. When assessing the roles of neighborhoods and school in the social control process, and the relative and joint impacts of each on youth behavior, it is important to remember that results are confined to a certain period of time. In other words, neighborhood effects and schools effects, if they exist, may be different in the year 2006 than they were 100 years ago.

CHAPTER 3

DATA SOURCES AND MEASURES

3.1 OVERVIEW

This chapter provides an overview of the data sources and measures used in empirical analyses. I utilize data from six different data repositories in the study: 1) the Project on Human Development in Chicago Neighborhoods, 2) 1990 and 2000 U.S. census, 3) the Consortium on Chicago School Research's Surveys of the Chicago Public Schools, 4) Chicago Public Schools aggregate test score and demographic data, 5) the Chicago Public Schools student administrative data, and 6) a combined set of criminal justice data from the Illinois State Police and Chicago Police Department. Descriptions of statistical methods that make use of these data are provided within the respective empirical chapters to follow.

3.2 THE PROJECT ON HUMAN DEVELOPMENT IN CHICAGO NEIGHBORHOODS (PHDCN)

The Project on Human Development in Chicago Neighborhoods is an interdisciplinary project that focuses on understanding the causes of juvenile delinquency, adult crime, substance abuse, and violence, among other outcomes. The PHDCN has a number of independent surveys, two of which are used in the present study. The first survey is an assessment of neighborhood context, and the second is a longitudinal survey of individuals, both youth and their caregivers.

3.2.1 1994-1995 PHDCN Community Survey

The Community Survey yielded a probability sample of 8,782 Chicago residents, who responded to a series of questions about the characteristics of their neighborhood environments. Survey questions include items about the social organization of neighborhoods, including an emphasis on the cohesiveness of ties among neighborhood residents and neighborhood parents, and their willingness to engage in social control. Additional questions pertain to organizational and social service density in the neighborhood, resident perceptions about neighborhood problems and disorder, and normative beliefs about individual behavior and the legitimacy of the law. For the purposes of the PHDCN survey efforts, neighborhood boundaries were operationally defined by combining 847 census tracts into 343 neighborhood clusters (NC), constructed to be "…as ecologically meaningful as possible, composed of geographically contiguous census tracts, and internally homogeneous on key census indicators" (Sampson et al. 1997, p. 919). These census indicators include socioeconomic status, race/ethnicity, housing density, and family structure. An average of 8,000 residents comprise each of the 343 neighborhood clusters.

In terms of sampling, a multistage procedure was used during data collection to assemble the total sample of 8,782 residents. In the first stage, Chicago city blocks were sampled within each of the 343 neighborhood clusters (Earls 1999). In the second stage, dwellings were sampled within each of the sampled city blocks. Finally, one adult resident aged 18 or older was sampled within the sampled dwelling unit.

In the survey, subjects responded to a total of seventy-one multipart survey questions. Following conventions utilized in previous empirical analyses with the Community Survey data (see, e.g. Sampson et al. 1997; Sampson et al. 1999), I utilize an assortment of neighborhood-level scales derived from resident responses to these seventy-one survey questions.[1] Scales utilized in subsequent analysis include: Child-Centered Social Control, Collective Efficacy, Physical Disorder, and Social Capital. Each of these scales were constructed via a multilevel regression model, with item responses to each survey question nested within a respondent, and respondents nested within neighborhood clusters. The first level of the model represents an item response model with scale scores adjusted for missing data and unreliability. In other words, individual responses which are unreliable or are missing data are weighted less in the construction of the neighborhood aggregate scale. At the second level of the model, scale scores are adjusted for the individual characteristics of respondents in neighborhood clusters (gender, age, race and ethnicity, marital status, education, employment status, homeownership, years of residence in neighborhood, and the number of residential moves in the five years leading up the survey). At the third level of the model, each neighborhood specific mean for a given scale is allowed to vary around the mean score for a scale for the city as a whole. From this three-level regression model, a neighborhood specific empirical Bayes residual is output, which is the neighborhood specific scale I use in analyses (see also Raudenbush and Bryk 2000, Chapter 3). See Appendix A for a

[1] I am indebted to Robert Sampson and the Project on Human Development in Chicago Neighborhoods for providing both the resident-level Community Survey responses and the neighborhood-level survey scales.

listing of individual survey items used to derive these neighborhood-level scales, and see Table 3-1 for a descriptive summary of measures from the Community Survey.

Table 3-1. Descriptive Statistics of PHDCN Neighborhood Clusters, 1994-1995

	Mean	(S.D.)
Child-centered Social Control	3.31	(0.33)
Physical Disorder	1.67	(0.31)
Collective Efficacy	3.89	(0.26)
Social Capital	3.55	(0.20)

3.2.2 PHDCN Longitudinal Cohort Study

In addition to the Community Survey, I also draw upon another PHDCN data repository, the Longitudinal Cohort Study. The Longitudinal Cohort Study is a multi-wave survey designed to gather information on the factors influencing human development and antisocial behavior of Chicago youth. Longitudinal data was collected on seven cohorts of subjects, defined by age at baseline (0, 3, 6, 9, 12, 15, and 18), with subjects and their primary caregivers interviewed up to three times between 1995 and 2002. This cohort data was collected through an accelerated longitudinal design, with the idea of capturing major life events and transitions from age 0 to 24. Life transitions include school entry, high school entry, work, and family formation. In an accelerated longitudinal design, there is an overlap in the ages of observation for adjacent cohorts. With overlapping cohorts, it is possible to chart youth development from birth until age 24 without the necessity of following the same cohort for 24 years. Wave 1 of the survey

was completed between 1994 and 1997; wave 2 was completed between 1997 and 2000; and wave 3 of the survey was completed between 2000 and 2002. The interval between interviews was about 2.5 years.

Analyses presented in this dissertation utilize data on the 12, 15, and 18 age cohorts. In the data collection, a random sample of 80 neighborhood clusters, stratified by racial/ethnic composition (seven categories) and socioeconomic status (high, medium, and low), were selected from the total of 343 neighborhood clusters in Chicago. Within these 80 clusters, a simple random sample of households yielded a total sample of 2,150 youth in the 12, 15, and 18 cohorts.

As will be described below, analyses conducted in this study use a subsample of these 2,150 youth who consented to a search of their data records held by government agencies. Consent covers both school records and criminal records. A total of 1,775 out of the 2,150 youth provide such consent. Of the 1,775 who consented, 1,268 attended the Chicago Public Schools for at least a portion of their educational careers.

An assortment of individual-level and family-level scales are derived from the first wave of the cohort data and used as independent variables at various points of the empirical analyses. The following scales were utilized in analyses: Self-reported Offending (violent, property, public-order, and drug), Group Offending, Family Supervision, Parent-Child Conflict, and Peer Deviance. Items for the respective scales were combined using a multilevel item response model (IRT) with the STATA GLLAMM program (Rabe-Hesketh, Skrondal, and Pickles et al., 2004). See Appendix B for a listing of individual survey items used to derive these individual-level scales, and

Table 3-2. Descriptive Statistics - Individual Characteristics, PHDCN Cohorts 12-18

	Full Sample (N = 2150)		Subsample: Consented to Records Search (N = 1775)		Subsample: Consented and CPS Student (N = 1268)	
	Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)
Male	0.49	(0.50)	0.49	(0.50)	0.47	(0.50)
Age at Wave I	14.89	(2.47)	14.78	(2.45)	14.63	(2.41)
Cohort Proportions						
Cohort 12	0.38	(0.49)	0.40	(0.49)	0.42	(0.49)
Cohort 15	0.32	(0.47)	0.33	(0.47)	0.33	(0.47)
Cohort 18	0.29	(0.46)	0.28	(0.45)	0.25	(0.43)
Race and Ethnicity						
Black	0.37	(0.48)	0.36	(0.48)	0.42	(0.49)
Mexican	0.30	(0.46)	0.32	(0.46)	0.29	(0.46)
Puerto Rican/Other Latino	0.13	(0.34)	0.13	(0.33)	0.12	(0.33)
White	0.16	(0.36)	0.16	(0.36)	0.12	(0.33)
Other Race	0.04	(0.20)	0.04	(0.19)	0.04	(0.19)
Immigrant Generation						
First	0.17	(0.37)	0.16	(0.37)	0.15	(0.35)
Second	0.27	(0.44)	0.28	(0.45)	0.27	(0.45)
Third or higher	0.56	(0.50)	0.56	(0.50)	0.58	(0.49)
IQ	99.43	(14.88)	99.89	(14.94)	99.21	(14.47)
Offending						
Violent	0.13	(0.92)	0.13	(0.92)	0.18	(0.94)
Property	0.09	(0.61)	0.06	(0.58)	0.07	(0.59)
Public-Order/Status	0.13	(0.61)	0.13	(0.61)	0.14	(0.62)
Drug (Natural Log)	1.12	(0.16)	1.12	(0.16)	1.12	(0.16)
Exposure to Violence	0.00	(2.51)	-0.03	(2.69)	0.21	(2.70)
Marijuana Use	1.42	(1.07)	1.42	(1.02)	1.44	(1.05)
Alcohol Use	1.54	(0.88)	1.54	(0.84)	1.51	(0.80)
Cigarette Use	1.85	(1.62)	1.85	(1.57)	1.83	(1.53)
Student Mobility	2.14	(1.17)	2.31	(1.22)	2.39	(1.26)
Chronic Truancy	0.04	(0.20)	0.05	(0.21)	0.05	(0.22)
Ever Special Education Student	0.28	(0.45)	0.29	(0.45)	0.30	(0.46)
Ever Retained in Grade	0.16	(0.37)	0.18	(0.39)	0.19	(0.39)
Behavior (YASR or YSR)						
Aggression	7.86	(5.78)	7.96	(5.78)	8.01	(5.89)
Anxiety/Depression	7.60	(6.26)	7.57	(6.26)	7.22	(5.98)
Delinquency	3.43	(3.03)	3.42	(2.99)	3.49	(3.00)
Externalizing	11.29	(7.89)	11.37	(7.89)	11.51	(8.02)
Internalizing	14.56	(9.45)	14.53	(9.42)	14.29	(9.22)
Somatic Complaints	3.63	(3.14)	3.63	(3.12)	3.75	(3.16)
Total Score	46.04	(24.87)	46.03	(24.69)	45.67	(24.57)
Withdrawn	3.60	(2.41)	3.60	(2.39)	3.59	(2.37)
Temperament EASI						
Impulsivity	2.68	(0.57)	2.67	(0.57)	2.67	(0.58)
Inhibitory Control	2.54	(0.92)	2.56	(0.91)	2.56	(0.93)
Decision Time	2.98	(0.81)	2.94	(0.81)	2.94	(0.82)
Sensation Seeking	2.79	(0.76)	2.79	(0.77)	2.80	(0.77)
Persistence	2.40	(0.85)	2.37	(0.85)	2.37	(0.86)
Activity	3.64	(0.87)	3.58	(0.88)	3.58	(0.88)
Emotionality	2.81	(1.09)	2.78	(1.06)	2.80	(1.06)
Sociability	3.66	(0.81)	3.60	(0.82)	3.62	(0.81)
Shyness	2.46	(0.87)	2.48	(0.88)	2.49	(0.88)
Sociability/Shyness	3.06	(0.49)	3.04	(0.49)	3.06	(0.49)

Table 3-3. Descriptive Statistics - Family and Peer Characteristics, PHDCN Cohorts 12-18

	Full Sample (N = 2150)		Subsample: Consented to Records Search (N = 1775)		Subsample: Consented and CPS Student (N = 1268)	
	Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)
Family						
Married Parents	0.50	(0.50)	0.52	(0.50)	0.48	(0.50)
Family SES	-0.02	(1.30)	-0.01	(1.32)	-0.07	(1.27)
Number of Children	3.37	(1.80)	3.37	(1.79)	3.41	(1.84)
Years at Residence	5.97	(5.23)	6.08	(5.20)	5.92	(5.06)
Family Supervision	0.00	(0.76)	-0.08	(0.78)	-0.09	(0.78)
Family Support	0.00	(0.86)	-0.04	(0.87)	-0.07	(0.88)
Father with Criminal Record	0.11	(0.31)	0.11	(0.31)	0.11	(0.32)
Father Substance Use Problem	0.15	(0.35)	0.15	(0.36)	0.16	(0.36)
Mother Substance Use Problem	0.04	(0.21)	0.05	(0.21)	0.05	(0.22)
Mother Depression Problem	0.15	(0.35)	0.15	(0.36)	0.16	(0.37)
Family Control	58.23	(8.97)	58.22	(8.79)	58.34	(8.69)
Family Conflict	48.23	(10.79)	48.62	(10.75)	48.90	(10.74)
Family Religiosity	59.87	(7.87)	59.53	(8.03)	59.82	(7.82)
Peers						
Friend Support	0.00	(0.56)	0.06	(0.53)	0.05	(0.53)
Peer Attachment	0.00	(0.75)	0.07	(0.71)	0.05	(0.72)
Peer Pressure	0.00	(1.09)	0.21	(1.11)	0.21	(1.12)
Deviance of Peers	0.00	(0.84)	0.13	(0.83)	0.14	(0.83)
Peer Attachment to School	0.00	(0.43)	0.04	(0.43)	0.06	(0.43)

see Tables 3-2 and 3-3 for a descriptive summary of individual, family, and peer measures derived from the Longitudinal Cohort Study.

Finally, it is important to note that the Longitudinal Cohort data was collected on a sample independent of the Community Survey data collection mentioned previously. Therefore neighborhood-level measures described in the last subsection are <u>not</u> aggregated responses from the cohort study. This aspect of research design is critical because findings of neighborhood effects may be biased if characteristics of the neighborhood are simply aggregated from the respondents that are the focal point of analyses.

3.3 1990 AND 2000 U.S. CENSUS

Data from the 1990 and 2000 U.S. Censuses provide information on the structural features of Chicago neighborhoods. In the 1990 Census, the City of Chicago was composed of 847 census tracts. Following the methodology performed in previous work using both the PHDCN Community Survey and census data, I combine the 847 tracts to match the boundaries of the 343 neighborhood clusters which are the geographical unit of analysis used in this study (see Sampson et al. 1997). The following indicators derived from the 1990 census are used for various analyses in the study: concentrated disadvantage, concentrated poverty, immigrant concentration, residential stability, percent of elementary and high school students residing in a given neighborhood who attend public school, percent of families below poverty, percent of foreign born residents, racial and ethnic composition of the neighborhood, and population density.

The first four census indicators are scales derived from resident responses to multiple census questions. All four scales are created via factor analyses, where items included in each factor are weighted by their factor loadings. Concentrated disadvantage refers to a scale of economic disadvantage influenced by poverty, family status, age, employment, and race. Specifically, the following census indicators are used to construct the measure: the percentage of families below the poverty line, percentage of families receiving public assistance, percentage of unemployed individuals in the civilian labor force, percentage of female-headed families with children, percentage of residents under age 18, and the percentage of black residents. The construction of concentrated poverty is similar to that of concentrated disadvantaged, except it excludes the last two items in

scale construction (% < 18, % black). This separate measure is used in some analyses to avoid confounding with race and age. Immigrant concentration is derived from two census indicators: the percentage of Latino residents and the percentage of foreign born residents. Residential stability is derived from the following census indicators: percentage of residents five years old and older who lived in the same house five years earlier, and the percentage of homes that are owner-occupied. Finally, population density is calculated as the number of residents per square kilometer in each neighborhood. Presented in Table 3-3 is a descriptive summary of the census indicators.

In descriptive analyses in Chapter 7, I also rely upon 2000 Census data. Specifically, I utilize indicators of the racial and ethnic composition of neighborhoods, and compare the 2000 neighborhood composition to the composition of Chicago public schools in the year 2000.

Table 3-4. Descriptive Statistics of PHDCN Neighborhood Clusters, 1990 Census

	Mean	(S.D.)
Concentrated Disadvantage	0.00	(0.99)
Concentrated Poverty	0.00	(0.96)
Immigrant Concentration	0.00	(0.97)
Residential Stability	0.00	(0.98)
% Public School	0.76	(0.19)
% Below Poverty	20.43	(17.31)
% Foreign-born	16.54	(15.63)
Population Density	7028.44	(4100.83)
% Black	41.21	(43.67)
% Mexican	12.92	(20.03)
% Puerto Rican	4.67	(9.74)
% White	35.10	(34.63)
% Other Race/Ethnicity	3.81	(7.44)

3.4 THE CONSORTIUM ON CHICAGO SCHOOL RESEARCH SURVEYS

Data made available through the Consortium on Chicago School Research (hereafter Consortium) is used for both dependent and independent measures in inferential analyses. Starting in 1991, the Consortium has conducted periodic surveys (every 2 or 3 years) of a large sample of Chicago Public Schools. These surveys are designed to gather information on the social organization of schools, human resources in the school, instructional quality, relations between school actors, relations between the school and the surrounding community, and school governance (CCSR 1997). In addition to use of the data for research purposes, the data is used to provide information to educators, policy-makers, and interested others about the public schools from the perspective of students, teachers, and principals.

For the present study, individual- and school-level data are drawn from the 1997 Student Survey of the Chicago Public Schools, the 1997 Teacher Survey of the Chicago Public Schools, and the 1997 Principal Survey of the Chicago Public Schools. Data from 1997 is utilized, as opposed to other years, for a few reasons. First, the breadth of survey topics covered is greater in the 1997 surveys than in the 1991 or 1994 surveys. Second, the sample size of schools, students, teachers, and principals is greater in the 1997 surveys than in previous years (266 elementary schools participated in the 1994 survey). Finally, 1997 is used in order to closely align with the observational period of the survey data from the 1994-1995 PHDCN Community Survey. The one exception is that I utilize a measure of the Local School Council Influence on School Improvement from the 1994 survey data, which is not included in the 1997 data.

In the student survey, a sample of approximately 41,600 elementary school students responded to a variety of questions on topics related to classroom activities and experiences, motivation and expectations for learning, parental involvement and supervision, academic engagement, student delinquency, and arrest. A total 422 elementary schools (out of 477, for a response rate of 88%) participated in the surveys (CCSR 1997). In the teacher survey, a sample of approximately 10,300 elementary school teachers from 422 elementary schools responded to a variety of questions on topics related to social relations within schools, professional development, and school commitment to educating students. In the principal survey, a sample of approximately 350 elementary school principals responded to a variety of questions about the organization and administration of the school, professional development, ties to the community, ties to the central administration, and school changes and improvement.

I utilize an assortment of school-level scales to assess the influence of school social organization on youth outcomes. These scales are derived from individual responses to the student, teacher, and principal surveys. Scales utilized in subsequent analysis include[2]: Community Outreach, Local School Council Influence on School Improvement, Parental Supervision, Parental Support for Learning, Quality of Professional Development for Teachers, School Collective Efficacy, School Focus on Student Learning, School Safety, Student Academic Engagement, Student Arrest, Student Behavior in Class, Student Delinquency, Student Interest in School, Student-Teacher

[2] I thank the Consortium on Chicago School Research for providing both the individual-level survey responses and the school-level survey scales.

Trust, Teacher Commitment to School, Teacher Concern for Students, Teacher Influence in School Decision-Making, Teacher Ties to the Community, Teacher-Parent Trust, and Teacher-Principal Trust. School-level scales from the Consortium data were created via an item response model with individual responses weighted such that responses with missing data or that lack reliability are given less weight. See Appendix C for a listing of individual survey items used to derive these school-level scales, and see Table 3-4 for a descriptive summary of measures from the three Consortium surveys.

In addition to providing school-level data to test school effects in this study, I also utilize Consortium data as outcome variables. For instance, in Chapter 8, I use student responses to questions about delinquency and arrest as dependent variables; regressing these variables on a series of neighborhood and school characteristics. Thus, it is important to note that two sets of dependent variables are utilized in this study, one drawn from the sample of 1,775 PHDCN youth and the other drawn from the sample of 41,600 CPS elementary students. This distinction will be made clear in each of the empirical chapters. Selection of which sample to use in analyses (PHDCN or CPS) depends upon the research question being examined, which is specified in each empirical chapter. Because the 1,775 youth in the PHDCN sample are spread over a total of 477 elementary schools and 67 high schools, in addition to an unknown number of other school options (i.e. private school, parochial school, home school), the sample size within each school is too small for certain types of analyses. On the other hand, student-level data obtained from the Consortium has limited information on youth characteristics and family characteristics, thus precluding, for example, a detailed analysis of the familial effects on

youth arrest. Thus, there are advantages and disadvantages of the use of each sample, such that I utilize the sample that is most appropriate for the specific research questions being examined in a given analysis.

Table 3-5. Descriptive Statistics of Chicago Public Elementary Schools, 1997

	Mean	(S.D.)
% Black Students	58.25	(42.49)
% Latino Students	27.30	(33.58)
% White Students	11.40	(18.25)
% Other Race/Ethnicity	3.05	(7.04)
% Low-Income Students	84.36	(18.17)
Student Mobility	29.34	(17.36)
Enrollment	660.00	(282.28)
General School	0.93	(0.25)
Magnet School	0.07	(0.25)
ITBS Achievement Group	2.81	(1.29)
Community Outreach	0.38	(1.40)
LSC Influence	4.50	(1.32)
Parental Supervision	6.51	(0.41)
Parental Support for Learning	5.33	(0.34)
Quality Prof. Development	5.03	(0.61)
School Collective Efficacy	0.08	(0.99)
Sch. Focus on Learning	5.87	(1.27)
School Safety	5.91	(0.55)
Student Academic Engagement	4.85	(0.25)
Student Behavior in Class	5.43	(0.25)
Student Delinquency	2.70	(0.55)
Student Interest in School	4.91	(0.45)
Student-Teacher Trust	4.80	(0.47)
Teacher Commitment to School	5.92	(1.40)
Teacher Concern for Students	4.62	(0.40)
Teacher Influence in Sch Decisions	5.61	(0.88)
Teacher Ties to Community	4.83	(0.85)
Teacher-Parent Trust	5.29	(0.63)
Teacher-Principal Trust	6.02	(1.16)

3.5 SCHOOL STRUCTURE DATA, CHICAGO PUBLIC SCHOOLS 1997

In addition to 1997 Consortium survey data on school organization, I also utilize data from the Chicago Public Schools from 1997 on the structural features of the Chicago Public Schools. CPS administration currently makes available through its website (http://research.cps.k12.il.us/) an assortment of information about the characteristics of schools, including student demographics and performance on standardized tests.[3] Data covers school characteristics for years from the mid-1990s to the present. The following indicators from the 1997 CPS data are used for various analyses in the study: Percent of Students who come from Low-Income Families, Student Mobility, School Racial and Ethnic Composition, School Enrollment, Average Test Scores from the Iowa Test of Basic Skills, and School Type (i.e. general, magnet). The percent of students in a given school who are low-income is computed as the percent of students who are signed up for free or reduced priced lunch. Student mobility is computed as the number of enrollments in and transfers out of a school after October 1 of a given school year, divided by the student population on October 1. See Table 3-4 for a descriptive summary of indicators from CPS administrative data repositories.

3.6 CHICAGO PUBLIC SCHOOLS STUDENT ADMINISTRATIVE DATA

Student administrative data were provided by the Chicago Public Schools (CPS), and cover the time span from 1991 to 2003. The Chapin Hall Center for Children receives two extracts per school year from the Chicago Public Schools, one at the beginning of the

[3] Much of this data is also available through the National Center for Education Statistics (http://nces.ed.gov/).

school year in September and one at the end of the school year in May. Extracts come from CPS' Student Information System, and contain data on all students in the Chicago Public Schools, not just CPS students in the PHDCN sample. The extracts include data on a variety of subject areas, including student demographics, busing, special education, bilingual education, school lunch program, Pre-K medical screenings, and truancy. Data extracts also include information on student enrollment status and school name and unit number, which are critical to tracking the movement of students through CPS over time. Specifically, the enrollment data provides details on where individuals are going to school, when they change to a different school, if they fail a grade, whether they transfer out of the CPS system (e.g. to a private school), and whether they drop out of school altogether.

In order to match PHDCN youth subjects to their CPS administrative records, an automated matching procedure was used to compare the bi-annual data files from CPS with identifying information on youth subjects from the PHDCN data. For each record pair (i.e. one from the PHDCN data and one from CPS data), a composite weight was created based on the similarity of identifying information across data sources. The automated matching program functions by evaluating the match of the following key identifiers: social security numbers, first and last name, and birth month, day, and year, gender, race and ethnicity, FIPS county code, and five digit zip code. Social security numbers and names are weighted more heavily than other identifying information. Every composite weight score above a user defined threshold is flagged as a matched pair, and a record can only be matched once.

The program was run numerous times with different specifications of the user-defined threshold, providing a means of evaluating the sensitivity of the matching to the threshold. Additionally, the matching program calculates a posterior probability assessing whether each set of matched record pairs is a true match. As a final check, all of the matched records were compared manually.

Out of the 1,775 PHDCN youth in the 12-year-old, 15-year-old, and 18-year old cohorts who consented to have their school records searched, 1,268 appear in the CPS administrative data. This means that 1,268 PHDCN youth were enrolled in a Chicago Public School at some point in time from 1991 to 2003. Finally, inferences drawn from analyses with these CPS student records are generalizable only to public school students.

3.7 CHICAGO POLICE DEPARTMENT AND ILLINOIS STATE POLICE ARREST DATA

Official arrest data were provided by the Chicago Police Department (CPD) and the Illinois State Police (ISP), and cover the time span from 1995 to 2001. Both juvenile and adult arrest data were provided. A matching procedure similar to what was described with the Chicago Public Schools' data was used to compare the data files from the criminal justice agencies with identifying information on youth subjects from the PHDCN cohort data. This procedure calculates the likelihood that records across different data sources belong to the same person by matching as many pieces of identifying information across sources as possible. With the use of multiple identifying variables, records can be matched across data sources even if an alias was used in the official arrest data.

Just as with the CPS administrative data, for analyses I use a subset of the total sample (N = 1,775) who consented to have their official records searched. This subsample showed no significant difference in the average number of self-reported arrests per wave compared to those youth subjects who did not consent to have their criminal records searched (F = 0.925; df = 1, 2136). Out of the 1,775 youth subjects, a total of 341 subjects (19.2%) had at least one arrest record in the CPD or ISP data from 1995 to 2001. For the other 1,434 subjects, given that they do not appear in arrest records, it is assumed that these subjects were not arrested anywhere in the State of Illinois in the period from 1995 to 2001.

3.8 SUMMARY

This chapter has presented an overview of the six data sources used in this study. As noted at the outset of the chapter, descriptions of statistical methods that make use of these data are provided within the respective empirical chapters to follow. In the next two chapters, I compare different methods by which to construct measures of arrest (Chapter 4) and school dropout (Chapter 5). Following that, Chapters 6 through 9 present the core empirical analyses of the study.

CHAPTER 4

EXAMINING THE DIVERGENCE ACROSS SELF-REPORT AND OFFICIAL DATA SOURCES ON INFERENCES ABOUT THE ADOLESCENT LIFE-COURSE OF CRIME

4.1 INTRODUCTION

In a recent review of the state of life-course criminology, Piquero and colleagues (2003, p. 480) importantly ask whether measurement of criminal careers by self-report and official data sources produce similar findings with respect to key dimensions of the criminal career paradigm (i.e. onset of crime, prevalence, lambda, career length, crime-type mix). These authors ponder whether theoretical expectations derived from life-course studies apply equally well to self-report and official criminal records. For example, researchers can question whether the onset of arrest occurs at the same point across data sources, and whether the factors influencing the processes of persistence of and desistence from crime are similar across data sources. Answering these types of questions is fundamental to the advancement of life-course criminology.

This chapter addresses the issue of convergence across self-report and official data by examining the relation between arrest, age, and a number of relevant predictors of arrest. The objective of the chapter is to determine whether self-report and official indicators produce the same conclusions about arrest, paying particular attention to criminal career dimensions and whether theoretical expectations about key predictors of youth crime derived from prior research (e.g. family processes, peer influence, and neighborhood disadvantage) function similarly across measurement types.

4.2 STRENGTHS AND WEAKNESSES OF DATA TYPES

Criminal behavior is generally measured through three different types of data collection: victimization surveys, self-report surveys, and official data from law enforcement agencies and criminal courts. Because of the emphasis in this chapter on arrest, focus is put upon comparing the latter two methods. This section briefly reviews the strengths and weaknesses of these two data types in cross-sectional and longitudinal research. To be clear, this comparison is made in order to illustrate that both self-report and official measures of arrest have strengths and weaknesses, which sets up the research question as to whether these sometimes fallible measures produce divergent findings about the adolescent life-course of crime.

One of the primary benefits of self-report survey data is the capacity to examine the etiology of crime and criminality by means of collecting comprehensive information on individual, familial, and environmental characteristics and influences (Thornberry and Krohn 2003). However, self-report indicators of offending and arrest are plagued by a number of problems, which results in substantial over- and under-reporting of events and behaviors. Here, over-reporting can generally be defined as self-reporting more events or behaviors than actually occurred, while under-reporting refers to reporting fewer events or behaviors than occurred. To name but a few of the problems associated with self-report surveys, researchers have long been concerned with the reliability and validity of measures (e.g., Short and Nye 1957; 1958), including the biases associated with recall error and response falsification. Also, the issues of sample attrition, testing effects from repeated measurement of the same subjects, and lack of construct continuity all

potentially plague measurement in longitudinal designs (Thornberry and Krohn 2000; 2003). Regarding arrest, problems with questionnaire design may contribute to erroneous self-reported arrest counts if question wording does not properly distinguish between actual arrests versus police contact (Blumstein et al. 1986). Further, the more frequently an individual is arrested, the less salient any one arrest will be in memory, such that recall may be most problematic for those arrestees with the greatest number of contacts with the criminal justice system (Blumstein et al. 1986).

Of course, official records are not without fault either. Proponents of victimization and self-report surveys argue that official records severely underestimate the true volume of crime. Findings from analyses of victimization surveys consistently show that victims of crime often do not report victimizations, with reporting rates varying by crime type. Self-report surveys also indicate that most crimes are not detected by law enforcement personnel.

In addition to underestimating the volume of crime, it is also true that some crimes detected by police do not lead to arrest and that some arrests made by police officers will not be counted in official statistics. Black and Reiss (1970) find that only 15% of police contacts with juveniles resulted in an official arrest, thus providing evidence of considerable discretion on the part of police. In a more recent study, Worden and Myers (1999; reported in National Research Council and Institute of Medicine 2001) similarly find that 13% of police contacts with juveniles result in arrest and 14% of contacts with adult suspects. However, a suspect may mistakenly report police contact as an actual arrest in survey data, thus producing divergent results between official and self-

report data on arrest. For instance, as part of the same project on policing, Myers (2002, p. 126) observes that in 3.7% of police contacts with juvenile suspects, the juvenile was handcuffed but not officially arrested. It is an open question as to whether these juveniles interpreted this police action as an arrest or not, but the overall point is that the disposition of police-suspect encounters is often ambiguous and that there is a potential for misinterpretation on the part of suspects as to whether they were formally arrested.

Another problem with official data that contributes to discrepancies with self-report arrest data is the handling of aliases and misidentification of arrestees (Geerken 1994). Geerken (1994) notes that 1.1% of arrestees in his sample lied about their names and were discovered through subsequent fingerprint checks. It is unknown how many of the arrestees in his sample actually gave aliases because the fingerprint check only detected the use of aliases for prior arrestees and not first time offenders. Geerken (1994) also notes that the same individual may appear in criminal history records as multiple individuals because of law enforcement data entry errors (e.g. names misspelled, race/ethnicity entered incorrectly). In sum, official data arguably undercounts the true volume of crime and, to a lesser extent, the true volume of arrests.

One important advantage of official data in longitudinal studies is the fact that arrests and criminal case processing are recorded at specific points in time, as opposed to typical self-report surveys which ask about behavior and events during a window of time (often 12 months prior to the interview date) (Kazemian and Farrington 2005). In self-report surveys, even when subjects are asked about the specific timing of events, there are substantial recall errors in reporting. Particularly problematic is the issue of telescoping.

Because of difficulties recalling the timing of events, respondents of self-report surveys often over-report behaviors that did not actually occur in the twelve month window, or under-report behaviors that did occur during the window.

Additional advantages of the use of official data in longitudinal studies include the length of the time period covered, and the lack of gaps in recording of criminal events. These are key reasons why most knowledge about criminal careers has been obtained from official data sources (Farrington et al. 2003). Self-report survey data collections are often designed to have gaps in the reporting period, in order to compensate either for the telescoping issue mentioned in the preceding paragraph, or for practical reasons associated with the cost of doing research. Furthermore, self-report surveys of youth typically follow subjects for a limited number of years, usually into late adolescence or early adulthood. However, life-course research shows that offenders do continue committing crimes well into adulthood, suggesting that truncating analyses to early adulthood may lead to false conclusions about the true age-crime relation (Laub and Sampson 2003).

4.3 CONVERGENCE ON INDIVIDUALS' RECORDS OF ARREST

Because of the problems addressed above concerning measurement of arrest in official and self-report data, it is an open question as to whether these two data types will show convergence on arrest, in the sense that self-report and official arrest records for the same person will show agreement on whether the given individual has ever been arrested, the frequency of arrest if she or he has been arrested, and the timing of arrest. Past

research has produced mixed findings about the convergence on the same outcome measure across data sources.

Hirschi (1969) finds that only 60% of individuals in his study with official records admitted being picked up by the police. Hardt and Petersen-Hardt (1977) find that 78% of the juveniles in their study with an official police record did self-report having a criminal record, and that 95% of those juveniles who reported that they did not have a criminal record did not in fact have an official record. Huizinga and Elliott (1986) find that between 36 and 48% (depending on the matching criteria) of individuals in the National Youth Survey with an official arrest record misreported at least some of their behavior, and between 22 and 32% of official arrests were not reported in self-report data. Hindelang and colleagues (1981, p. 172) similarly find that a large number respondents in their sample failed to report being picked up by the police, and also that the failure to report varies by race and gender. White males failed to report 24% of the occasions when they were picked up by police; the figure for black males is 50%; for white females, 48%; and for black females, 70%. In a more recent study, Maxfield and colleagues (2000) find that 73% of subjects with an official arrest record self-reported having an arrest record, and that roughly 21% of subjects without an official record self-reported having been arrested. Given these findings, it is questionable whether self-reports and official data will produce similar conclusions about the prevalence and incidence of arrest.

4.4 SIMILARITY OF RESULTS WITH RESPECT TO CRIMINAL CAREERS

Recently, a growing number of studies have examined the extent of agreement across self-report and official data sources in regards to key criminal career dimensions. Most of this research compares different domains of criminal behavior (i.e. self-reported offending versus official arrest, conviction, or court referral), while the present study examines the same criminal outcome (arrest). In a recent article, Brame and colleagues (2005) provide one of the first systematic analyses of whether key research findings from life-course criminology are dependent upon a certain type of data source. More specifically, they examine the association between past and future offending in both self-report offending data and official data (police contact and arrest), and find evidence across data sources for both population heterogeneity and state dependence explanations for continuity in behavior.

In another relevant study, Farrington and colleagues (2003, p. 954) compare self-report offending data from the Seattle Social Development Project with court referral data and conclude, that "present analyses indicate that criminal career research based on self-reports would yield different theoretical implications from research based on official records." Specifically, they find that the prevalence of both self-reported offending and court referral increase with age, though the increase in court referrals with age is much steeper. Not surprisingly, they find that prevalence of offending is greater than prevalence of court referral. Farrington and colleagues also find much continuity in criminal behavior over time, in both self-report and court referral data, though they observe that the continuity is greater with court referrals. Additionally, they find that the frequency of

self-reported offending is greater than the frequency of court referrals, and that the frequency of offending increases with age, but that the frequency of court referrals does not. As one would expect, onset of self-reported offending occurs earlier than onset of court referral. This finding of earlier onset in self-reports has been replicated in numerous other studies (see, e.g., Moffitt et al. 2001; Loeber, Farrington, and Petuchuk 2003), though one study did find consistency across data sources in terms of age of onset when analyses were restricted to onset of serious offending (Kazemian and Farrington 2005). Interestingly, Farrington and colleagues (2003) find that early onset predicts a high yearly frequency of subsequent court referrals, but not a high frequency of self-reported offending.

Finally, in perhaps the only other study besides the present one that compares self-reports of arrest and official arrest data longitudinally, Thornberry and Krohn (2003) find a high degree of concordance between self-report and official data. Using data collected as part of the Rochester Youth Development Study, these authors conclude that subjects with an official contact with the police or an arrest record were generally willing to report that contact during the self-report interview. Moreover, the degree of concordance is stable across waves of data collection.

These prior studies offer a compelling examination of the dependency of criminal career and life-course research findings on data types. That said, in addition to confirming these prior research findings, the present study provides a number of unique contributions beyond what has already been learned from comparisons of longitudinal self-report and official data. First, whereas self-reported *offending* data is usually

compared with official data in these prior studies, the present study focuses on comparing the same measure of crime (i.e. arrest) for the same subject across two data types. It has long been recognized that self-reported offending and official data actually measure different "domains" of behavior, where official data tends to capture more serious behavior than self-report offending measures (Hindelang, Hirschi, and Weis 1979). Thus, it is necessary to determine whether comparative findings described in preceding paragraphs hold when the same domain of behavior (i.e. arrest) is examined across data sources. Second, in addition to comparing findings on key criminal career dimensions, the present study also examines whether the key correlates of arrest and key predictors of arrest function similarly across the two arrest measures. The next section introduces the relevance of a number of these key predictors.

4.5 PREDICTORS OF YOUTH CRIME

Family effects, peer effects, and neighborhood effects all have been given prominent focus in criminological research. Sampson and Laub's (1993) groundbreaking reanalysis of the Gluecks' data offers a framework for examining the effect of these factors on youth crime. Sampson and Laub (1993, p. 7) argue that structural context (e.g. social class, race, ethnicity, neighborhood poverty) mediated by informal social controls (e.g. family supervision, parent-child conflict, deviant peer associations) explains delinquency in childhood and adolescence. Regarding the family, Loeber and Stouthamer-Loeber (1986) provide an extensive review of the family predictors associated with juvenile crime. These authors conclude that family socialization

variables, like parent-child conflict and supervision, are among the most important predictors of juvenile delinquency.

Moving to peer influence, a great deal of research has examined the effect of peers on individuals' criminal behavior. This 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). In his classic statement on differential association, Sutherland (1947) makes the argument that criminal behavior is learned in intimate social groups. In contrast, Glueck and Glueck (1950) argue that the association between peers and crime arises from a selection effect (i.e. birds of a feather flock together). In a more recent study which is relevant for the present analysis, Warr (1993) examines the relation between age, crime, and peer influence, and finds that the relation between age and crime is weakened after controlling for peer influence.

Over the past 20 years, the neighborhood effects approach to studying social phenomena has gained widespread popularity. Arguably, this current popularity owes its rise to the influence of Wilson's (1987) research on the detrimental effects of residing in concentrated poverty and social isolation, although, criminological research has long emphasized the role of ecological context in influencing criminal behavior (see, e.g., Shaw and McKay 1942). The present study focuses on the role of neighborhood disadvantage as a predictor of criminal behavior. A number of studies have likewise examined the effect of neighborhood disadvantage, and consistently find that

neighborhood disadvantage is a positive predictor of crime (for recent discussions, see McNulty and Bellair 2003; Sampson, Morenoff, and Raudenbush 2005).

In sum, the broader purpose of this chapter is to examine whether inferences about the adolescent life-course of crime are dependent upon the way crime is measured. As such, three main research questions guide this analysis: 1) Are there differences across data sources on the same sample of respondents in terms of the prevalence, frequency, onset, and continuity of arrest? 2) Is the association between key demographic correlates of arrest (e.g. age, gender, and race/ethnicity) and arrest trajectories similar across the two data sources? 3) Are inferences about key predictors of arrest (e.g. neighborhood structure, family structure, family process, peer influence) similar across data sources?

4.6 DATA AND RESEARCH DESIGN

The study sample is drawn from the Project on Human Development in Chicago Neighborhoods (PHDCN) Longitudinal Cohort Study. This chapter focuses on the 12, 15, and 18 age cohorts. Detailed information about the sample, and the PHDCN data more generally, are provided in Chapter 3.

4.6.1 Dependent Variables

Two measures of arrest are used as outcome variables in both descriptive and inferential analyses. At the first PHDCN interview, youth subjects were asked to report whether they had been arrested during the previous twelve-month period. If so, they were then asked when and where the arrest occurred, the reason for the arrest, and whether

they went to court for the arrest. At the second and third interviews, youth subjects were asked to report any additional arrests since the first interview date. The present analysis uses a subset of the total sample (N = 1775) who consented to have their official records searched. This subset showed no significant difference in the average number of self-reported arrests per wave compared to those youth subjects who did not consent to have their criminal records searched (F = 0.925; df = 1, 2149).

Official arrest data were provided by the Chicago Police Department (CPD) and the Illinois State Police (ISP), and cover the time span from 1995 to 2001. Both juvenile and adult arrest data were provided for arrests recorded throughout the State of Illinois. Further description of these data and methods used to link CPD and ISP data with the PHDCN cohort data are provided in Chapter 3.

With the official data, person-year observations were constructed by calculating the age of a given subject as of December 31st of a given year, and summing the count of arrests over the previous twelve-month period. With seven years of data, there are exactly seven official observations per subject. For the self-report data, person-year observations start with the subject's age at the first wave of data collection. Calculating arrests per person-year is possible given that subjects were asked at waves 2 and 3 about the timing of arrests since wave 1. On average, there were five years between the first and third interview. For individuals with 5 years between their first wave self-report and third wave self-report, there would be a total of 6 self-report observations for those subjects. The maximum number of self-report observations for any subject was seven. If subjects did not report at wave 2 and wave 3, then they only have one self-report observation. If a

given subject reported at wave 3 but not wave 2, then she or he would still have a full set of observations given that the wave 3 arrest question asked subjects about arrests since wave 1. Note that self-report data were cleaned to eliminate duplicate arrest reports.

4.6.2 Independent Variables

Included in the statistical models are a number of individual-, family-, and neighborhood-level predictors of arrest. Key demographic factors include age, cohort, gender, and race and ethnicity. Five dummy indicators of race and ethnicity are employed in the analyses: black, Mexican, Puerto Rican/Other Latino, other race, and white. Black, white, and other race groups are all non-Latino. Two measures of family structural characteristics are included as explanatory predictors of arrest: family socioeconomic status and parental marital status. Marital status is described with a binary variable reflecting the marital status of a youth's biological parents.

Finally, neighborhood concentrated disadvantage is included in statistical models, along with three self-reported scales of family process and peer influence, all of which are derived from the wave 1 PHDCN survey: family supervision, parent-child conflict, and peer deviance. Construction of these measures is described in Chapter 3.

4.7 STATISTICAL MODELS

Studies using multiple data sources or informants often produce results separately for each data source. However, there is considerable benefit to combining data sources in one model in order to evaluate the similarity of results across data sources. In addition to

descriptive statistics, this chapter uses what is known as a bivariate outcome modeling approach to compare arrest measures, which combines official and self-report data into a single statistical model (for a detailed discussion of this modeling approach, see Horton and Fitzmaurice 2004; Kuo et al. 2000). For the purposes of this chapter, the primary reason for using this modeling strategy is in order to statistically compare the size of coefficients of the same predictor of arrest, where arrest is measured by both self-report and official data. For example, in analyses to follow, I compare the size and direction of the coefficient for family supervision as a predictor of arrest for both self-reported arrest and official arrest. If there is a significant difference in the size and direction of the coefficient, then it can be concluded that the effect of family supervision on arrest is dependent upon which data source is under investigation.

With the bivariate modeling approach, a baseline quadratic growth model is first specified, with arrest as the outcome, and age and a squared age term as covariates. In the analyses, age is centered at 18. This age was chosen because it provides an overlap in the observation periods for all cohorts (i.e. age 18 is the end of the observation period for the 12 year-old cohort, and the beginning of the observation period for the 18 year-old cohort). With this centering, model coefficients are used to assess the expected count of arrests at age 18 and the rate of change in arrest at age 18. The baseline model is first expanded with the addition of demographic covariates, followed by family structural characteristics. The final model also includes neighborhood characteristics, and family process and peer influence measures.

Each model just described assumes that Y_{tij}, which is the observed number of self-reported or official police arrests for person *i* in neighborhood *j* in the twelve months immediately prior to age *t*, follows an overdispersed Poisson distribution. Thus, the data are structured to where each observation represents a person-year, with a total of *t* observations per person *i*. In each model, random intercepts are added in order to account for the correlation among observations within the same subject, and the correlation between subjects living in the same neighborhood. Given the addition of random intercepts, each subject has an estimated arrest trajectory. This modeling strategy is undertaken in order to assess the individual change in arrest with age. Furthermore, random effects account for the heterogeneity between subjects (and neighborhoods) due to unobserved factors. Random slopes (i.e. for the age terms) were also included in preliminary analyses of all models described in this paper. However, results indicate that there is no significant variability across subjects and neighborhoods in the growth or change in arrests at age 18. Therefore, in the interest of parsimony, all analyses reported in the paper were estimated only with random intercepts.

With the Poisson distribution, it is assumed that the conditional variance and mean are equal, though this is often not the case with arrest data. Thus, a dispersion parameter is added to all models in order to allow for conditional variance that is larger or smaller than expected.

In Eq. (4.1), a total of four random effects are included in a bivariate outcome model that combines data sources instead of treating them separately. Two random intercepts are specified for self-report arrests (one at the person-level and one at the

neighborhood-level), and two separate random intercepts are specified for the official police arrests. Therefore in these models, each subject has two trajectories, one for self-report data and one for official police data.

Model 1 in analyses to follow displays results estimated by Eq. (4.1), where arrest from both data sources is modeled as a function of age:

$$\begin{aligned}\log \mathrm{E}(Y_{tij}) = {} & \pi_{1ij}SR_{tij} + \pi_{2ij}POLICE_{tij} + \pi_{3ij}SR_{tij}*(AGE-18)_{tij} + \\ & \pi_{4ij}POLICE_{tij}*(AGE-18)_{tij} + \pi_{5ij}SR_{tij}*(AGE-18)^2_{tij} + \\ & \pi_{6ij}POLICE_{tij}*(AGE-18)^2_{tij} + r_{1ij}SR_{tij} + r_{2ij}POLICE_{tij} + u_{1j}SR_{tij} + \\ & u_{2j}POLICE_{tij} \end{aligned} \quad (4.1)$$

where

SR_{tij} is an indicator function taking the value of 1 when the record for person i in neighborhood j at age t is from PHDCN self-report data, and 0 otherwise;

$POLICE_{tij}$ is an indicator function taking the value of 1 when the record for person i in neighborhood j at age t is from ISP or CPD police data, and 0 otherwise;

r_{1ij} and r_{2ij} are the two person-level random effects, one for the self-report arrest trajectory and one for the official arrest trajectory;

u_{1j} and u_{2j} are the two neighborhood-level random effects, which capture the dependence of the respective measures of arrest between residents in the same neighborhood.

Eq. (4.2) shows that the expected count of arrests at age 18 is modeled as a function of additional covariates, where $X_{ij}\beta$ is a vector of demographic, family, and peer characteristics, and $W_j\gamma$ represents neighborhood concentrated disadvantage:

$$\begin{aligned}\pi_{1ij} &= \mu + X_{ij}\beta + W_j\gamma \\ \pi_{2ij} &= \mu + X_{ij}\beta + W_j\gamma \end{aligned} \quad (4.2)$$

The two linear and two quadratic growth terms are also modeled as a function of demographic, family, peer, and neighborhood characteristics, where k references coefficients 3, 4, 5, and 6 from Eq. (4.1):

$$\pi_{kij} = \mu + X_{ij}\beta + W_j\gamma \quad (4.3)$$

As noted, one important advantage of using bivariate models is that they can be used to test whether the size of the effect of predictors of arrest are a function of the data source utilized. As such, a series of hypothesis tests will be used to compare the coefficients from Eqs. (4.2) and (4.3) above. For comparison of the *q* demographic, family, and peer coefficients:

$$H_0: \beta_{1q} = \beta_{2q} \tag{4.4}$$

For comparison of the neighborhood concentrated disadvantage coefficients:

$$H_0: \gamma_1 = \gamma_2 \tag{4.5}$$

4.8 RESULTS

4.8.1 Descriptive Summary of Arrests

Tables 4-1A and 4-1B present a descriptive summary of self-reported and official arrests, with an emphasis on prevalence and frequency. A total of 341 PHDCN youth subjects (19.2% of the sample) from cohorts 12, 15, and 18 were officially arrested at least once from 1995 to 2001. Of this number, 148 were arrested one time (8.3%), and the remainder arrested at least twice during the time frame. A total of 1,093 arrests of the PHDCN youth were officially recorded in the State of Illinois from 1995 to 2001, which equates to an average of 3.21 arrests for those subjects ever arrested. The average age of first arrest among those 341 subjects ever arrested was 18.3. The partial correlation (controlling for cohort) between age of first official arrest and the total number of arrests equals -0.381 ($p < 0.001$), and the partial correlation between age of first arrest and imprisonment in the Illinois Department of Corrections equals -0.220 ($p < 0.001$). These

correlations suggest that earlier onset of crime, in this case measured by arrest, is related to persistent and serious criminality. This finding concerning the relation between onset and persistent and serious criminality is consistent with some of the classic studies in criminology (e.g. Glueck and Glueck 1950; McCord 1978; Wolfgang, Figlio, and Sellin 1972).

In comparison, 21.4% of the sample self-reported at least one arrest across the three waves of data collection. Of this number, 9.5% reported one total arrest across the three waves. The remainder reported being arrested two or more times. A total of 1,173 arrests were self-reported by a total of 379 arrestees, for an average of 3.09 arrests among those ever arrested. The average age of first arrest among those subjects ever arrested was 17.2, which is statistically different than the onset of arrest in the official data ($F = 40.757$; $df = 1, 719$). The partial correlation between age of first self-reported arrest and the total number of arrests equals -0.248 ($p < 0.001$), but the partial correlation between age of first arrest and imprisonment in the Illinois Department of Corrections is not significant ($r = -0.080$, $p = 0.121$).

Comparing self-report and official data reveals that more subjects reported being arrested than actually found in the official data, and more arrests were reported. However, some of the over-reporting, though not all, is due to reporting of arrests that did not occur in Illinois, which is not captured in the ISP or CPD data. Twenty-four subjects self-reported at least one arrest outside of Illinois, and 38 of the 1,173 (3.2%) self-reported arrests occurred outside of Illinois.

Table 4-1A. Official Arrest Summary by Race/Ethnicity: PHDCN Cohorts 12-18

	Total (N = 1775)	Black (N = 641)	Mexican (N = 560)	Puerto Rican/Other (N = 227)	White (N = 279)	Hypoth. Test	P-value
Number of Arrestees	341	190	74	32	36		
% of Total N	19.2%	29.6%	13.2%	14.1%	12.9%	70.447	0.000
Participation Ratio: African-American to Other			2.2	2.1	2.3		
Number of Arrests	1093	659	223	89	102		
Mean # of Arrests, All Years (Total N)	0.62	1.03	0.40	0.39	0.37		
Mean # of Arrests, All Years (Active Arrestees)	3.21	3.47	3.01	2.78	2.83	0.780	0.539
Frequency Ratio: Black to Other Groups			1.15	1.25	1.22		

Note: Chi-Square tests used to compare mean participation ratios across groups. F-tests used to compare the mean number of arrests across groups.

Table 4-1B. Self-Report Arrest Summary by Race/Ethnicity: PHDCN Cohorts 12-18

	Total (N = 1775)	Black (N = 641)	Mexican (N = 560)	Puerto Rican/Other (N = 227)	White (N = 279)	Hypoth. Test	P-value
Number of Arrestees	379	179	88	39	58		
% of Total N	21.4%	27.9%	15.7%	17.2%	20.8%	29.097	0.000
Participation Ratio: African-American to Other			1.8	1.6	1.3		
Number of Arrests	1173	512	333	116	186		
Mean # of Arrests, All Years (Total N)	0.66	0.80	0.59	0.51	0.67		
Mean # of Arrests, All Years (Active Arrestees)	3.09	2.86	3.78	2.97	3.21	1.509	0.199
Frequency Ratio: Black to Other Groups			0.76	0.96	0.89		

Note: Chi-Square tests used to compare mean participation ratios across groups. F-tests used to compare the mean number of arrests across groups.

In their review of the literature, Blumstein and colleagues (1986) find substantial differences across race on participation in crime, particularly when participation is measured by official data. However, they find that the frequency of arrest is generally comparable across race. Therefore, they conclude that race differences in criminal behavior, whether measured by offending, arrest, or some other outcome, are generally due to differences in participation and not due to differences in frequency. Results from Tables 4-1A and 4-1B point to similar conclusions, though with some differences across data sources. With official arrest data, roughly 30% of the sampled black youth were arrested at some point between 1995 and 2001, compared to roughly 13 to 14% for the other groups (a ratio of roughly 2.3:1). With self-report data, it can be seen that a slightly lower percentage of black youth self-reported an arrest than found in the official data (27.9% versus 29.6%). In contrast, much higher percentages of youth from the non-black groups reported an arrest than found in the official data. The ratio of participation for black youth relative to other groups ranges from 1.3:1 to 1.8:1.

As for the frequency of arrest among active offenders, it can be seen in Table 4-1A that the official arrest frequency for active black arrestees is higher than the frequency for other youth. In Table 4-1B, it can be seen that the frequency of arrest for active arrestees is lower for black youth than all other race and ethnic groups, with the exception of the “Other Race” grouping. However, in all cases there are no statistically significant differences in the frequency of arrest between black youth and youth from the other racial and ethnic groups.

One logical explanation for the finding that the participation and frequency of arrests for black youth are lower in self-report data than official data, while participation and frequency is higher in self-report data for other groups, is because of reporting biases. Much research has questioned whether self-reporting biases are comparable across race. Generally, research confirms that under-reporting is significantly related to race and ethnicity, and that the validity of self-reported delinquency is lower for blacks than whites (Hindelang, Hirschi, and Weis 1981; Huizinga and Elliott 1986; Maxfield, Weiler, and Widom 2000). A further examination of reporting is necessary to untangle the patterns of participation and frequency found in Tables 4-1A and 4-1B.

One hundred fifty-five out of the 341 (45.5%) PHDCN youth officially arrested did not report any arrests in the self-report survey during any of the three interview periods. Furthermore, 195 out of the 379 (51.5%) youth that self-reported arrest did not have an official record during the 1995 to 2001 time period. Put another way, of the 834 subjects (80.8% of the sample) not officially arrested, 195 out of the 834 (23.4%) nonetheless reported being arrested. As reviewed in Section 3, this figure is comparable to what has been found in other studies (Hardt and Petersen-Hardt 1977; Hirschi 1969; Maxfield et al. 2000). Still, there are evident inconsistencies across data sources on exactly which members of the sample were arrested.

Reporting does vary substantially by race and gender, where under-reporting is defined as self-reporting fewer arrests than found in official data and over-reporting is defined as reporting more arrests. Because subjects who were not officially arrested at any point from 1995 to 2001 cannot by definition under-report their arrests, findings

described next are given only for the subset of subjects who were officially arrested at least once at some point from 1995 to 2001. Black youth are significantly more likely to under-report the number of times they have been arrested than non-blacks (X^2 = 5.250, df = 1, p = 0.022), but are not any more or less likely to over-report the number of arrests (X^2 = 1.287, df = 1, p = 0.257). Whites are significantly less likely to under-report than non-whites (X^2 = 7.500, df = 1, p = 0.006), but they are not any more or less likely to over-report (X^2 = 0.066, df = 1, p > 0.500). Mexicans are not any more or less likely to under-report or over-report than other ethnic and racial groups (X^2 = 0.018, df = 1, p > 0.500 for under-report; X^2 = 0.173, df = 1, p > 0.500). Similarly, Puerto Ricans are not any more or less likely to under-report or over-report than other ethnic and racial groups (X^2 = 1.655, df = 1, p = 0.198 for under-report; X^2 = 0.792, df = 1, p = 0.374). Finally, males are significantly more likely to over-report than females (X^2 = 5.406, df = 1, p = 0.020), but are not any more or less likely to under-report (X^2 = 0.010, df = 1, p > 0.500).

Research consistently finds much continuity in criminal behavior with age, such that arrest at one age is highly associated with, or highly predictive of, arrest at subsequent ages (Farrington et al. 2003). This continuity in behavior implies that repeated measures of arrest are positively correlated, and two goals of longitudinal research are to describe the correlation between measures of a dependent variable across multiple time points and to account for the correlation structure. Presented in Table 4-2 are the autocorrelation functions between arrest frequency at different time points for each of the two data sources. Recall that there are exactly seven observations per-person in the official data, and up to seven observations per-person in the self-report data. The first row

of the table displays the correlation between time points spaced one year apart (e.g. between time 1 and time 2). The second row displays the correlation between time points spaced two years apart (e.g. between time 1 and time 3); and so on for subsequent rows of the table. Findings illustrate that the correlations between arrest observations in the official data are substantially greater than in the self-report data. Thus, there is greater continuity in arrest revealed in official data than in self-report data.

Table 4-2. Autocorrelation between Time Points, Self-Report and Official Arrest Counts

Time Lag	Official Arrest	Self-Report Arrest
1	0.459	0.177
2	0.303	0.205
3	0.225	0.107
4	0.168	0.064
5	0.129	0.065
6	0.123	0.005

The descriptive findings just presented answer the first question from Piquero and colleagues (2003), whether the use of different measurement approaches provides similar conclusions about criminal career dimensions. In summary, participation and frequency are higher in self-report data than in the official data except for black youth, and the average age of onset is lower in the self-report data. There is much greater continuity in arrest in the official data. Given these discrepancies across data sources on reporting, prevalence, frequency, onset, and continuity, it is necessary to now determine whether theoretical expectations derived from life-course studies apply equally to self-report and official criminal records.

4.8.2 Results: Within-Person Convergence

Table 4-3 shows results for Models 1, 2, and 3. Findings from Model 1 can be used to determine if the shape of age-arrest trajectories are similar across data sources. Results from Model 1 demonstrate that there is a moderate difference in the initial level of arrest (at age 18) across data sources (the intercepts). It can be seen that there is significant growth in the official trajectory. However, the linear growth coefficient for the self-report trajectory is not significantly different than zero. Importantly, hypothesis tests reveal that the differences in coefficients across outcome variables (i.e. self-reported arrest versus official arrest) are statistically significant. Substantively, these findings suggest that, on average, each individual's self-report age-arrest trajectory is statistically different than her or his official age-arrest trajectory.

To further demonstrate the differences in arrest across data sources, Figure 4-1 displays the expected age-arrest curves for ages 11 to 26, constructed from fitted values.[1] Here, the self-report curve peaks earlier than the official curve, and there is a constant gap between the two curves until around age 20. Also noteworthy is that the self-report trajectory remains fairly flat from ages 18 to 20. This finding visually illustrates why the linear growth coefficient in Model 1 is close to zero for the self-report trajectory. Overall, the two curves appear to have similar shapes up until the peak, but the expected count of arrests is substantially lower with the official data, and the peak of the curve is located to the right of the self-report trajectory. Furthermore, after the peaks, the official trajectory has a much steeper decline in arrest.

[1] All plots of age-arrest trajectories are constructed with fitted values from the Level-1 residual file in HLM.

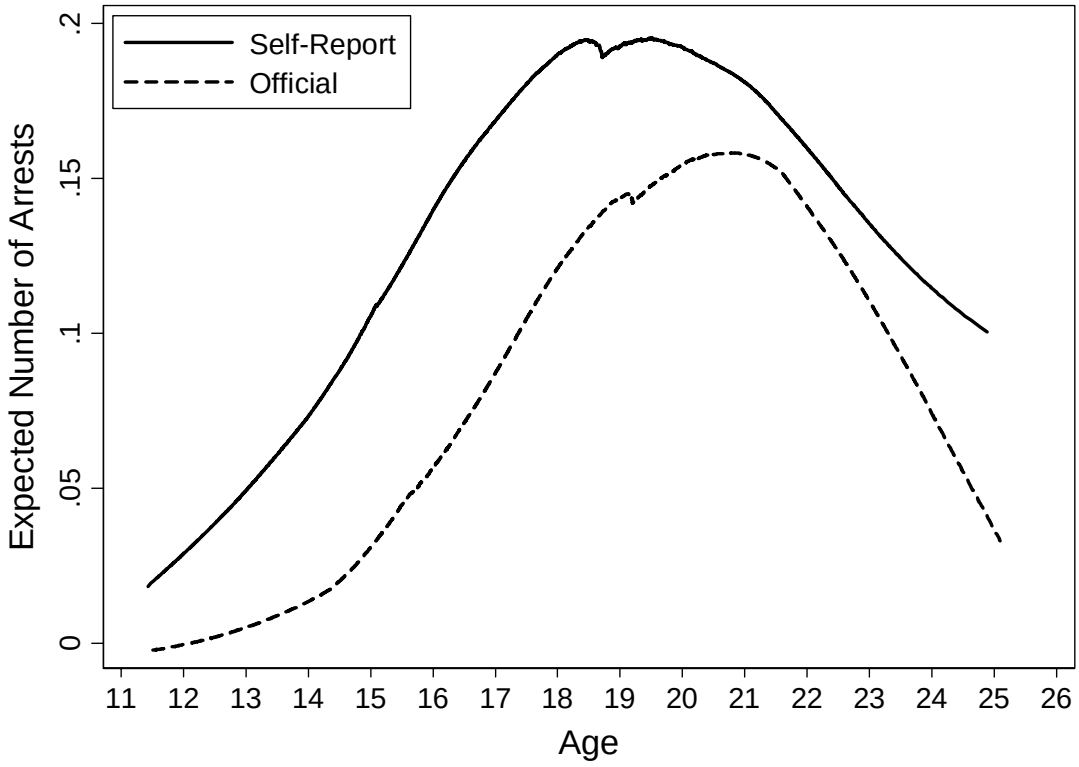
Table 4-3. Demographic and Family Correlates of Age-Arrest Trajectories for Self-Report and Official Measurement Sources, PHDCN Cohorts 12 - 18

	Model 1			Model 2			Model 3		
Fixed Effect	Self-Report Coef.	Police Coef.	Hypoth. Tests Chi-Square	Self-Report Coef.	Police Coef.	Hypoth. Tests Chi-Square	Self-Report Coef.	Police Coef.	Hypoth. Tests Chi-Square
Count of Arrests, Age 18									
Intercept	-3.055 ***	-3.694 ***	56.673 ***	-3.505 ***	-3.932 ***		-3.552 ***	-3.958 ***	
White				-0.676 *	-1.439 ***	8.745 **	-0.438	-1.086 ***	
Mexican				-0.698 ***	-1.400 ***	11.567 **	-0.441	-1.199 ***	
Puerto Rican/Other Latino				-0.661 **	-1.038 ***	1.742	-0.644 **	-1.022 ***	
Other Race				-0.967 *	-2.085 ***	4.996 *	-0.722	-1.866 ***	
Male				1.745 ***	1.739 ***	0.001	1.813 ***	1.799 ***	
Cohort 15				0.106	-0.663 ***		0.114	-0.687 ***	
Cohort 18				0.577	-0.848 ***		0.606	-0.859 ***	
Family SES							-0.022	-0.182 *	5.263 *
Married Parents							-0.798 ***	-0.687 ***	0.016
Age/Growth (per year)									
Intercept	0.030	0.423 ***	389.670 ***	-0.058	0.557 ***		-0.058	0.572 ***	
White				-0.132	0.138	13.717 ***	-0.112	0.072	
Mexican				0.002	-0.064	2.560	0.013	-0.071	
Puerto Rican/Other Latino				0.204	0.082	2.539	0.217	0.098	
Other Race				0.126	0.065	0.169	0.126	0.018	
Male				0.170 **	0.007	11.773 ***	0.176 **	0.010	
Cohort 15				-0.151	-0.011		-0.120	-0.007	
Cohort 18				-0.450	-0.408 *		-0.386	-0.396 *	
Family SES							-0.026	0.042 *	18.021 ***
Married Parents							-0.035	0.060	4.890 *
Age^2									
Intercept	-0.035 ***	-0.085 ***	113.653 ***	0.005	-0.102 ***		0.001	-0.113 ***	
White				-0.008	-0.050	8.238 **	-0.006	-0.036	
Mexican				-0.017	0.008	6.819 **	-0.041 *	0.019	
Puerto Rican/Other Latino				-0.019	-0.069 *	6.369 *	-0.020	-0.069 *	
Other Race				-0.005	0.025	0.727	-0.013	0.052	
Male				-0.003	0.010	1.389	-0.072	0.008	
Cohort 15				0.068	-0.163 ***		0.076	-0.162 ***	
Cohort 18				0.042	-0.019		0.029	-0.014	
Family SES							-0.022 **	-0.002	30.177 ***
Married Parents							0.037 *	-0.041 *	60.881 ***

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

Note: Due to the size of the table, standard errors not shown.

Figure 4-1. Age-Arrest Curves by Data Source, Cohorts 12 – 18



4.8.3 Results: Person-Level Effects

Results from Model 2 in Table 4-3 demonstrate that the expected count of arrest for males is significantly greater than the count for females in both data sources. There are also significant gender differences in the growth of arrests in the self-report data. Hypothesis tests show that there is not a significant difference in the association between gender and the expected count of arrest at age 18 across data sources, but the difference in the relation between gender and change in arrest is significant.

Moving to the issue of race and ethnicity, findings from Model 2 in Table 4-3 reveal substantial differences between black youth and youth from other racial and ethnic

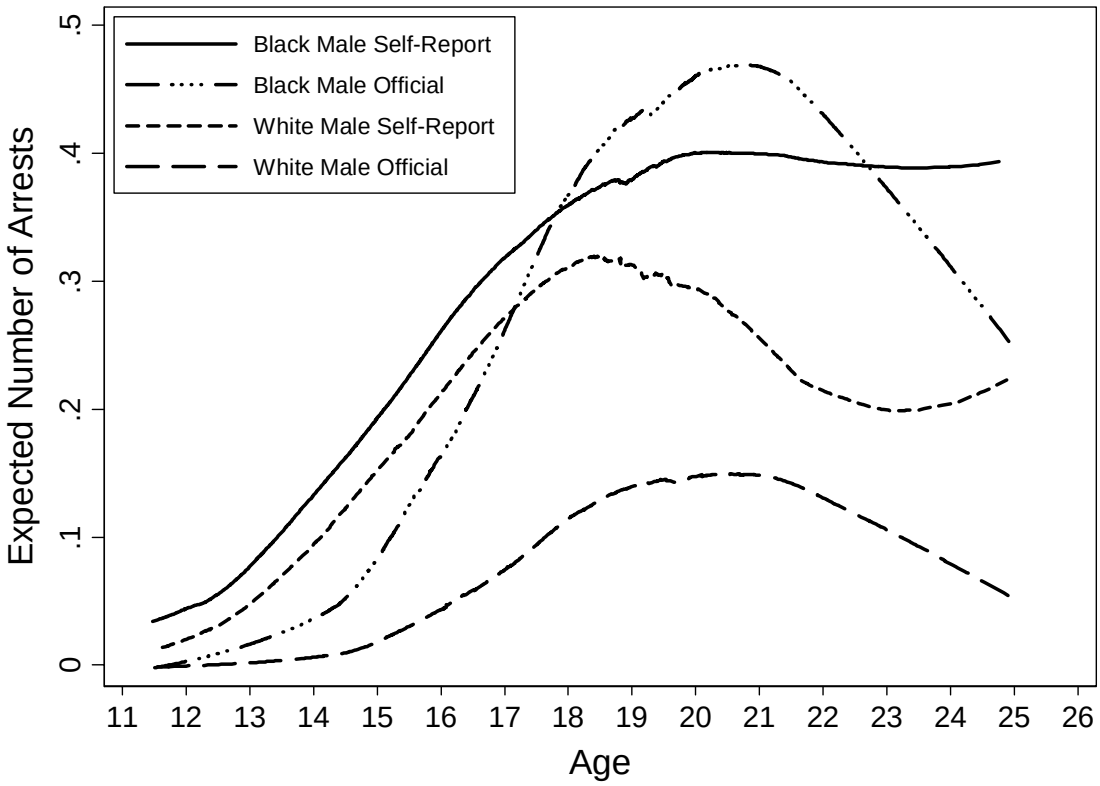
groups on the expected count of arrests at age 18. This finding holds for both self-reported arrests and official arrests. However, the size of the gap in arrest between groups does vary by data source. For example, hypothesis testing reveals that the official arrest gap between white and black youth is significantly greater than the self-report gap (X^2 = 8.745, df =1). In other words, there is significantly less disparity in arrest in the self-report data than in the official data. Thus, inferences about black-white differences in arrest depend upon the type of data examined. The same conclusion is true about the differences between black and other racial and ethnic groups.

Visually, the black-white differences in arrest trajectories can be seen in Figure 4-2, which is a plot of the estimated trajectories for males for each group. This Figure shows that the black-white gap in the expected count of arrests at age 18 is greater in the official data than in the self-report data. It is not until after age 18 that the black and white self-report trajectories diverge. However, even more interesting than the difference in trajectories at age 18 is the overall shape of the trajectories. The black and white official trajectories peak at roughly the same age, but there is a considerable gap in arrests between the two trajectories. These two trajectories are very similar until age 15, and then the official black trajectory abruptly accelerates. With the self-report data, after the black and white trajectories diverge at age 18, the white trajectory has a much steeper decline in arrests, albeit flat by comparison to the official trajectories.

Figure 4-2 also allows for an assessment of the similarities between white self-report versus white official trajectories, and also between the two black trajectories. First, the two black trajectories cross on two occasions. With the white trajectories, the official

trajectory is always lower. Second, the peak count of arrest occurs at roughly the same age in the self-report and official data for blacks, but not for whites. Third, for both blacks and whites, the official data depicts what is generally accepted to be the shape of the age-crime curve, with a sharp increase and rapid decline after the peak level of offending. With the self-report data, the decline in arrests is very gradual for whites and almost non-existent for blacks.

Figure 4-2. Age-Arrest Curves by Data Source, Gender, and Race, Cohorts 12 – 18



Model 2 in Table 4-3 demonstrates that there are significant cohort differences in arrest trajectories in the official data, though not in the self-report data. These findings reveal that, on average, the 12 year-old cohort had significantly more official arrests at the age of 18 than did the 15 and 18 year-old cohorts, when members of these cohorts were age 18. The next section addresses potential reasons for these findings.

Results from Model 3 in Table 4-3 reveal that there is a significant negative association between family socioeconomic status and the expected arrest count at age 18 in official police data, but not in self-report data. While hypothesis testing reveals that the association between family socioeconomic status and arrest does vary across data sources, the association between the marital status of biological parents and arrest at age 18 does not vary across data types. With both data sources, there is a substantial difference in the count of arrests between youth with married parents and those without married parents.

Results to this point suggest that there are some key differences across data sources in the patterning of arrest over the course of adolescence and early adulthood, and also key differences in the association between arrest and both demographic and family structure correlates of arrest. What remains unanswered is whether the key predictors of arrest are similar across data sources. Even if the onset, level, and decline in arrest are different for self-report and official arrest data, the predictive power of family process, peer influence, and neighborhood characteristics may still be comparable across data types.

Results presented in Table 4-4 concentrate on the intercept term in Eq. (4.2). Thus, analyses focus on assessing the comparability of predictors of arrest at age 18. Note that analyses exclude data from cohort 18, as self-report measures of family processes were not collected for this cohort. Results illustrate that the key predictors of arrest function similarly across arrest measures, with the exception of the role of deviant peers. It can be seen that family supervision has little effect on either measure of arrest, after controlling for other relevant predictors. Parent-child conflict is a significant predictor of both measures of arrest, indicating that youth subject to greater levels of conflict and abuse are more likely to be arrested than youth with comparably lower levels of family conflict. Results also illustrate that official police arrest is significantly more likely for youth who live in disadvantaged neighborhoods, after controlling for the composition of those neighborhoods. However, neighborhood disadvantage is not significantly associated with self-reported arrest. That said, the size of the neighborhood disadvantage coefficient is not significantly different across data sources. Finally, results in Table 4-4 show that association with deviant peers increases the likelihood of arrest across both arrest measures. However, the coefficient is significantly greater for the self-report measure of arrest than for the official measure. Thus, the association between deviant peers and arrest is greater in the self-report data.

Table 4-4. Family, Peer, and Neighborhood Predictors of Arrest, PHDCN Cohorts 12 - 15

	Model 4				
	Self-Report		Police		Hypoth. Tests
Fixed Effect	Coef.	(SE)	Coef.	(SE)	Chi-Square
Expected Count of Arrests, Age 18					
Intercept	-2.713	(0.114) ***	-2.882	(0.112) ***	
White	0.183	(0.266)	-0.442	(0.244)	
Mexican	-0.040	(0.228)	-0.513	(0.213) *	
Puerto Rican/Other Latino	-0.330	(0.228)	-0.881	(0.234) ***	
Other Race	-0.854	(0.299) **	-0.891	(0.442) *	
Male	1.041	(0.138) ***	1.489	(0.177) ***	
Cohort 15	-0.085	(0.177)	-0.991	(0.178) ***	
Family SES	-0.052	(0.060)	-0.081	(0.072)	
Married Parents	-0.340	(0.180)	-0.818	(0.165) ***	
Family Supervision	-0.124	(0.101)	-0.041	(0.100)	0.539
Parent-Child Conflict	0.339	(0.091) ***	0.277	(0.095) **	0.350
Deviant Peers	0.656	(0.086) ***	0.295	(0.088) ***	10.333 **
Neighborhood Disadvantage	0.118	(0.110)	0.220	(0.103) *	0.582
Age/Growth (per year)	0.063	(0.069)	0.464	(0.042) ***	
Age^2	-0.027	(0.013) *	-0.105	(0.019) ***	

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

Note: Unit of analysis is the person-year, and the outcome is the person-year count of arrests.

4.9 DISCUSSION AND IMPLICATIONS

The primary objective of this chapter was to compare and contrast inferences about the age-arrest relation across data sources, and to examine whether the association with key covariates and predictors is the same across data sources. Findings reveal a number of similarities and differences across data sources.

4.9.1 Descriptive Summary of Arrest

Addressing the research questions posed at the outset of the paper, descriptive results indicate that more respondents self-reported an arrest (21.4% of the sample) than found in the official data (19.2%). Frequency of arrest is also higher in self-report data than in the official data except for black youth, and the average age of onset is lower in the self-report data. Furthermore, there is much greater continuity in arrest in the official data. Results from the bivariate model analysis (as shown in Figure 4-1) also show a wide gap in the average age-arrest trajectories across data sources, particularly until the age of 21. Thus, self-report and official data yield contrasting inferences about the age-arrest relation, in the sense that the expected number of yearly arrests is statistically different. Additionally, the peak age of arrest is later for the official data, and the decline following the peak of the age-arrest curve is much steeper. It should not be overlooked that 45.5% of youth officially arrested did not report any arrests in the self-report survey during any of the three interview periods, and that 23.4% of those subjects without an official record nonetheless self-reported being arrested. Taken together, these results imply that self-report indicators of arrest utilized in this study likely suffer from a number of problems common in self-report survey designs, namely response falsification and recall error. Furthermore, the use of aliases may account for a portion of the instances when subjects self-reported an arrest that was not contained in official data.

4.9.2 Correlates and Predictors of Arrest

Results suggest that there are some significant and substantial differences in the correlates of arrest. While race and ethnicity tend to be strongly associated with both self-reported and official arrest, the gap in the expected count of arrest between black youth and other youth is significantly greater in the official data. Additionally, results presented in Tables 4-1A and 4-1B reveal that participation and frequency of arrest are greater in the official data than in the self-report data for all groups except for blacks. One plausible conclusion to draw from these findings is that under-reporting is relatively more severe for black youth, which is a conclusion consistent with prior research (Hindelang et al. 1981; Huizinga and Elliott 1986). Findings also reveal that, for SES, there is a significant negative association with the initial level of arrest in official data, but not in self-report. The association between the marital status of parents and arrest at age 18 does not vary across data types.

As for the family, peer, and neighborhood predictors, findings demonstrate that the effect of family supervision, parent-child conflict, and neighborhood disadvantage appear to operate similarly across arrest measures. However, the effect of deviant peers on arrest at age 18 differs across data sources, such that the association between deviant peers and arrest is much greater for self-reported arrest. Still, association with deviant peers is a significant predictor of both measures of arrest, so the difference is simply one of magnitude.

Findings reveal significant cohort differences in arrest in the official data, with the youngest cohort having more predicted arrests at age 18. Yet, it reasons that the opposite

would be true given the decline in crime in the 1990s, which is the time frame of the data. One potential reason for this finding is reform of the juvenile justice system in Illinois. The Illinois Juvenile Justice Reform Act of 1998 made a number of changes to the way juvenile arrestees are processed, which may have influenced the reporting of arrests even if the actual number of arrests (reported and unreported) remained the same. For example, disposition of juveniles arrested for a crime are handled a number of ways by juvenile police officers, who generally decide between issuing a "station adjustment" or referring the case to juvenile court. A station adjustment is an informal handling of arrests for youths with a limited prior history of delinquency, where the adjustment most often leads either to the unconditional release of the youth without any prosecution or supervision, or to the conditional release of youth with a community service or supervision component stipulated. Reforms in 1998 introduced a distinction between formal and informal station adjustments, and put a limit on the number of station adjustments a juvenile could receive (Illinois Criminal Justice Information Authority 2005). Whether these or other changes altered reporting practices by police is unknown, but it offers one potential reason for why there were significantly more officially reported arrests for the 12 year-old cohort at age 18 than the other cohorts. Furthermore, this example offers one justification for combining data sources when examining arrest. Policy reforms and changing police practices can potentially create inconsistencies in official arrest data. Self-report data can then be used to examine whether official arrest patterns do show any irregularities (e.g. significant cohort differences).

In sum, descriptive findings illustrate that a sizable number of youth self-report being arrested without having a corresponding arrest record, and a sizable proportion of those youth with an official arrest record fail to self-report that they had been arrested. Results also illustrate that the age-arrest relation and the association between demographic characteristics and arrest tend to vary across the two data sources. That said, despite significant differences across the two arrest measures on many criminal career dimensions, the effects of family supervision, parent-child conflict, and neighborhood disadvantage are not dependent upon the type of arrest data researchers choose to utilize. In other words, even if there are inconsistencies across arrest measures on who was arrested, when, and how often, it is still the case that arrestees are more common in abusive families who reside in disadvantaged neighborhoods. At a more general level, results suggest that research questions designed to address within-individual change in crime may produce divergent findings across data sources. However, research questions that aim to explain between-person variability in crime are more apt to produce similar results across official and self-report crime measures.

4.9.3 Future Research

Findings presented in this chapter are suggestive of numerous extensions. First, the present chapter has provided a partial glimpse as to whether theoretical expectations derived from life-course studies apply equally to self-report and official criminal records by examining the family, peer, and neighborhood predictors of arrest in late adolescence. Future research should proceed by examining whether the effects of predictors during

adulthood are similar across data sources. More generally, researchers should examine whether the factors influencing the processes of persistence of and desistence from crime are similar across data sources.

Second, while many studies have used official records as a check on reporting in self-report surveys, particularly under-reporting, little has been done to assess how reporting bias varies over time (an exception is Thornberry and Krohn 2003). If an individual's under- or over-reporting is stable over time, then it will not affect inferences about the shape of her or his self-reported trajectory. If reporting is a function of time or age, then inferences about the shape of the age-arrest curve may be biased. Recall that blacks are more likely to under-report arrest relative to other groups, and evidence from Figure 4-2 shows that the expected number of self-reported arrests for blacks is lower than official arrests at the peak of their arrest trajectories, from age 18 to 22. One logical conclusion that follows from these findings is that under-reporting is more severe for blacks at around the peak arrest level. Further research is needed to determine how reporting biases vary over time.

A third extension relates to the divergence in the prevalence, incidence, onset, and continuity of arrest across data sources. Much attention and debate in recent years has been placed on defining typologies of criminals, for example chronic versus low-rate offenders. In one typology, Moffitt (1993) argues that there are developmentally distinct groups of offenders (i.e. adolescent-limited and life-course persistent), with each group having a distinct developmental etiology and associated risk factors. Other researchers argue that it is impossible to define such groupings prospectively based on a set of

childhood risk factors (Laub and Sampson 2003). Regardless of whether chronic offenders can be prospectively identified, research has consistently shown that most crimes are committed by a small group of offenders (see, e.g., Wolfgang et al. 1972). Nevertheless, because of differences in the prevalence, incidence, and onset of arrest in self-report versus official data, one could question whether the identification of chronic offenders would be the same across data sources. The same is true for finding other offending types (e.g. late onset, desisters, persisters, intermittent offenders). Dunford and Elliott (1984) provided perhaps the first comparison across data sources on the grouping of subjects into criminal career typologies, and found stark inconsistencies across data sources as to whether individuals were classified as career offenders, non-career offenders, or non-offenders. However, Dunford and Elliott's typology is somewhat crude, in that they defined career offenders as those youth who committed offenses for just two or more consecutive years. Use of statistical tools like finite mixture models (Nagin and Land 1993) make it possible to identify approximate criminal types from longitudinal data without having to arbitrarily define the number of criminal types in advance, or the number of offenses and the duration of criminal activity. Future research on offender typologies using such advances in methodology and statistical tools should examine whether findings are a function of the type of crime data used (i.e. self-report or official).

Clearly more research must be done examining whether inferences about criminal careers are robust to the type of data used, in this case self-report versus official arrest. Findings suggest that there are differences across data types, and that the integration of both data sources is beneficial in order to understand the life-course of crime.

CHAPTER 5

EXAMINING THE DIVERGENCE BETWEEN DIFFERENT MEASURES OF SCHOOL DROPOUT

5.1 INTRODUCTION

In the last chapter, I compared self-report and official indicators of arrest to determine if the selection of a particular data source for the dependent variable in empirical analyses ultimately influences inferences about the predictors of arrest. In the present chapter, I compare two different measures of school dropout, though in this chapter both outcome measures derive from official data sources (i.e. administrative records from the Chicago Public Schools). There are numerous sources of bias in the computation of dropout measures, both in tracking an individual's movement through the education system and in computing aggregate dropout statistics for an individual school, district, or state. Emphasis in this chapter is upon assessment of dropout at the individual-level, though for review purposes I will highlight some of the potential biases with aggregate dropout statistics.

5.2 AGGREGATE DROPOUT STATISTICS

Just as with the measure of arrest, it is debatable how exactly to measure dropout, which is due in large part to difficulties associated with tracking student movement over time and deciding what type of aggregate statistic accurately portrays the prevalence to which a given cohort of students drops out of school. For instance, an alarming report recently published by Harvard University's Civil Rights Project brings to light a number

of inconsistent practices that occur in the reporting of school dropout and graduation statistics by school districts, states, and the federal government, and the extent to which erroneous reporting ultimately leads to misleading claims about the magnitude of school dropout in the United States (Orfield et al. 2004). An example will serve to highlight some of the key points of the Civil Rights Project's report. Orfield and colleagues compute the public school graduation rate for black students in the State of Texas in 2000-2001 to be 55.3% (2004, p. 69), but they remark (2004, p. 7) that the State of Texas reports an annual dropout rate of merely 2.6% for black youth for the 1999-2000 school year and 1.8% for the 2000-2001 school year, per the Texas Education Agency (TEA) definition of dropout (see also Texas Education Agency 2002, p.1; Texas Education Agency 2004, p.1). With the TEA definition, the dropout rate is computed as the number of state public school dropouts divided by the total number of students *served* during the school year, multiplied by a factor of 100 (Texas Education Agency 2002). The State of Texas reports a second dropout rate, according to the definition used by the National Center for Education Statistics (NCES). In the case of black youth, the NCES dropout rate was 6.8% for the 1999-2000 school year, and 5.4% for the 2000-2001 school year. With the NCES definition, the dropout rate is computed as the number of state public school dropouts divided by the total number of students enrolled on October 1 of the school year, multiplied by a factor of 100 (Texas Education Agency 2002). The NCES formula is the so-called "gold standard" for dropout reporting, but this formula clearly produces divergent dropout estimates relative to the TEA formula.

In essence, the denominator of the TEA measure is inflated. Every student served during the school year is counted in the denominator, even if a given student is officially enrolled in another school system outside of the State of Texas on October 1 or for most the school year. The bias in the TEA dropout measure is potentially even more alarming in the instance where the state public schools see a temporary influx of a massive number of students. For instance, the relocation of Gulf Coast residents to the State of Texas following Hurricane Katrina in the fall of 2005 led to a substantial increase in the number of students *served* by the State of Texas during the 2005-2006 school year. Some of the former Gulf Coast residents surely have become permanent enrollees of Texas public schools, but many others were temporarily served by the state. Regardless, both types of students are used in dropout calculations, meaning that the 2005-2006 TEA dropout rates will ultimately be even more misleading than in previous years.

A few examples from the Chicago Public Schools can also serve as examples of the myriad ways dropout statistics are computed. One common dropout statistic utilized is the cohort dropout rate, defined as the percent of students from a given cohort dropping out of school by a specific age or before a certain grade level. One issue with cohort rates is how to define the cohort grouping. The Chicago Public Schools defines a cohort by grade, such as those students who are first-time ninth grade students at the beginning of a given school year (Allensworth and Easton 2001). The Consortium on Chicago School Research (hereafter Consortium), an independent research group that performs academic research on Chicago-area schools, finds this method problematic given substantial retention of 8th graders in the Chicago Public School system. Given that a considerable

number of CPS students are retained in the 8th grade each year, the composition of the typical 9th grade entering class has a large number of underperforming students who are both older and more likely to drop out than the average student. Consortium researchers argue that it is more appropriate to define cohort by age because decisions to drop out are guided more by age related factors than grade factors (e.g. by law, a student must be 16 years old to drop out, but reaching a certain grade level is not a requirement) (Allensworth and Easton 2001). Defining a cohort by age refers to the grouping of students who reach a certain age by September 1 of a given year.

Another issue with CPS dropout statistics is whether figures should reflect a one-year dropout rate (i.e. the percent of students that dropped out of school in a given year), or reflect a student's progression through the educational system over time (i.e. the percent of students who dropped out of school before age 20). CPS computes both types of measures. In the mid to late 1990s, the one-year dropout rate hovered around sixteen percent for the Chicago Public Schools, but the percent of ninth graders that dropped out after four years of high school was well over forty percent (Allensworth and Easton 2001). Given the contrast in dropout prevalence, it is important to qualify which measure is being utilized when addressing the issue of dropout as a social problem. The issue here is one of how to best utilize the data, and report on the data.

5.3 INDIVIDUAL-LEVEL DROPOUT STATISTICS

While there are a number of issues with deciding what is the optimal method of computing aggregate dropout statistics, the process of determining whether a specific

student has dropped out of school is also fraught with ambiguity and data issues. Orfield and colleagues (2004) highlight a number of individual-level issues with the computation and reporting of dropout statistics. They note that even the National Center for Educational Statistics (NCES) formulas drastically underestimate the number of school dropouts. One central reason for underestimation is that school districts tend to lose track of students, and report that "lost" students have simply relocated and not dropped out.

Dropout statistics in the Chicago Public Schools are also subject to potential biases associated with deciding how to treat "lost" students. When CPS students leave school prior to graduation, their administrative records are updated with available information on their movement through the educational system. For instance, if a student transfers to a school outside of the Chicago Public School system, CPS updates the record as to the student's location once the transfer school puts in a request to receive the student's transcript. Data potentially becomes biased when CPS never gets any information on where a student supposedly transferred. In these types of situations, it is an open question whether the student dropped out of school, or really did transfer to a non-CPS school. Another common occurrence is when students neglects to tell CPS that they are transferring, and unless CPS receives a transcript request from another school, there is no information as to whether students should be marked as dropouts or transfers. These are but two examples that suggest that longitudinal data on student movement in and out of the Chicago Public Schools are subject to many data inaccuracies which makes it difficult to determine who actually dropped out of school before ever graduating.

Given the potential for computation and reporting inaccuracies and inconsistencies, it is important to ask whether the correlates of school dropout are dependent upon measurement type. This chapter addresses the issue of convergence across different definitions of dropout. To do so, I examine the prevalence of school dropout in the PHDCN sample across two different dropout measures, and then examine the association between school dropout and a number of relevant predictors of dropout. For comparison purposes, I utilize two different measures of official school dropout, as constructed from Chicago Public Schools administrative records.[1] Given the NCES practice of excluding "lost" students from official reporting of dropout rates, I utilize one measure of official dropout that does *not* treat lost students as dropouts, and a second measure that *does* define lost students as dropouts. In sum, the objective of this chapter is to determine if conclusions about the prevalence of school dropout are dependent upon the type of dropout measure analyzed, and whether the correlates of dropout are similar across dropout measures.

5.4 DATA AND RESEARCH DESIGN

For the purposes of analyses of school dropout, data on the 15-year-old and 18-year-old PHDCN cohorts are utilized (N=737).

[1] The PHDCN self-report survey data does contain information on student enrollment, but enrollment data is not available past a certain time point (around 18 years of age). Given that a sizable number of students do not typically drop out of school until age 19 or older (Allensworth and Easton 2001), use of self-report data would underestimate the prevalence of dropout in the sample. Therefore, I utilize just CPS data on school dropout.

5.4.1 Dependent Variables

As noted in the preceding section, two measures of dropout derived from CPS administrative records are used as outcome measures, one that includes lost students and one without. Dropout data were provided by the Chicago Public Schools (CPS), and cover the time span from 1991 to 2003 (see Section 3.6 for details).

To assess dropout, I examine what is referred to as the "Leave Code" for a student in CPS administrative records. A leave code is supposed to be entered for a student when s/he is no longer enrolled in a CPS school. For instance, a leave code is entered when a student graduates or drops out of school. A leave code is also entered when a student transfer from one CPS school to another, or transfers out of the CPS system (see Table 5-1 for a complete list of CPS leave codes). By 2003, all members of the 15-year-old and 18-year-old cohorts had exited the CPS system for one reason or another (i.e. none were active students). By this year, members of the 15-year-old cohort were approximately 23 years old, and members of the 18-year-old cohort were about 26 years old.

As noted in the preceding section, two measures of dropout derived from CPS administrative records are used as outcome measures, one that includes lost students and one without. The following leave codes from Table 5-1 are used to assess dropout including lost students[2]: 5-8, 12, 15-24. The following leave codes are used to assess dropout excluding lost students: 8, 12, 15-23.

[2] The only difference between the computation of my first dropout measure and CPS' computation of their four-year dropout measure is that CPS includes as dropouts leave codes for home instruction (code 9) and terminated ungraded programs (11), and excludes missing leave codes (24). Following practices set by the Consortium on Chicago School Research (Allensworth and Easton 2001), I exclude codes 9 and 11, and include 24.

Table 5-1. Leave Codes from CPS Administrative Records

1)	Transfer to a Chicago Non-Public School
2)	Transfer to a School Out of Chicago
3)	Transfer to a Residential Institution
4)	Legally Committed to a Non-CPS Correctional Institution
5)	Lost – Truant Officer Cannot Locate
6)	Lost – Undeclared Reason
7)	Lost – Did Not Arrive
8)	Transfer to Evening School
9)	Parent Taught Home Instruction
10)	Deceased
11)	Terminated (Student in Ungraded Program)
12)	Terminated Individualized Education Program (i.e. Special Education)
13)	Graduated from High School
14)	Finished Alternative School Program (i.e. GED, Vocational Program)
15)	Dropout – Parenthood
16)	Dropout – Verified Employment
17)	Dropout – Needed at Home
18)	Dropout – Military Service
19)	Dropout – Marriage
20)	Dropout – Other
21)	Dropout – Group V Uniform Discipline Code Violation
22)	Dropout – Absences (more than 20 consecutive days)
23)	Dropout – GED or vocational program
24)	No Leave Code Entered

5.4.2 Independent Variables

Included in the statistical models are a number of individual- and family-level predictors of school dropout. Demographic factors include cohort, gender, and race and ethnicity. Family structural characteristics include family socioeconomic status and parental marital status. Finally, a measure of academic competence, which I refer to as IQ, is included in analyses. Construction of this predictor follows from previous work on the PHDCN project (see Sampson et al. 2005). For the 18-year-old cohort, IQ is derived from subject responses to the Wechsler Adult Intelligence Scale (WAIS) vocabulary test. For the 15-year-old cohort, IQ is derived from subject responses to the Wechsler Intelligence Scale for Children (WISC) vocabulary test and the Wide Range Achievement Test (WRAT) reading test.

5.5 STATISTICAL MODELS

I utilize a bivariate outcome modeling strategy in order to statistically compare the size of coefficients of the same predictor of school dropout, where dropout is measured two different ways (i.e. CPS with “lost” subjects versus CPS without “lost” subjects). For example, in analyses to follow, I compare the size and direction of the coefficient for IQ as a predictor of dropout for both dropout including lost subjects and dropout excluding lost subjects. If there is a significant difference in the size and direction of the coefficient, then it can be concluded that the association between IQ and school dropout is dependent upon the method by which dropout is determined.

Statistical models assume that Y_{ij}, which is a binary measure indicating whether a given subject *i* in neighborhood *j* dropped out of school, follows a logistic distribution. In each model, random intercepts are added in order to account for the correlation between subjects living in the same neighborhood. In Eq. (5.1), a total of two random effects, one for each of the two dependent variables, are included in a bivariate outcome model:

$$\text{logit } E(Y_{ij}) = \pi_{1j}DROPOUT1_{ij} + \pi_{2j}DROPOUT2_{ij} + \pi_{kj}DROPOUT1_{ij}*X_{ij} + \pi_{mj}DROPOUT2_{ij}*X_{ij} + u_{1j}DROPOUT1_{ij} + u_{2j}DROPOUT2_{ij} \quad (5.1)$$

where

$DROPOUT1_{ij}$ is an indicator function taking the value of 1 when the record for person *i* in neighborhood *j* is for the first of two school dropout measures, and 0 otherwise;

$DROPOUT2_{ij}$ is an indicator function taking the value of 1 when the record for person *i* in neighborhood *j* is for the second of two school dropout measures, and 0 otherwise;

X_{ij} is a vector of individual and family predictors;

k references the coefficients for the X_{ij} vector of individual and family predictors for the first dropout measure, $DROPOUT1_{ij}$;

m references the coefficients for the X_{ij} vector of individual and family predictors for the second dropout measure, $DROPOUT2_{ij}$;

u_{1j} and u_{2j} are the two neighborhood-level random effects, which capture the dependence of the respective measures of dropout between residents in the same neighborhood.

As noted, one important advantage of using bivariate models is that they can be used to test whether the effect sizes of predictors of arrest are a function of the data source utilized. As such, a series of hypothesis tests will be used to compare the coefficients for the same predictor from Eq. (5.1). For comparison of the two intercepts:

$$H_0: \pi_{1j} = \pi_{2j} \quad (5.2)$$

For comparison of the various individual and family coefficients:

$$H_0: \pi_{kj} = \pi_{mj} \quad (5.3)$$

5.6 RESULTS

5.6.1 Results: Descriptive Summary of Dropouts

Table 5-2 presents a descriptive summary of the three different school dropout measures. A total of 201 PHDCN youth subjects from cohorts 15 and 18 officially dropped out of school, per the definition which counts “lost” subjects as dropout. This number equates to 27.3% of the sample. Black students are substantially more likely to drop out than Latino students, who are substantially more likely to drop out than white students. Per the alternative definition of dropout that excludes “lost” students, a total of 140 subjects officially dropped out of school, equating to 19% of the sample. With this measure, black students and Mexican students dropped out in approximately equal proportions.

Table 5-2. Descriptive Summary of Dropout, PHDCN Cohorts 15 and 18

	Total N	Lost Students	CPS Dropout includes "Lost" Subjects	CPS Dropout excludes "Lost" Subjects
Total	737	61	201	140
% of Total		8.3%	27.3%	19.0%
Black	316	36	105	69
%		11.4%	33.2%	21.8%
Mexican	200	10	52	42
%		5.0%	26.0%	21.0%
PR/Other	91	9	22	13
%		9.9%	24.2%	14.3%
White	101	4	15	11
%		4.0%	14.9%	10.9%

5.6.2 Results: Logit Models

Table 5-3 shows results for Equations 5.1, 5.2, and 5.3, for the comparison of CPS dropouts including "lost" students in dropout totals versus CPS dropouts excluding lost students. Results from Model 1 demonstrate that there is a statistically significant difference in the likelihood of dropout across measurement types (Chi-square = 13.437, df = 1). For subjects residing in an average neighborhood (where the random effects u_{1j} or u_{2j} equal zero), the predicted probability of dropping out equals 0.193 (1 / (1 + exp{1.432}). For subjects residing in an average neighborhood, the predicted probability of dropping out or being "lost" equals 0.275 (1 / (1 + exp{0.968}).

Results from Model 2 in Table 5-3 demonstrate that white students are significantly less likely to drop out of school than black youth, across both dropout measures. Mexican students are less likely to drop out of school than black students per the dropout measure which include lost students. With the exception of these two differences, there are no statistically significant differences in school dropout across demographic groups for either dropout measure. Regarding convergence on the predictors of dropout across measures, hypothesis tests show that there are not any statistically significant differences in the association between demographic characteristics and the probability of dropping out across dropout measures.

Results are much the same when adding familial characteristics in Model 3. Dropping out is significantly less likely for youth from homes with married parents. Still, there are not any significant differences in any of the coefficient pairs.

In Model 4, it can be seen that dropping out is less likely as student IQ increases. Furthermore, controlling for IQ reduces the gap in dropout across demographic groups. In fact, only for the black-white difference with the dropout measure including lost students is there any significant residual difference across demographic groups in dropout. Overall, after controlling for demographic, familial, and individual-level correlates, there is no significant difference in the predicted probability of dropping out across the two dropout measures (i.e. hypotheses tests for differences in the intercepts are non-significant).

In summary, descriptive results of dropout highlight some key differences in the prevalence of school dropout across the two different dropout measures. Given differences in prevalence, I examined whether individual- and family-level predictors of school dropout are similar across the different dropout measures. Results reveal a number of important findings. First, the likelihood of dropping out of school is similar across outcome measures after controlling for demographic characteristics and IQ (i.e. there is no significant difference in the intercept across dropout measures). Second, there are no significant differences in the association between dropout and relevant covariates across the two dropout measures.

Table 5-3A. Individual and Family Correlates of School Dropout for CPS Data Sources, PHDCN Cohorts 15 - 18

	Model 1			Model 2		
	CPS Exclude Lost Coef. (SE)	CPS Include Lost Coef. (SE)	Hypoth. Test Chi-Square	CPS Exclude Lost Coef. (SE)	CPS Include Lost Coef. (SE)	Hypoth. Test Chi-Square
Intercept	-1.432 ***	-0.968 ***	13.437 ***	-1.511 ***	-0.940 ***	5.120 *
	(0.084)	(0.084)		(0.100)	(0.106)	
White				-0.938 **	-1.135 ***	0.178
				(0.357)	(0.347)	
Mexican				-0.186	-0.459 *	0.811
				(0.245)	(0.222)	
Puerto Rican/Oth Latino				-0.665	-0.555	0.065
				(0.394)	(0.293)	
Other Race				-0.385	-0.522	0.039
				(0.562)	(0.461)	
Male				-0.191	-0.149	0.027
				(0.186)	(0.178)	
Cohort 15				-0.043	-0.098	0.044
				(0.187)	(0.148)	

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

Table 5-3B. Individual and Family Correlates of School Dropout for CPS Data Sources, PHDCN Cohorts 15 - 18

	Model 3			Model 4		
	CPS Exclude Lost Coef. (SE)	CPS Include Lost Coef. (SE)	Hypoth. Test Chi-Square	CPS Exclude Lost Coef. (SE)	CPS Include Lost Coef. (SE)	Hypoth. Test Chi-Square
Intercept	-1.542 ***	-0.966 ***	4.697 *	-1.736 ***	-0.806 ***	0.866
	(0.101)	(0.110)		(0.225)	(0.216)	
White	-0.812 *	-1.015 **	0.184	-0.744	-0.925 *	0.143
	(0.370)	(0.361)		(0.384)	(0.383)	
Mexican	-0.156	-0.406	0.525	-0.129	-0.373	0.493
	(0.272)	(0.257)		(0.277)	(0.260)	
Puerto Rican/Oth Latino	-0.666	-0.539	0.083	-0.639	-0.498	0.101
	(0.398)	(0.289)		(0.406)	(0.301)	
Other Race	-0.270	-0.401	0.035	-0.163	-0.260	0.018
	(0.577)	(0.474)		(0.602)	(0.520)	
Male	-0.148	-0.115	0.016	-0.139	-0.108	0.014
	(0.183)	(0.180)		(0.182)	(0.181)	
Cohort 15	-0.016	-0.076	0.053	-0.018	-0.080	0.056
	(0.193)	(0.153)		(0.200)	(0.158)	
Family SES	-0.175	-0.138	0.099	-0.115	-0.065	0.159
	(0.119)	(0.101)		(0.125)	(0.106)	
Married Parents	-0.438 *	-0.417 *	0.006	-0.444 *	-0.424 *	0.005
	(0.194)	(0.181)		(0.198)	(0.184)	
IQ				-0.018 **	-0.022 ***	0.129
				(0.006)	(0.006)	

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

5.7 DISCUSSION AND CAVEATS

The primary objective of this chapter was to determine whether the prevalence of school dropout is similar across different dropout measures, and whether the correlates of school dropout are dependent upon measurement type. Descriptive findings reveal some difference in the prevalence of dropout across measures, but the correlates of school dropout are not dependent upon which measure is used in analyses. The implication for research is that studies designed to assess key individual and family predictors of dropout need not worry about methodological concerns over the treatment of "lost" students. While the predictors of dropout are similar across methods, concern is warranted over the substantial disparity in the prevalence of dropout depending on how lost students are treated. Researchers, practitioners, and interested citizens should pay attention to how dropout measures are computed if they want to get a true sense for the extent of the school dropout problem in the Chicago and throughout the United States.

CHAPTER 6

THE SOCIAL CONTEXT OF RACIAL AND ETHNIC DISPARITIES IN ARREST

6.1 INTRODUCTION

It is an accepted fact that blacks are drastically overrepresented at all stages of criminal case processing, and two competing explanations have long been posited to explain the disparity: either differences in the prevalence and incidence of offending across racial and ethnic groups account for arrest differences (i.e. the differential involvement argument), or the criminal justice system discriminates against certain groups. Representative of the differential involvement argument is research by Hindelang (1978). Hindelang found that the racial distribution of arrestees for common law personal crimes in the FBI's Uniform Crime Reports matches the distribution of offenders reported by victims in the National Crime Panel, and therefore concluded that black differential involvement in crime explains the overrepresentation of blacks in arrests. In contrast, Chambliss and Nagasawa (1969) found that white high-school boys had a slightly higher rate of self-reported delinquency than blacks, but black high-school boys appeared in juvenile court records substantially more often. These authors question (1969:75), "[I]f the actual involvement in delinquency (as measured by self-reported delinquency) does not predict official rates, then what does?" For them, the answer is an inherent racial bias in the law enforcement process.

The present chapter will illustrate that both arguments have merit. Perhaps the more fundamental issue to understand, however, is that differential involvement in crime

and system bias both contain an ecological dimension that makes crime more likely in certain neighborhoods, and arrest more probable irrespective of the actual level of crime. Thus, it is critical to examine why arrest disproportionately occurs in these neighborhoods, and to examine the extent to which neighborhood mechanisms affect criminal outcomes.

Two central questions are examined in this study. First, do youth from different racial and ethnic groups who reside in the same neighborhood have differing likelihoods of arrest after controlling for self-reported offending? Second, do youth of similar race and ethnicity residing in different neighborhood contexts have differing likelihoods of being arrested given similar levels of offending? The explanation could be that certain racial and ethnic groups are arrested more often than other groups because they commit more crimes, and also because they reside in neighborhoods where the probability of arrest is higher.

6.2 THEORETICAL FRAMEWORK

The theoretical approach to this study emphasizes that arrest is an outcome influenced not only by criminal offending, which has its own set of explanatory factors, but also by a series of factors that ultimately lead the police to take action against a known offender. The discussion to follow reviews the various individual, familial, educational, situational, and neighborhood factors that are related to offending and subsequent police action, and how these factors influence racial and ethnic disparities in arrest.

6.2.1 Offending

One of the key ways in which neighborhood context affects the event of arrest is through neighborhood effects on acts of delinquent and criminal offending. Much research has explored the various individual, familial, and contextual explanations for racial and ethnic differences in offending, though few studies have considered all these factors simultaneously. Two recent exceptions include studies by Sampson, Morenoff, and Raudenbush (2005) and McNulty and Bellair (2003) on violent offending. Importantly, these two studies also move beyond a mere focus on black-white differences in offending.

Sampson and colleagues (2005) find that a small number of factors explain the racial and ethnic gap in violent offending, and conclude that neighborhood context is the most important factor in explaining the gap in offending across groups. They also note that they found no evidence of interaction effects between neighborhood- and individual-level predictors of violent offending and race or ethnicity. Thus, Sampson and colleagues argue that their results suggest that generic interventions that improve neighborhood conditions and support stable marriages and family structures will reduce the racial and ethnic gap in violence.

McNulty and Bellair (2003) conclude that factors explaining differentials in offending between two racial and ethnic groups depend upon which two groups are being examined, though, like Sampson and colleagues (2005), their findings suggest that a small number of factors explain differences in offending across all groups. The authors conclude that community disadvantage explains black-white differences in violence and

black-Asian differences, but it has less of an effect on other group differences. Differences in family structure and socioeconomic status across groups also explain large proportions of the black-white and Hispanic-white gaps in offending. Gang membership explains Hispanic-white differences and Native-American-white differences. Moreover, gang membership explains the association between concentrated disadvantage and violent offending, which suggests that the reason youth in disadvantaged neighborhoods are more likely to engage in violence is because they are more likely to be in gangs. Results suggest that interventions focused on neighborhood conditions and family structures will reduce the racial and ethnic gap in violence, particularly between blacks and whites and Hispanics and whites.

In addition to these recent studies on violence, Peeples and Loeber (1994) also examine the role of neighborhood context in explaining racial differences in offending, though they do not focus strictly on violence. Descriptive findings suggest that the black-white difference in offending is substantial in aggregate, when failing to account for the fact that black and white youth live in much different neighborhood contexts, on average. These authors find that the frequency and seriousness of offending is similar for black and white boys when comparing youths who similarly reside in non-underclass neighborhoods. These authors note, however, that studies of neighborhood-level correlates of crime should move beyond a mere emphasis on structural explanations, and examine neighborhood mechanisms like social control and the cultural transmission of values that can provide a broader explanation for crime and delinquency.

This discussion serves to briefly highlight the key factors at the neighborhood, family, and individual levels associated with offending. Relevant factors include family structure, neighborhood disadvantage, and processes like social control. These factors are also arguably associated with arrest, for violent offenses, and other crimes. Presumably, controlling for offending will mediate the association between various individual, family, and neighborhood characteristics and arrest.

6.2.2 From the Act of Offending to the Event of Arrest

It is widely acknowledged that most criminal offenses do not lead to an arrest. Furthermore, not every offender known to the police is ultimately arrested. Following the commission of a crime, there are numerous factors that influence whether a given offense will ultimately lead to arrest. First and foremost is whether the offense has been witnessed by victims, bystanders, or the police. Neighborhood contextual factors influencing the visibility of a crime include population density and pedestrian traffic. For example, Sampson (1986) notes that lower-class areas tend to have a more active street life than more affluent areas, suggesting that residents of lower-class areas face a greater likelihood of detection than those residents of more affluent areas. Another key influence on visibility is whether criminal offenses are committed in groups (Morash 1984).

If a crime is detected and an offender is known, police must decide whether to take action and enforce the law against the offender. Black and Reiss (1970) find that only 15 percent of police contacts with juveniles resulted in an official arrest, thus providing evidence of considerable discretion on the part of police. Societal reaction

theory holds that perceptions and stereotypes of criminals influence the enforcement of the law, with one implication being that racial and ethnic minorities and individuals of lower socioeconomic status are more likely to be arrested for a crime irrespective of their actual behavior (Sampson 1986). Similarly, applying a symbolic interactionist argument, Morash (1984) suggests that police are more likely to arrest individuals if their characteristics and behavior fit the meaning or image of what a criminal looks and behaves like. In addition to race and ethnicity, research suggests that the suspect's gender, social class, and prior criminal record are also key individual characteristics affecting criminal stereotypes and arrest (Morash 1984; Visher 1983; Wilson 1968). Furthermore, having delinquent peers not only increases the visibility of offending, but also influences perceptions about delinquents and criminals. In line with this argument, Morash (1984) finds that police are more likely to arrest individuals who have delinquent peers and who commit offenses with peers.

Beyond individual characteristics that lead to stereotyping and profiling, residence in a disadvantaged or high-crime neighborhood may also stigmatize individuals. Or as Stark (1987:901) evocatively phrases it, "place of residence can be a dirty, discreditable secret." Werthman and Piliavin (1967) describe a process termed ecological contamination, whereby every person encountered in a "bad" neighborhood is perceived by the police to embody the "moral liability" of the given neighborhood (see also Sampson 1986; Sampson and Raudenbush 2004; Smith 1986; Terrill and Reisig 2003). Thus, characteristics of the neighborhood where police-suspect contact occurs influence the outcome of the contact, independent of the characteristics of the criminal event that

led to the contact. As one example, Terrill and Reisig (2003) find that police contact is significantly more likely to result in police use of force in disadvantaged neighborhoods even after controlling for relevant situational characteristics. Similarly, Smith (1986:313) observes that the "[V]ariation in police use of coercive authority among neighborhoods is linked to the racial composition of neighborhoods but is not attributable to the race of individuals confronted by police." Regarding arrest, Smith (1986) finds that suspects in contact with police in lower socioeconomic status neighborhoods face three times the likelihood of arrest than comparable suspects in higher-status neighborhoods. Sampson (1986) also finds substantial evidence for the ecological contamination hypothesis. His results reveal that neighborhood socioeconomic status has a negative effect on individuals' contact with the police, independent of criminal behavior. In a crime type analysis, he finds that neighborhood SES has a significant negative effect on vandalism, larceny, and serious index crimes. He also notes that the association between neighborhood SES and arrest is strongest for vandalism arrests, arguably the most visible of the crimes he investigated.

Research on societal reaction has taken the crucial first step in illustrating that neighborhood context indeed has an independent effect on arrest net of offending, but the unanswered question is discovering which characteristics of low socioeconomic neighborhoods lead to the stigmatization described in the preceding paragraph. Crime levels are certainly a factor in producing stereotypes about crime-ridden areas (Stark 1987). However, a substantial number of crimes are not observed, even in areas with an active street life. Moreover, the fear of crime literature has convincingly shown that

perceptions about the level of crime and fear of crime are much different than the objective measure of crime (see, e.g., Hunter 1985). Thus, additional neighborhood characteristics besides crime may lead to a stigmatization of place.

As Sampson and Raudenbush (2004) reason, neighborhood disorder serves as a visual cue that reinforces stereotypes about both neighborhoods and their residents. These authors find that the racial, ethnic, and class composition of a given neighborhood predicts perceptions of disorder in it, even after controlling for actual levels of disorder (as recorded by researchers through systematic social observation). The implication for the current study is that the probability of arrest may be higher in disorderly, stigmatized neighborhoods controlling for criminal offending, which may explain racial and ethnic differentials in arrest.

Arrest may be more likely in some neighborhoods not only because they are stigmatized, but also because there is no other option to control neighborhood crime besides enforcing the law. Recall the arguments presented in Chapter 2 concerning the role of families, neighborhoods, and schools in the social control process. Park ([1925] 1967) describes the declining influence of families and neighborhoods in the social control process, and hypothesizes that institutions like schools will fill the void as agents of social control. However, later authors give the impression that schools have neither supplemented nor supplanted the role of the family and neighborhood in controlling individuals (Shaw and McKay [1942] 1969; Znaniecki [1940] 1965). The implication for the current study is that arrest may be more likely in neighborhoods which lack other means for social control. In the absence of family-control, neighborhood-control, and

school-control, official agents of social control (e.g. the police) may be the last remaining source of social control. This argument accords with observations that all types of functions previously performed by the family and the local community (e.g. welfare, education) are now the responsibility of the state (see, e.g. Coleman 1987). With the industrial and post-industrial division of labor, the state is asked to perform welfare functions generally, and crime control specifically, and the citizenry compensates the state through taxation.

As a final set of influences on the likelihood of arrest, research has shown that situational factors associated with the commission of a crime and subsequent police contact with suspects influence whether an arrest is made in a given situation (National Research Council 2004). Four of the most influential situational factors are the demeanor of the suspect (Piliavin and Briar 1964), preferences of victims and citizen complainants for the police to arrest or release suspects (Black and Reiss 1970), the victim-offender relationship (Black 1976; Smith and Visher 1981), and the seriousness of the offense (Black and Reiss 1970; Smith and Visher 1981).

Clearly, a large number of factors influence both offending levels and the probability of arrest. The present study moves beyond previous research by combining individual, family, educational, situational, and neighborhood factors into a single analytic framework in order to examine the influence of each on the probability of arrest, after controlling for individual involvement in crime. At the neighborhood level in particular, this study examines whether the law is more likely to be invoked in one neighborhood versus another, independent of offending. In sum, I hypothesize that

offending is highly predictive of arrest, and is a key factor explaining arrest differentials across race and ethnicity. Since not all crimes lead to arrest, I further hypothesize that neighborhood context – by means of an ecological bias resulting from neighborhood stigmatization – influences the probability of arrest, independent of the alleged offender's actual behavior. Finally, I also hypothesize that there is a tradeoff between formal social control and informal social control, such that the need for law enforcement becomes more essential in the absence of informal control from families, schools, and neighborhoods.

6.3 DATA AND RESEARCH DESIGN

The study sample is drawn from the Project on Human Development in Chicago Neighborhoods (PHDCN) Longitudinal Cohort Study. This chapter focuses on the 12, 15, and 18 age cohorts. Detailed information about the sample, and the PHDCN data more generally, are provided in Chapter 3.

Official arrest data were provided by the Chicago Police Department (CPD) and the Illinois State Police (ISP), and cover the time span from 1995 to 2001. Both juvenile and adult arrest data were provided. Given results from Chapter 4 which showed that inferences about the predictors of arrest are robust to whether official or self-report arrest measures are examined, I utilize just one data source in the present chapter. I choose to utilize official data because it is more complete (i.e. the self-report data contains missing values due to subject attrition). Further description of the CPD and ISP data is provided in Chapter 3.

6.3.1 Dependent Variable

The dependent variable used in this analysis is the frequency of arrests per person-year. Official data was obtained in combined yearly extracts covering the time period from 1995 to 2001. Accordingly, person-year observations were constructed by calculating the age of a given subject as of January 1st of a given year, and summing the count of arrests over the subsequent twelve month period. If subjects did not appear in the arrest data for a given year, then they had no arrest record for the year and an arrest count of zero. With seven years of data, there are seven observations per subject.

6.3.2 Independent Variables

Included in the statistical models are a number of individual, family, educational, situational, and neighborhood-level predictors. Key demographic factors include age, cohort, gender, immigrant generational status (1st, 2nd, or 3rd and higher), and race and ethnicity. Five dummy indicators of race and ethnicity are employed in the analyses: black, Mexican, Puerto Rican/Other Latino, other race, and white. Black, white, and other race groups are all non-Latino. In analyses to follow, the black dummy variable is used as the reference category. Also, the race and ethnicity dummy variables are aggregated to the neighborhood-level to produce indicators of the percent racial and ethnic composition of each given neighborhood.

Given arguments from past research that disparities across racial and ethnic groups in arrest and criminal case processing are largely due to differential involvement in offending, a key individual level explanatory variable to examine is the role of self-

reported offending. Analyses include four separate scales of self-reported offending (violent, property, public-order/status, and drug offenses), created from a total of 23 survey items from the wave 1 self-report survey. These items are indicators of the frequency of offending over the 12-month period preceding the survey date. In the self-report survey, follow-up questions for a subset of the 23 items used to construct the four offending scales asked respondents whether they committed a given offense alone or with others the last time they committed the offense. These items were combined using an ordinal IRT model. Given that the 23 indicators of group offending are highly correlated with the four offending scales, the group offending IRT scale was constructed controlling for the four offending scales. Thus, the situational measure of group offending included in analyses to follow is interpreted as the propensity to offend in groups given the propensity to offend in general.

In addition to offending, two measures of family characteristics are included as explanatory predictors of arrest: family socioeconomic status and family structure. Family structure is described with a binary variable reflecting the marital status of a youth's biological parents.

Characteristics of neighborhood structure are captured from four indicators, all derived from 1990 census data: concentrated poverty, residential stability, percentage of foreign born residents, and population density. Population density is calculated as the number of residents per square kilometer in each neighborhood. Presumably, the greater the population density, the greater the chance that a criminal act will be observed. While population density is not an exact measure of street activity, prior research on Chicago

has shown that indicators of street activity are highly correlated with population density (Sampson and Raudenbush 1999). Thus, population density arguably serves as a sound proxy for street activity.

To test arguments about ecological contamination, an indicator of perceived neighborhood disorder is included in the modeling strategy and is derived from the 1994-1995 PHDCN Community Survey. To examine the influence of social control on arrest, two measures are utilized. The first is a measure of child-centered social control, derived from the PHDCN Community Survey. The second measure is school-level social control. To measure school-level social control, I follow Shaw and McKay's ([1942] 1969, pp.185-186) argument that chronic truancy is a sign that students are attending isolated and ineffective schools. An individual-level measure of chronic truancy is derived from the PHDCN wave 1 self-report survey. Subjects (for the 18-year-old cohort) or caregivers (for the 12- and 15-year-old cohorts) were asked how often they or their children are truant from school. Chronic truancy is defined as being truant one or more times per week. If subjects are no longer in school, chronic truancy refers to their behavior during their last year of school. Further details about the construction of all independent variables are provided in Chapter 3.

6.4 ANALYTIC STRATEGY AND STATISTICAL MODELS

Analyses of the racial and ethnic disparities in arrest follows two paths: 1) growth curve analyses of all arrests estimated by population-averaged age-arrest trajectories, and

2) a decomposition of racial and ethnic differences in arrest trajectories into differences in group characteristics and attributes.

6.4.1 Growth Curves

In the first approach, quadratic growth models are specified with arrest as the dependent variable. With a quadratic growth model, an individual's change (or growth) in arrest over time is modeled as a function of age and a squared age term. The baseline model in this study also includes demographic indicators of cohort, gender, immigrant generation, race, and ethnicity, where dummy variables are used to compare the arrest trajectories of the various racial and ethnic groups. In the analyses, age is centered at 17. This age was chosen because it provides an overlap in the observation periods for all cohorts (i.e. age 17 is the end of the observation period for the 12 year-old cohort, and the beginning of the observation period for the 18 year-old cohort). With this centering, model coefficients are used to assess the expected count of arrests at age 17 and the rate of change in arrest at age 17. The baseline model is then expanded with the addition of a number of person-level, family-level, educational, situational, and neighborhood-level covariates described in the previous section. After the inclusion of the relevant explanatory variables, any significant difference between groups, in this case blacks versus whites, Mexicans, and Puerto Ricans/Other Latinos, can potentially be interpreted as a measurement of racial and ethnic bias.

Each model in the analysis assumes that Y_{tjk}, which is the observed number of official police arrests for person *j* in neighborhood *k* at age *t*, follows a Poisson

distribution. The data is structured to where each observation represents a person-year, with a total of *t* observations per person *j*. With the Poisson distribution, it is assumed that the conditional variance and conditional mean are equal, though this may not be true with arrest data. Preliminary analyses of models described to follow revealed that there is no overdispersion with the within-person variance, so all models are estimated without a dispersion parameter. There was even slight evidence of underdispersion. This results because individuals have more stability in their arrest trajectories than expected.

Equation (6.1) specifies the growth curve model:

$$\log \mathrm{E}(Y_{tjk}) = \pi_{0jk} + \pi_{1jk}(AGE - 17)_{tjk} + \pi_{2jk}(AGE - 17)^2_{tjk} \quad (6.1)$$

Equation (6.2) shows that the expected count of arrests at age 17 is modeled as a function of individual, family, situational, and neighborhood covariates, where $X_{jk}\beta$ is a vector of individual, family, educational, and situational characteristics and $W_k\gamma$ is a vector of neighborhood characteristics:

$$\pi_{0jk} = \mu + X_{jk}\beta + W_k\gamma \quad (6.2)$$

The linear and quadratic growth terms are also modeled as a function of individual, family, educational, situational, and neighborhood characteristics:

$$\pi_{1jk} = \mu + X_{jk}\beta + W_k\gamma$$

$$\pi_{2jk} = \mu + X_{jk}\beta + W_k\gamma \quad (6.3)$$

All covariates are centered around their grand means, so that model coefficients can be interpreted as the average effect or association across neighborhoods. Further, by centering the demographic dummy variables (i.e. race, ethnicity, gender, cohort,

immigrant generation) around their grand means, the intercept is interpreted as the expected number of arrests by the *average* youth, not the expected count for the dummy reference categories. With these models, the expected count of arrests at a particular age is given by:

$$\mathrm{E}\left(Y_{tjk}\right) = \exp\left(\boldsymbol{x}'_{\boldsymbol{jk}}\beta + \boldsymbol{w}'_{\boldsymbol{k}}\gamma\right) \tag{6.4}$$

6.4.2 Decomposition of Racial and Ethnic Differences

After specifying a series of growth models in order to determine which factors account for any racial and ethnic differences in arrest, differences in arrest are then partitioned into differences due to differing attributes of each group. For example, if arrest is inversely related to family SES, as many have concluded (see, e.g., Reiss and Rhodes 1961), analyses are performed to isolate exactly how much of the difference in arrest between racial and ethnic groups is due to differences in SES across groups. To isolate the effects of certain variables or sets of variables, average predicted trajectories of arrest for each racial and ethnic group are computed from model coefficients and group specific averages on relevant attributes (i.e. the black coefficient for SES multiplied by the average SES for blacks). More specifically, the expected count of arrests at each given age are computed, which is denoted by: $\mathrm{E}\left(Y_t^{Black}\right)$, $\mathrm{E}\left(Y_t^{White}\right)$, $\mathrm{E}\left(Y_t^{Mexican}\right)$, $\mathrm{E}\left(Y_t^{PR/Other}\right)$. In the second step, another set of predicted trajectories are computed by multiplying the model coefficients of one group by the average attributes of another group. For example, to determine what the black arrest trajectory would look like if blacks, on average, had the same SES level as whites, the black coefficient for SES is

multiplied by the average level of SES for whites, $E\left(Y_t^{Black\ with\ White\ SES}\right)$. Finally, I compare the original trajectory for a given group to the trajectory from step two with other group attributes, and compute how much of the group differences in arrest are due to differences in attributes. In equation form, the comparison between blacks and each group is given by:

$$1-\left(E\left(Y_t^{Black}\right)-E\left(Y_t^{Black\ with\ White\ Attributes}\right)\right)/\left(E\left(Y_t^{Black}\right)-E\left(Y_t^{White}\right)\right)$$

$$1-\left(E\left(Y_t^{Black}\right)-E\left(Y_t^{Black\ with\ Mexican\ Attributes}\right)\right)/\left(E\left(Y_t^{Black}\right)-E\left(Y_t^{Mexican}\right)\right)$$

$$1-\left(E\left(Y_t^{Black}\right)-E\left(Y_t^{Black\ with\ PR/Other\ Attributes}\right)\right)/\left(E\left(Y_t^{Black}\right)-E\left(Y_t^{PR/Other}\right)\right) \quad (6.5)$$

The goal of this approach is to determine how much of the disparity in arrest trajectories across groups are due to differences across groups on the independent factors in the analysis.

6.5 RESULTS

6.5.1 Descriptive Summary of Arrests

A total of 341 PHDCN youth subjects from cohorts 12, 15, and 18 were officially arrested at least once from 1995 to 2001, equating to 19.2% of the sample. Of this number, 148 were arrested one time (8.3%), and the remainder arrested at least twice during the time frame. A total of 1,093 arrests of the PHDCN youth were officially recorded in the State of Illinois from 1995 to 2001. Out of these 1,093 arrests, 228 arrests were for violent offenses, 235 for property offenses, 312 for offenses against the public-

order, 287 for drug offenses, and 31 for other offenses (including warrants and unclassified arrests).[1]

Table 6-1 displays a descriptive summary of arrests by race and ethnicity. Here it can be seen that a much greater percentage of blacks in the sample have been arrested than the other racial and ethnic groups (around 30% of blacks, compared to roughly 13 to 14% of the other groups). Because of this, blacks have a mean number of arrests (1.03) that is considerably higher than the other groups. Among active arrestees (those with at least one arrest), however, the difference in the mean number of arrests between blacks (3.47) and the other groups is considerably smaller. One may conclude from this that is it the far greater prevalence in arrest among blacks that accounts for the racial disproportionality of arrest than any greater incidence of arrest among active offenders.

Table 6-1. Arrest Summary by Race/Ethnicity: PHDCN Waves 1-3, Cohorts 12-18 (N=1775)

	Black (N = 641)	Mexican (N = 560)	Puerto Rican/Other (N = 227)	White (N = 279)
Number of Arrestees	190	74	32	36
% of Total N	29.6%	13.2%	14.1%	12.9%
Number of Arrests	659	223	89	102
Violent	148	46	15	15
Property	110	55	33	35
Public-Order	209	50	21	26
Drug	171	67	20	24
Other Offense	21	5	0	2
Mean # of Arrests, All Years (Arrestees)	3.47	3.01	2.78	2.83
Mean # of Arrests, All Years (Total N)	1.03	0.40	0.39	0.37

Note: Arrest counts by offense type based on most serious offense classification, for arrests with multiple charges

[1] Classification based on most serious offense of arrest, for arrests with multiple charges.

Table 6-2 displays summary statistics by racial and ethnic groups for the relevant predictors in the study, and demonstrates that there are visible differences across groups on key individual, family, and neighborhood-level characteristics. Here it can be seen that all Latinos are more likely to be first or second generation immigrants than the third or higher generation. In contrast, almost all black youth and three-quarters of white youth are third generation immigrants or higher. In terms of family characteristics, SES is highest among whites and lowest among Mexicans. However, Mexicans more commonly have married parents than other groups. Blacks have a greater propensity for violent offending than other groups, and Puerto Ricans and whites have a greater propensity to commit property offenses than blacks or Mexicans. There is little difference across groups in the propensity to offend with others. Finally, Latino youth are more likely to be chronically truant than black or white youth.

Regarding neighborhood characteristics, blacks, on average, live in areas characterized by higher levels of concentrated poverty than other groups, while whites live in areas with the lowest levels. Blacks also live in neighborhoods with relatively high levels of residential stability and low levels of foreign born residents. Puerto Ricans live in neighborhoods with the highest levels of population density. Whites live in neighborhoods with much higher levels of informal social control than other groups. Finally, Mexicans live in neighborhoods with the highest levels of physical disorder.

Table 6-2. Descriptive Statistics by Race/Ethnicity: PHDCN Cohorts 12-18 (N=1775)

	Black (N = 641)		Mexican (N = 560)		Puerto Rican/Other (N = 227)		White (N = 279)	
	Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)
Individual and Family-Level								
Male	0.47	(0.50)	0.50	(0.50)	0.49	(0.50)	0.51	(0.50)
Age at Wave I	14.80	(2.52)	14.67	(2.40)	14.63	(2.35)	15.03	(2.46)
Cohort Proportions								
Cohort 12	0.40	(0.49)	0.42	(0.49)	0.40	(0.49)	0.36	(0.48)
Cohort 15	0.31	(0.46)	0.33	(0.47)	0.37	(0.48)	0.33	(0.47)
Cohort 18	0.29	(0.45)	0.25	(0.44)	0.24	(0.43)	0.31	(0.46)
Immigrant Generation								
First	0.02	(0.14)	0.31	(0.46)	0.24	(0.43)	0.13	(0.40)
Second	0.02	(0.15)	0.55	(0.50)	0.54	(0.50)	0.11	(0.32)
Third or higher	0.96	(0.20)	0.15	(0.35)	0.22	(0.42)	0.75	(0.43)
Family SES	0.23	(1.26)	-0.66	(1.05)	-0.24	(1.22)	0.84	(1.37)
Married Parents	0.30	(0.46)	0.72	(0.45)	0.43	(0.50)	0.64	(0.48)
Offending								
Violent	0.40	(0.99)	-0.11	(0.77)	0.10	(0.91)	0.04	(0.87)
Property	0.05	(0.57)	0.04	(0.57)	0.09	(0.59)	0.11	(0.62)
Public-Order	0.15	(0.61)	0.07	(0.60)	0.15	(0.61)	0.17	(0.63)
Drug	1.13	(0.19)	1.11	(0.11)	1.13	(0.64)	1.13	(0.16)
Group Offending	0.01	(0.12)	0.00	(0.09)	0.01	(0.11)	0.01	(0.11)
Chronic Truancy	0.04	(0.20)	0.05	(0.22)	0.05	(0.23)	0.03	(0.17)
Neighborhood-Level								
% Black	77.99	(26.05)	12.81	(20.40)	11.75	(18.61)	9.15	(18.37)
% Mexican	11.19	(16.39)	57.63	(26.76)	39.97	(19.87)	21.96	(17.35)
% Puerto Rican/Oth Latino	4.16	(8.61)	16.20	(14.52)	29.92	(13.98)	12.31	(12.94)
% White	3.98	(9.20)	10.94	(16.63)	15.13	(16.82)	48.75	(24.75)
Concentrated Poverty	0.33	(0.79)	-0.25	(0.43)	-0.27	(0.57)	-0.70	(0.48)
% Foreign Born	9.51	(12.06)	30.20	(12.23)	27.20	(10.94)	21.20	(13.08)
Residential Stability	0.35	(1.19)	-0.25	(0.67)	-0.30	(0.61)	0.07	(0.96)
Population Density (1000s)	6.94	(4.51)	7.90	(4.35)	8.37	(3.51)	5.97	(4.52)
Social Control	3.85	(0.27)	3.82	(0.27)	3.84	(0.26)	4.12	(0.31)
Physical Disorder	1.67	(0.29)	1.76	(0.27)	1.66	(0.26)	1.43	(0.24)

6.5.2 Growth Curve Analyses of Arrest

Table 6-3 displays results for Models 1 through 3, where Model 1 is the baseline model. Results from Model 1 reveal that there are substantial differences in the expected number of arrests at age 17 (i.e. the intercept) across race and ethnicity. The expected count of arrests for black males is 0.52; for white males it is 0.15; for Mexican males it is 0.17; and for Puerto Rican and other Latino males it is 0.20.[2] It can also be seen from

[2] Because the level-2 predictors are grand-mean centered, the expected count for blacks is predicted as:

Model 1 that there is a sizable gender difference in arrest, and that there are significant cohort differences in arrest, both in the level of arrest at age 17, and in the growth (i.e. the slopes) in arrests. Further, the expected number of arrests is lower for more recent immigrants.

To illustrate the differences in arrest across race and ethnicity, Figure 6-1 displays the expected age-arrest curves for males ages 10 to 25, constructed from model coefficients from Model 1. Here it can be seen that the level or number of arrests in substantially greater for blacks. The white, Mexican, and Puerto Rican/Other Latino curves overlap for the most part until age 17, but there are some differences in the number of arrests around the peak arrest ages.

Model 2 includes family SES and marital status of parents as covariates. There is a significant difference in arrest, on average, between individuals with married parents and those without. The addition of family variables reduces the coefficient for the black-white gap in arrest at age 17 from -1.064 to -.839, a decline of 21%. This results because 64% of white youth in the sample have married parents, compared to 30% of black youth (see Table 6-2).

Model 3 includes neighborhood-level indicators of the percentage of each racial and ethnic group in a given neighborhood, constructed from the cohort data. Adding both the percentage of racial and ethnic composition at the neighborhood-level and the dummy indicators at the person-level makes it possible to distinguish between person-level and contextual effects. A contextual effect refers to some emergent property of a

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$$\mathrm{E}\left(Y_t^{Black}\right) = \exp\left(\beta_0 + \beta_{White}(0 - \overline{X}_{White}) + \beta_{Mex}(0 - \overline{X}_{Mex}) + \beta_{P.\,Rican}(0 - \overline{X}_{P.\,Rican}) + \beta_{Oth}(0 - \overline{X}_{Oth}) + \beta_{Male}(1 - \overline{X}_{Male})\right)$$

The expected count at age 17 is predicted in a similar fashion for other racial and ethnic groups.

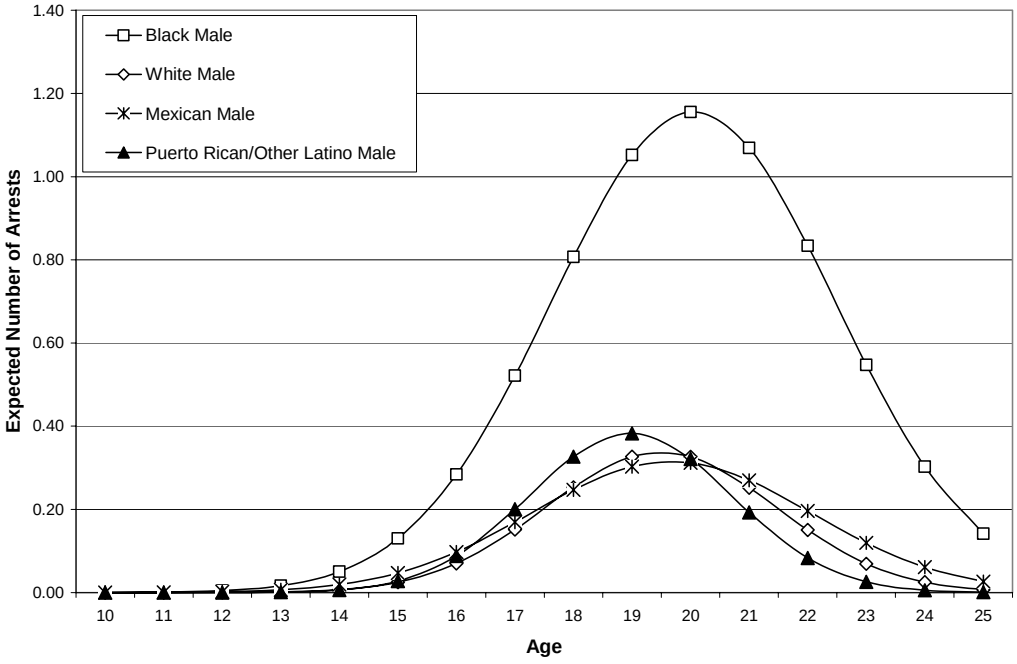
Table 6-3. Racial/Ethnic Disparities in Arrest, with Individual and Family Characteristics

	Model 1		Model 2		Model 3	
	Coef.	(SE)	Coef.	(SE)	Coef.	(SE)
Expected Count of Arrests, Age 17						
Intercept	-2.244	(0.070) ***	-2.295	(0.067) ***	-2.334	(0.064) ***
% White (NBHD)					-0.032	(0.038)
% Mexican (NBHD)					-0.079	(0.031) *
% Puerto Rican/Other (NBHD)					0.079	(0.054)
% Other Race (NBHD)					0.332	(0.108) **
White	-1.063	(0.163) ***	-0.839	(0.178) ***	-0.868	(0.254) ***
Mexican	-0.509	(0.198) *	-0.393	(0.193) *	-0.191	(0.204)
Puerto Rican/Other Latino	-0.409	(0.185) *	-0.428	(0.174) *	-0.437	(0.212) *
Other Race/Ethnicity	-1.431	(0.401) ***	-1.333	(0.386) ***	-1.507	(0.428) ***
Male	1.603	(0.118) ***	1.623	(0.118) ***	1.611	(0.118) ***
Cohort 15	-0.686	(0.133) ***	-0.719	(0.137) ***	-0.690	(0.140) ***
Cohort 18	-0.876	(0.163) ***	-0.866	(0.171) ***	-0.822	(0.165) ***
1st Generation Immigrant	-0.781	(0.190) ***	-0.732	(0.179) ***	-0.786	(0.169) ***
2nd Generation Immigrant	-0.743	(0.193) ***	-0.723	(0.183) ***	-0.740	(0.174) **
Family SES			-0.085	(0.048)	-0.120	(0.050) *
Married Parents			-0.540	(0.115) ***	-0.535	(0.116) ***
Age/Growth (per year)						
Intercept	0.564	(0.041) ***	0.568	(0.040) ***	0.552	(0.037) ***
% White (NBHD)					0.028	(0.021)
% Mexican (NBHD)					-0.012	(0.015)
% Puerto Rican/Other (NBHD)					0.048	(0.017) **
% Other Race (NBHD)					-0.016	(0.038)
White	0.103	(0.112)	0.040	(0.108)	-0.089	(0.143)
Mexican	-0.042	(0.091)	-0.045	(0.083)	-0.104	(0.116)
Puerto Rican/Other Latino	0.104	(0.072)	0.118	(0.068)	-0.013	(0.086)
Other Race/Ethnicity	0.444	(0.251)	0.382	(0.234)	0.318	(0.227)
Male	0.067	(0.047)	0.071	(0.047)	0.069	(0.045)
Cohort 15	-0.010	(0.099)	-0.006	(0.098)	0.029	(0.087)
Cohort 18	-0.469	(0.120) ***	-0.450	(0.116) ***	-0.458	(0.101) ***
1st Generation Immigrant	-0.018	(0.105)	-0.022	(0.095)	0.012	(0.081)
2nd Generation Immigrant	-0.034	(0.078)	-0.024	(0.068)	0.004	(0.056)
Family SES			0.033	(0.015) *	0.032	(0.016) *
Married Parents			0.029	(0.053)	0.050	(0.051)
Age^2						
Intercept	-0.107	(0.014) ***	-0.113	(0.015) ***	-0.115	(0.013) ***
% White (NBHD)					0.002	(0.003)
% Mexican (NBHD)					0.005	(0.003)
% Puerto Rican/Other (NBHD)					-0.004	(0.004)
% Other Race (NBHD)					-0.007	(0.008)
White	-0.038	(0.022)	-0.021	(0.019)	-0.028	(0.023)
Mexican	0.014	(0.016)	0.017	(0.013)	0.003	(0.020)
Puerto Rican/Other Latino	-0.042	(0.023)	-0.041	(0.022)	-0.036	(0.028)
Other Race/Ethnicity	-0.057	(0.034)	-0.031	(0.032)	-0.036	(0.031)
Male	0.012	(0.010)	0.011	(0.010)	0.012	(0.011)
Cohort 15	-0.198	(0.031) ***	-0.196	(0.031) ***	-0.188	(0.028) ***
Cohort 18	-0.026	(0.029)	-0.024	(0.028)	-0.012	(0.026)
1st Generation Immigrant	-0.034	(0.024)	-0.025	(0.023)	-0.028	(0.019)
2nd Generation Immigrant	-0.014	(0.016)	-0.012	(0.015)	-0.017	(0.012)
Family SES			-0.003	(0.003)	-0.001	(0.004)
Married Parents			-0.027	(0.015)	-0.029	(0.014) *

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

Note: Coefficients and standard errors for the neighborhood composition indicators have been divided by 10.

Figure 6-1. Age-Arrest Curves for Males by Race/Ethnicity, PHDCN Cohorts 12-18



neighborhood that is associated with arrest, even after controlling for the demographic composition of neighborhoods. When both the person-level dummy variables and their neighborhood aggregates are grand mean centered, as in equations (6.2) and (6.3), the coefficients for the race and ethnicity dummy variables are interpreted as the difference in arrest between black youth and youth of other racial and ethnic groups who reside in the same neighborhood. The coefficients for the neighborhood-level racial and ethnic composition variables are interpreted as the difference in arrest between two youth of the same given race and ethnicity who reside in different neighborhoods which have a one unit difference in racial and ethnic composition. In the present case, the unit is a 10% difference in composition. For example, the % White coefficient in Table 6-3, Model 3

refers to the difference in arrest between two white youth in neighborhoods differing by 10% in white population composition.

Focusing on the predictors of the intercept value (i.e. expected count of arrests at age 17), results show that white youth residing in the same neighborhood as black youth have an expected count of arrests that is 58% lower than black youth.[3] Similarly, Mexican youth have an expected count of arrests that is 17.4% lower than black youth, and for Puerto Rican/Other Latino youth the difference is 35.4%. As for the contextual effects, a 10% increase in the white composition of a neighborhood above the sample average equates to a mere 3.1% decrease in the expected count of arrests at age 17 for white youth.[4] A 10% increase in the Mexican composition of a neighborhood above the sample average equates to a 7.6% decrease in the expected count of arrests at age 17 for Mexican youth. Finally, a 10% increase in the Puerto Rican/Other Latino composition of a neighborhood above the sample average equates to an 8.2% increase in the expected count of arrests at age 17 for Puerto Rican/Other Latino youth. Overall these results suggest that much of the disparity in arrest is between members of various racial and ethnic groups within respective neighborhoods, and not so much between like individuals in different neighborhoods, particularly for white youth. However, research generally supports the notion that neighborhoods are more internally heterogeneous than externally differentiable, such that more within neighborhood variability in arrest should be expected than between neighborhood variability. Thus, in the next series of models,

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[3] The percentage change is computed as follows: $100*[\exp(\beta_{White}) - 1] = 100*[\exp(-0.868) - 1] = -58.0$

[4] The percentage change is computed as follows: $100*[\exp(\gamma_{White}) - 1] = 100*[\exp(-0.032) - 1] = -3.1$

predictors of neighborhood structure and social processes are added to determine which factors influence the probability of arrest.

Table 6-4 contains a condensed set of results, which excludes the individual- and family-level coefficients and standard errors for the slope terms in (3). The individual- and family-level coefficients from Models 4 through 6 associated with the age and quadratic age slopes are largely unchanged from those found in Models 2 and 3, so for the ease of presentation, attention is focused on the intercept term in (2). Model 4 includes a measure of concentrated poverty. The effects of residential stability, population density, and the percentage of foreign born residents on arrest were also examined in preliminary analyses, but each showed no significant association with arrest after controlling for relevant predictors and were removed from further analyses. Findings from Model 4 reveal that concentrated poverty is positively associated with arrest at age 17. However, the addition of concentrated poverty does not reduce the gap in arrest between black youth and youth from other groups. In fact, the addition of concentrated poverty actually leads to a small increase in the respective gaps.

In Model 5, four scales of self-reported offending are added. These measures are included in model specification after neighborhood factors are added because prior research has shown that these measures are affected by neighborhood-level processes and outcomes (see, e.g., Sampson et al. 2005). In preliminary analyses, a measure of group offending was also included in Model 5, but was removed because it is not significantly associated with arrest when controlling for self-reported offending. In Table 6-4 it can be seen that all self-reported offending indicators are significantly associated with the level

of arrest at age 17. Interestingly, the effect of property offending is negative after controlling for other predictors. This finding results because blacks have comparably low propensities for property offending (as shown in Table 6-2), but have been arrested considerably more often for property crimes than the other groups (as seen in Table 6-1). Further, property offending may be negatively related to arrest in aggregate, but positively associated with arrest for property crimes. Findings from Model 5 also show that the addition of offending does little to mediate the effect of neighborhood context on arrest. This finding suggests that the higher level of criminal offending in certain neighborhoods (e.g. neighborhoods characterized by concentrated poverty) does not explain why the probability of arrest given offending is higher in those neighborhoods.

In terms of racial and ethnic differences in arrest, the addition of offending to the model results in a decline in the size of the white coefficient from -0.880 to -0.845, a mere 4% drop. Furthermore, there is still a considerable difference in arrest between blacks and whites. This finding contrasts with previous research that concluded that differential involvement in crime explains a substantial portion of race differences in arrest and criminal case processing (Hindelang 1978). Part of the reason for such a modest reduction in the black-white gap is because analyses already include controls for covariates that are highly associated with arrest. Yet even the addition of these controls (e.g. family structure) in preceding models did little to explain the black-white arrest gap. Results from Model 5 also reveal that the addition of offending scales does not explain much of the black-Mexican gap in arrest, and actually leads to an increase in the black-Puerto Rican gap. Offending does explain a good portion of the differences in arrest

Table 6-4. Racial/Ethnic Disparities in Arrest, with Contextual Characteristics

	Model 4		Model 5		Model 6	
	Coef.	(SE)	Coef.	(SE)	Coef.	(SE)
Expected Count of Arrests, Age 17						
Intercept	-2.342	(0.063) ***	-2.537	(0.066) ***	-2.550	(0.066) ***
% White (NBHD)	0.017	(0.040)	0.035	(0.042)	0.029	(0.041)
% Mexican (NBHD)	-0.045	(0.032)	-0.034	(0.031)	-0.067	(0.032) *
% Puerto Rican/Other (NBHD)	0.084	(0.052)	0.102	(0.049) *	0.100	(0.050) *
% Other Race (NBHD)	0.397	(0.109) ***	0.417	(0.112) ***	0.404	(0.114) ***
Concentrated Poverty	0.286	(0.101) **	0.344	(0.102) **	0.206	(0.131)
Disorder					0.464	(0.347)
Nbhd Social Control					0.004	(0.278)
Chronic Truancy					0.377	(0.221)
White	-0.880	(0.254) ***	-0.845	(0.253) ***	-0.820	(0.253) **
Mexican	-0.202	(0.203)	-0.185	(0.197)	-0.175	(0.200)
Puerto Rican/Other Latino	-0.447	(0.213) *	-0.515	(0.204) *	-0.494	(0.211) *
Other Race/Ethnicity	-1.508	(0.427) ***	-1.648	(0.420) ***	-1.674	(0.377) ***
Male	1.598	(0.119) ***	1.440	(0.116) ***	1.475	(0.119) ***
Cohort 15	-0.678	(0.140) ***	-1.228	(0.157) ***	-1.200	(0.157) ***
Cohort 18	-0.785	(0.168) ***	-1.395	(0.195) ***	-1.400	(0.204) ***
1st Generation Immigrant	-0.726	(0.163) ***	-0.387	(0.162) *	-0.431	(0.168) *
2nd Generation Immigrant	-0.713	(0.170) ***	-0.604	(0.151) ***	-0.619	(0.157) ***
Family SES	-0.088	(0.049)	-0.078	(0.052)	-0.076	(0.053)
Married Parents	-0.525	(0.117) ***	-0.549	(0.119) ***	-0.527	(0.122) ***
Violence SRO			0.446	(0.089) ***	0.454	(0.087) ***
Property SRO			-0.319	(0.101) **	-0.302	(0.095) **
Public Order/Status SRO			0.493	(0.106) ***	0.416	(0.102) ***
Drug SRO			0.683	(0.334) *	0.637	(0.327) *
Age/Growth (per year)						
Intercept	0.553	(0.037) ***	0.579	(0.045) ***	0.570	(0.045) ***
% White (NBHD)	0.023	(0.022)	0.023	(0.021)	0.029	(0.023)
% Mexican (NBHD)	-0.017	(0.016)	-0.021	(0.014)	-0.023	(0.016)
% Puerto Rican/Other (NBHD)	0.046	(0.017) **	0.054	(0.019) **	0.053	(0.017) **
% Other Race (NBHD)	-0.025	(0.039)	-0.023	(0.033)	-0.029	(0.037)
Concentrated Poverty	-0.029	(0.032)	-0.019	(0.033)	-0.037	(0.045)
Disorder					-0.062	(0.117)
Nbhd Social Control					-0.158	(0.077) *
Chronic Truancy					0.465	(0.140) ***
Age^2						
Intercept	-0.116	(0.013) ***	-0.119	(0.014) ***	-0.119	(0.014) ***
% White (NBHD)	0.003	(0.003)	0.000	(0.003)	-0.001	(0.004)
% Mexican (NBHD)	0.006	(0.003) *	0.006	(0.003) *	0.008	(0.003) **
% Puerto Rican/Other (NBHD)	-0.004	(0.004)	-0.007	(0.005)	-0.007	(0.005)
% Other Race (NBHD)	-0.005	(0.009)	-0.006	(0.008)	-0.006	(0.009)
Concentrated Poverty	0.005	(0.005)	-0.004	(0.005)	0.005	(0.010)
Disorder					0.000	(0.029)
Nbhd Social Control					0.036	(0.019)
Chronic Truancy					-0.121	(0.043) **

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

Note: Coefficients and standard errors for the neighborhood composition indicators have been divided by 10.

across immigrant generations, and controlling for offending reveals that cohort differences in arrest are more pronounced than in previous models. Further, offending explains some of the gender difference in arrest.

To examine in more detail which specific characteristics of social context explain arrest controlling for offending, measures of physical disorder, neighborhood-level social control, and chronic truancy are included in Model 6. Results show that inclusion of these measures substantially weakens the association between concentrated poverty and arrest, reducing the size of the coefficient by 40%. While only the association between chronic truancy and arrest at age 17 is even marginally significant ($p = 0.087$), neighborhood social control is negatively and significantly associated with the *growth* in arrest, and truancy is positively associated with the *growth* in arrest. One implication of these findings is that the probability of arrest is higher in certain neighborhoods because these neighborhoods are lacking in social control. A second implication is that the probability of arrest is higher for chronically truant individuals even after controlling for behavior. One potential interpretation of this result is that the police are more likely to arrest a truant versus a non-truant, even if both have the same levels of criminal behavior, because chronic truants have more unstructured time and are not subject to controls by other means. In other words, police fill the void from the absence of school-level control.

6.5.3 Decomposition of Racial and Ethnic Differences in Arrest

Results to this point suggest that a number of key factors explain racial and ethnic differences in arrest. As the next step, analyses focus on explaining the gap in arrest

trajectories between blacks and other racial and ethnic groups by decomposing the difference in arrest into differences in specific attributes. Figure 6-2 displays the percent reduction in the gap in arrest *at age 17* between blacks and the other racial and ethnic groups that results when substituting the mean values of attributes from the other groups.[5] For example, findings from Model 6 revealed that there is a gap in the expected number of arrests of 0.29 between black and white males. The first set of columns in Figure 6-2 illustrates that 27% of this gap would hypothetically be reduced if blacks had the same family SES as whites (0.84 instead of 0.23) and same proportion of married parents (0.64 versus 0.30), both of which are negatively associated with arrest. This procedure, in effect, equalizes family structure across groups, and reveals how much of the arrest difference is due to the fact that blacks and whites live in distinct family contexts.

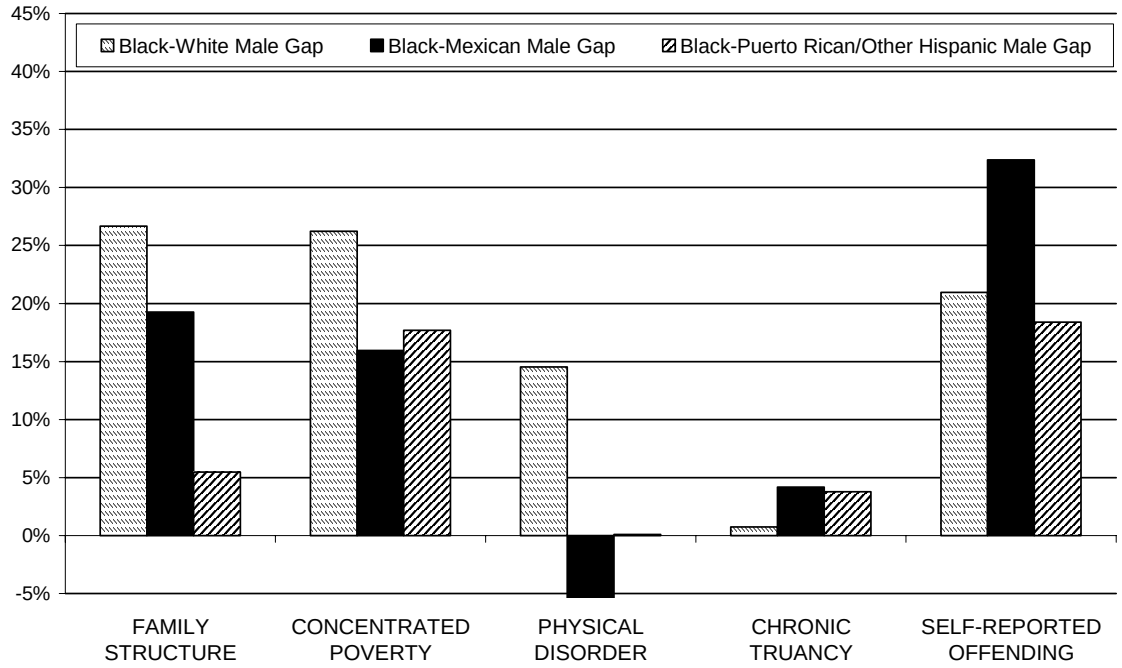
In Figure 6-2, the first bar in each set represents the black-white arrest difference at age 17, the second bar represents the black-Mexican difference, and the third bar presents the black-Puerto Rican/Other Latino difference. For the black-white difference, it can be seen that the greatest reductions in the arrest gap comes from equalizing the family structure variables (family SES and married parents) and levels of concentrated poverty. Equalizing levels of offending also reduces the arrest gap by a considerable amount. Equalizing levels of physical disorder reduces the gap by a moderate amount (15%), and equalizing levels of chronic truancy does little close the gap in arrest.

For the black-Mexican difference and the black-Puerto Rican/Other Latino differences, it can be seen that the greatest reduction in the arrest gap comes from

[5] The mean values for the five sets of attributes are equalized one at a time. Therefore, it is not appropriate to sum the differences explained for each set of attributes to compute the total difference explained.

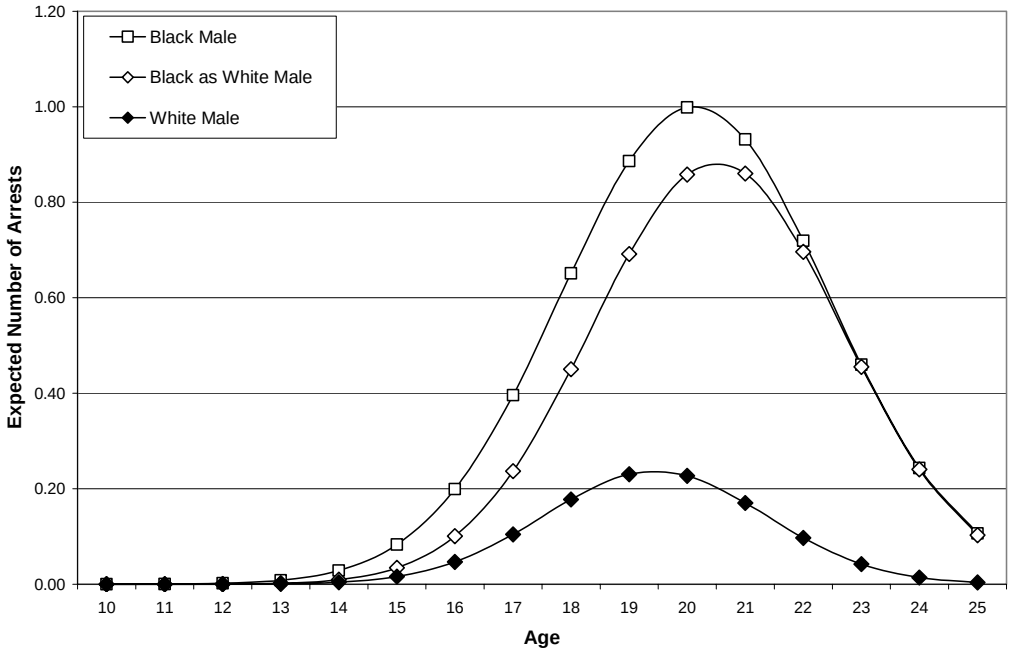
equalizing self-reported offending, family structure, and concentrated poverty. Equalizing levels of disorder has virtually zero effect on the black-Puerto Rican gap, and increases the black-Mexican gap. Equalizing levels of chronic truancy reduces the black-Mexican gap in arrest and the black-Puerto Rican gap by roughly four percent each. Overall, these results concerning social context suggest that even if blacks were situated in contexts similar to other racial and ethnic groups, they would still exhibit greater incidence of arrest independent of offending. Of course this finding is similar to conclusions from the comparison of person-level and contextual effects presented in Model 3 in Table 6-3.

Figure 6-2. Percent of Racial and Ethnic Arrest Differences at Age 17 Explained by Family, Neighborhood, Education, and Offending Differences



To conclude the decomposition analysis, Figure 6-3 displays age-arrest curves for black and white males, and the hypothetical black curve if all attributes from Model 6 in Table 6-4 were equalized across these two groups. This Figure illustrates that there is still a sizable unexplained area between the white male curve and the black-as-white male curve, and the gap is more pronounced at the peak ages of arrest. One key reason for the large residual gap even after equalizing attributes is because of the large white coefficient from Model 6 (-0.820). There was a large black-white gap in arrest at Model 1, and controlling for a number of relevant predictors does little to explain the gap. Therefore, equalizing attributes across groups will also do little to explain the black-white gap in arrest.

Figure 6-3. Age-Arrest Curves for Black vs. White Males



6.6 DISCUSSION

The primary objective of this study has been to refocus the discussion about racial and ethnic disparities in arrest by examining the role that social contexts play towards influencing the likelihood of arrest, even after controlling for criminal or delinquent offending. Given that youths from different racial and ethnic groups grow up, on average, in distinct social contexts, it is critical to move beyond individual-level explanations for racial and ethnic disparities in arrest, and instead broaden the focus to include contextual factors. Findings illustrate some support for the differential involvement argument for explaining racial and ethnic disparities in arrest, though the presence of large residual gaps in arrest between black youth and youth from other groups suggests that the discrimination argument may be more valid than the differential involvement thesis. Offending is highly associated with arrest, yet the addition of offending measures only reduced the gap in arrest between black and white youth and between white and Mexican youth by a minimal amount. Findings also show that family structure and neighborhood characteristics are predictive of arrest and group differences in arrest. It has been hypothesized that neighborhood context influences the probability of arrest independent of offending. Results reveal that arrest is not associated with residential stability, population density, or the neighborhood percentage of foreign born residents, but they do suggest that neighborhoods characterized by high levels of concentrated poverty have higher probabilities of arrest. Results also illustrate that the growth in arrest with age is negatively associated with neighborhood-level social control. That said, results from Model 3 in Table 6-3 show that disparities in arrest are, for the most part, found between

members of different racial and ethnic groups within the same neighborhood, and not so much between like individuals in different neighborhoods. Moreover, as seen in Figures 6-2 and 6-3, there is still a sizable unexplained gap between arrest trajectories of blacks and the other racial and ethnic groups. This gap is due to some unmeasured factor, which may include untested situational factors described at the outset of the paper or some unmeasured form of racial or ethnic bias in the criminal justice system. Taken together, all of these findings suggest that black youth face multiple layers of disadvantage that ultimately make it more likely for these youth to be arrested than youth from other racial and ethnic groups. Disadvantage comes in the form of unstable family structures, deleterious neighborhood conditions, and criminal justice system bias.

A number of findings warrant further discussion. It has been hypothesized that controlling for offending would mediate the association between the various neighborhood characteristics and arrest. However, findings reveal that controlling for offending does little to mediate the association between neighborhood context and arrest. The reason arrest is more likely in some neighborhoods, thus, is not because offending is more likely.

Findings also reveal that, besides race and ethnicity, significant demographic differences in arrest remain after controlling for offending. Most apparent is the sizable gender difference, which is potentially related to arguments presented in the theoretical review section of the paper about criminal stereotypes. Women may receive preferential treatment from the justice system because they are less likely to fit the image of a criminal. Certainly this argument has been made before. For example, Visher (1983)

finds that women who more closely resemble appropriate gender roles are less likely to be arrested during a police-suspect encounter. She also finds that gender interacts with situational factors to influence arrest decisions. For example, the presence of bystanders during a police-suspect encounter increases the likelihood of arrest for males, but not for females. More recent research confirms that women are still shown leniency by the police (Stolzenberg and D'Alessio 2004). While it is out of the scope of the present study to focus on gender differences in arrest, and whether changing gender roles in society have influenced differentials in police treatment, results presented in Tables 6-3 and 6-4 do support the findings from past research that gender differences in arrest are extant, independent of offending.

Moving to the issue of cohort differences in arrest, recall that the 15 year-old and 18 year-old cohorts were less likely to be arrested *at the same ages* than the 12 year-old cohort, and that the difference was even more pronounced after controlling for offending. One potential reason for this finding is reform of the juvenile justice system in Illinois, which was described in Chapter 4. Changes in the way arrests and station adjustments are reported may explain why there were significantly more arrests for the 12 year-old cohort than the other cohorts.

In summary, results support the hypothesis that the decision by police to arrest an offender is influenced by much more than the criminal act. A distinct ecological component exists within the sphere of police discretion, one which makes arrest more likely in certain neighborhoods. This ecological bias is one of the factors leading to racial and ethnic disparities in arrest. However, results in this study also reveal that there are

large differences in arrest for youth of different race and ethnicity in the same neighborhood, independent of their propensity to offend. Moreover, after controlling for a host of relevant factors, sizable racial and ethnic differences in arrest still remain. It is thus likely that other sources of racial and ethnic bias not measured in this study exist, which may include bias from law enforcement personnel or bias from victims and citizen bystanders.

CHAPTER 7

THE INFLUENCE OF NEIGHBORHOOD SOCIAL ORGANIZATION ON SCHOOL SOCIAL ORGANIZATION

7.1 INTRODUCTION

In Chapter 2, I outlined a theoretical framework to guide my investigation of neighborhood effects and school effects, arguing that each has independent effects on various youth outcomes. Central to this framework is the idea of social control, and within that, a determination of which aspects of social organization bring about the social control of youth behavior. As Kornhauser (1978, p. 74) observes, "[C]ontrol theorists assume that all controls are social in that they originate and are maintained in social relationships." Thus, a relational approach is useful for addressing the conception of social control, in that the structure and characteristics of social ties and social networks determine the capacity with which a social unit (i.e. neighborhood or school) can engage in corporate action. Prior to examining the effects of neighborhood and school controls on youth behavior, it is pertinent to examine the factors that influence the structure of social relations within and between neighborhoods and schools. Prior research has examined the factors contributing to neighborhood social organization in Chicago (see, e.g., Sampson et al. 1997), but it still remains to be answered which factors influence school social organization. Neoinstitutional arguments described in Chapter 2 suggest that neighborhood social organization is just one factor influencing school social organization, with other factors including state regulatory practices, professional associations and labor memberships, and competition among schools (Arum 2000). One

generic hypothesis that follows from neoinstitutionalist arguments is that the social organization of schools is significantly correlated with the social organization of neighborhoods, though the correlation is likely to be weak.

In this chapter, I examine the question as to whether school social organization is simply a product of neighborhood organization. In a more practical sense, I want to determine if *bad* schools, generically defined, are necessarily located in *bad* neighborhoods. The implication for social control and youth behavior is such that if school organization is a product of forces from beyond the neighborhood, then it may be possible to erect *good* schools that can offset the effects of *bad* neighborhoods.

Through a series of descriptive and inferential analyses to follow, I essentially want to determine to what extent the social organization of elementary schools reflect that of the surrounding neighborhood community. In terms of specific research questions, I seek to answer the following:

1) Is the composition of a given school, in terms of race, ethnicity, and socioeconomic status, reflective of the demographic composition of the surrounding neighborhood?
2) What is the association between the quality of social ties between teachers and parents and neighborhood-level social capital?
3) What is the association between school-level collective efficacy and neighborhood-level collective efficacy?
4) What is the association between the quality of ties between students and teachers and neighborhood-level collective efficacy?
5) What is the association between the local school council's contribution to school improvement and teacher-parent trust? And school collective efficacy? And student-teacher trust?

As described in previous chapters, neighborhood social capital and collective efficacy represent different aspects of local social ties and the application of these ties towards collective goals. I seek to determine the influence of these aspects of neighborhood social relations on school social relations. Further, in this study I pay considerable attention to the notion of the articulation between schools and neighborhoods (Janowitz 1975). Thus, I am interested in determining the consequences of the isolation of schools from neighborhood communities for social control and youth behavior. Accordingly, the last research question specified above addresses whether the articulation between schools and neighborhoods, in terms of the local governance of schools, has any significant influence on the social organization of schools. Briefly, in 1988, the Illinois State Legislature enacted a series of school reforms with the goal of decentralizing the governance of schools by shifting power over decision-making from professional educators at the Chicago Board of Education and central administration to school staff and members of the local community (Hess 1991). Reforms mandated that power of school decision-making be given to an 11-member local school council (LSC) for each school. Of the 11 members, 6 are elected parents of school children, 2 are elected community members from the attendance area served by the school, 2 are teachers from the school, and the last member is the school's principal. Thus, the local school council represents a tie between the neighborhood community and the school. I am interested in the extent to which this tie is related to other types of social relations within schools, as well as to social control.

7.2 DATA AND RESEARCH DESIGN

The study samples are drawn from the 1997 Student Survey of the Chicago Public Schools and Teacher Survey of the Chicago Public Schools. Detailed information about the samples is provided in Chapter 3.

7.2.1 Dependent Variables

Three dependent variables are utilized in this chapter: Teacher-Parent Trust, School Collective Efficacy, and Student-Teacher Trust. The first, Teacher-Parent Trust, is a Rasch measure describing the extent to which teachers feel that they have mutual respect and trust with student parents, and that parents support their efforts in educating their children. The measure of School Collective Efficacy is a Rasch measure derived from a total of 13 survey items that tap the constructs of collective responsibility among teachers and social cohesion/trust among teachers. Both Teacher-Parent Trust and School Collective Efficacy are derived from the 1997 Teacher Survey of the Chicago Public Schools. Finally, Student-Teacher Trust is a Rasch measure constructed from student responses to the 1997 survey. This measure reflects the quality of social relations between students and teachers. For all three Rasch measures, the scale units are logits, with each measured on an interval scale. Individual survey items used to derive each scale are listed in Appendix C.

7.2.2 Independent Variables

Included in the statistical models are a number of predictors describing the structural characteristics of schools, as well as indicators of the social organization of schools. Structural predictors include: Percent of Students who come from Low-Income Families, Student Mobility, Percent of Black Students, Percent of Latino Students, and School Type (i.e. general, magnet). The percent of students in a given school who are low-income is computed as the percent of students who are signed up for free or reduced priced lunch. Student mobility is computed as the number of enrollments in and transfers out of a school after October 1 of a given school year, divided by the student population on October 1.

The following school social organizational predictors are utilized in analyses: Local School Council (LSC) Influence on School Improvement, Parental Support for Learning, Quality of Professional Development for Teachers, School Focus on Student Learning, School Safety, Student Behavior in Class, Student Interest in School, Teacher Commitment to School, Teacher Concern for Students, Teacher Influence in School Decision-Making, Teacher Ties to the Community, and Teacher-Principal Trust. All measures are derived from either student or teacher responses and are aggregated to the school-level. Also note that the dependent variables School Collective Efficacy and Teacher-Parent Trust are used as independent predictors in analysis of the third dependent variable, Student-Teacher Trust. Teacher and student survey items used to derive each scale are listed in Appendix C.

The following characteristics of neighborhood structure are all derived from 1990 census data: Racial and Ethnic Composition of Neighborhood, Percent Below Poverty, Concentrated Disadvantage, Residential Stability, Immigrant Concentration, and the Percent of Elementary and High School Students residing in a given neighborhood who attend Public School. Two measures of neighborhood social processes derive from the PHDCN Community Survey: Social Capital and Collective Efficacy. Listed in Appendix A are PHDCN Community Survey questions used to derive each of these scales.

7.3 ANALYTIC STRATEGY AND STATISTICAL MODELS

Analyses to follow will sequentially address the research questions presented in Section 7.1. To start, I descriptively compare the demographic composition of schools with the composition of neighborhoods. Following this, I examine the correlates of three school measures: Teacher-Parent Trust, School Collective Efficacy, and Student-Teacher Trust. While I do examine the school predictors of these measures, my main interest is in examining the neighborhood predictors. To undertake analyses, I first graph each of these three measures against relevant neighborhood-level predictors (i.e. Neighborhood Social Capital and Neighborhood Collective Efficacy) using a scatterplot, where the points represent individual schools. I also include a smoothed mean line of the points in the graphs. The scatterplot graphs allow for a visual assessment of the bivariate association between Teacher-Parent Trust, School Collective Efficacy, and Student-Teacher Trust with either Neighborhood Social Capital or Neighborhood Collective Efficacy. In addition to graphing these associations, I also represent the associations in tabular format

by ranking and then partitioning each continuous measure into three equally sized groups, and then by cross-tabulating these groupings (i.e. contingency tables).

Following these bivariate assessments, I perform a series of multilevel regression analyses for each of the three dependent measures. In each analysis, I regress the school-level dependent variable on school and neighborhood predictors. To do so, I utilize a two-level linear regression model with elementary schools nested within neighborhoods.

7.4 RESULTS

7.4.1 School Composition Versus Neighborhood Composition

Critical to examining the relation between school composition and neighborhood composition is recognition of the realities of school segregation in Chicago. In 1980, the Chicago Public Schools, under threat of suit from the U.S. Department of Justice for allowing segregated schools, agreed to a court ordered Desegregation Consent Decree. In terms of specific policies, CPS' desegregation plan mandated the following: 1) the creation of racially-mixed magnet schools, 2) a cap on white enrollment in any one school of no more than 65 percent of the student body, and 3) a requirement that the racial and ethnic composition of each school's faculty fall within 15 percentage points of the racial and ethnic make-up of the district's entire teaching force (Weissmann 2006).

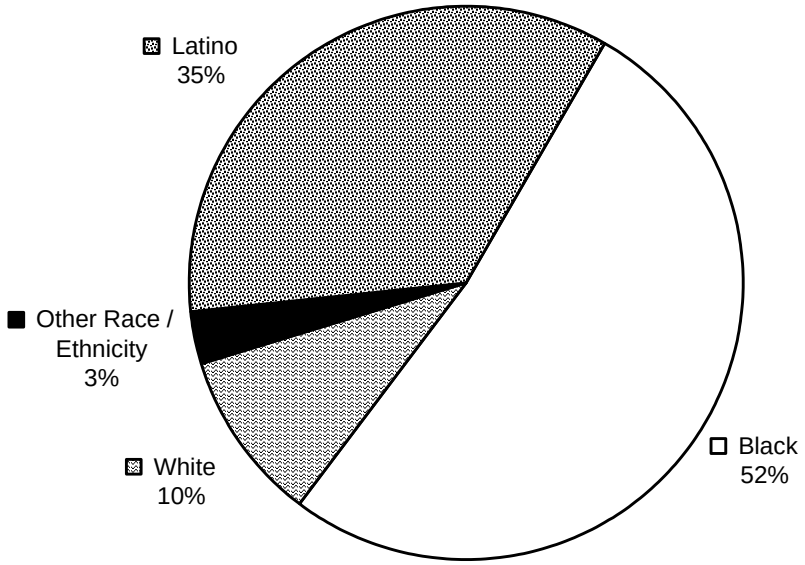
Of note, U.S. District Court Judge Charles Kocoras modified the consent decree in 2004, with one future possibility being the end of federal oversight over the decree by the end of the 2005-2006 school year (Catalyst Chicago 2006; Chicago Public Schools 2006b). As the Chicago Public Schools phrased it, their desire is "to get out from under

the consent decree" (Chicago Public Schools 2006b, p.1). At least part of the reason for modifying the original decree was due to the reality that true racial and ethnic integration of the Chicago Public Schools is not possible when white students make up just 10 percent of the student body (Frankenberg, Lee, and Orfield 2003). As shown in Figure 7-1, this percentage contrasts with the racial and ethnic composition of the city as a whole, per the 2000 U.S. census: 5% Asian/Pacific Islander or Other, 37% Black, 26% Latino, and 32% White. For the 2000-2001 school year, the composition of the Chicago Public Schools equaled: 3% Asian/Pacific Islander or Other, 52% Black, 35% Latino, and 10% White (Frankenberg et al. 2003). In sum, the composition of the public schools, on average, does not match the composition of the city, though the differences in composition likely vary across neighborhoods. Despite desegregation efforts throughout the last three decades, Chicago Public Schools are largely segregated due to the fact that many white families have opted for alternative school options.

Figure 7-2 presents further comparison of school and neighborhood demographics: the percentage of black students in a school relative to the percentage of black population in the neighborhood where the school is located. One conclusion that follows from Figure 7-2 is that the population of the Chicago Public Schools tends to be made up of proportionally more black individuals than found in Chicago neighborhoods. In fact, in 16% of Chicago Public Schools, the percentage of black students in the school eclipses the percentage of black residents in the surrounding neighborhood by more than 20%. Yet, there are some schools where the percentage of black composition is less than that found in the surrounding neighborhood. In 16% of schools, the percentage of black

Figure 7-1. Comparison of School and Neighborhood Composition

Ave. Racial/Ethnic Composition of the Chicago Public Schools, 2000



Ave. Racial/Ethnic Composition of the Chicago Neighborhoods, 2000

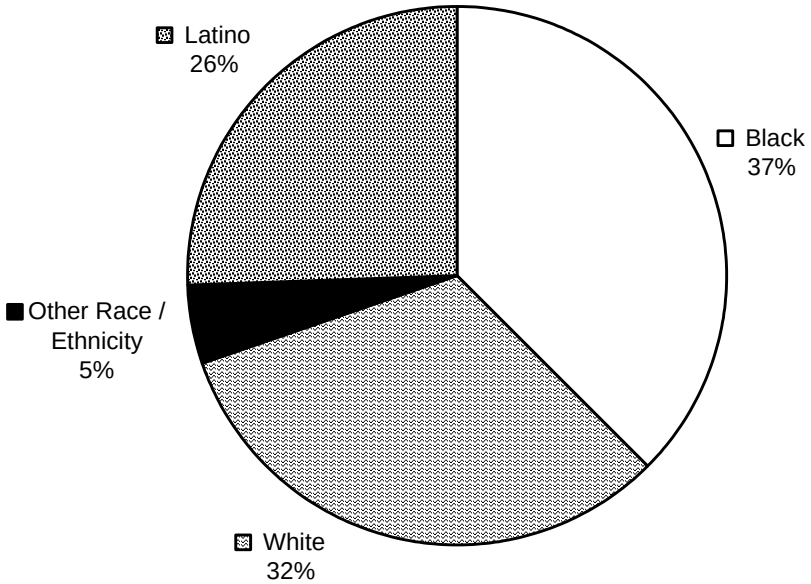
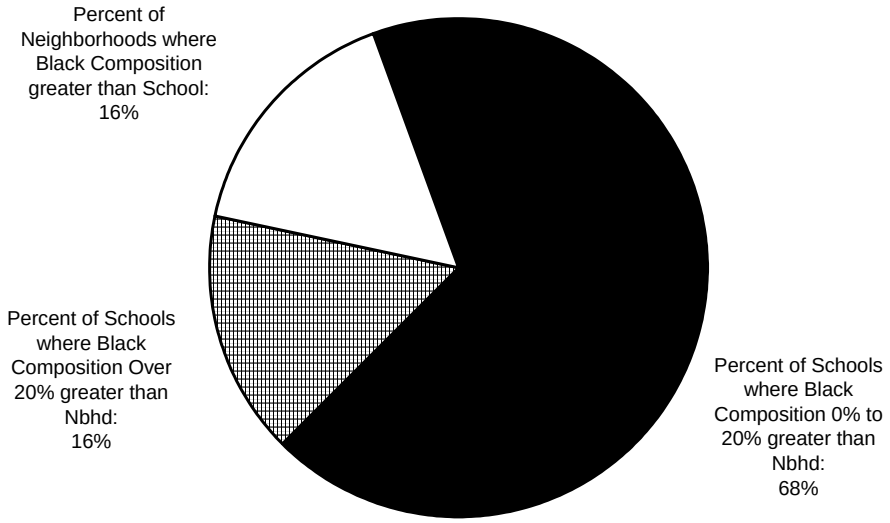


Figure 7-2. Black School Composition Versus Black Nbhd Composition



composition is lower in school than in the neighborhood. In just 5% of schools (29 out of 561 schools) is the percentage of white composition greater than that in the surrounding neighborhood, with the difference inconsequential across most of the 29 schools.

Moving to an examination of poverty, school poverty is calculated as the percent of students who are signed up for free or reduced priced lunch, while neighborhood poverty is defined as the percentage of neighborhood families below the poverty line. Given that the two poverty measures are constructed in different ways, I use a rank correlation (Spearman's rho) to assess the divergence across poverty measures. With this correlation, schools are ranked according to the proportion of students (for schools) or families (for neighborhoods) below poverty. The correlation will equal one if the exact

ranking of schools in terms of poverty matches the ranking in terms of neighborhood poverty. Findings reveal that rho equals 0.603. As expected, there is a very strong correspondence between the two poverty measures. Yet, it is not the case that the rank ordering of each measure is identical. There are many schools where there are far more impoverished students than impoverished families in the surrounding neighborhood.

7.4.2 Teacher-Parent Trust Versus Neighborhood Social Capital

Displayed in Figure 7-3 is the association between Teacher-Parent Trust and Neighborhood-level Social Capital. This figure shows that there is positive correlation (0.167, $p < 0.001$) between Teacher-Parent Trust and Social Capital. While significant, the correlation is weak, as evidenced by the large cloud of points in the center of the

Figure 7-3. Association Between Teacher-Parent Trust and Neighborhood Social Capital
Chicago Public Schools 1997

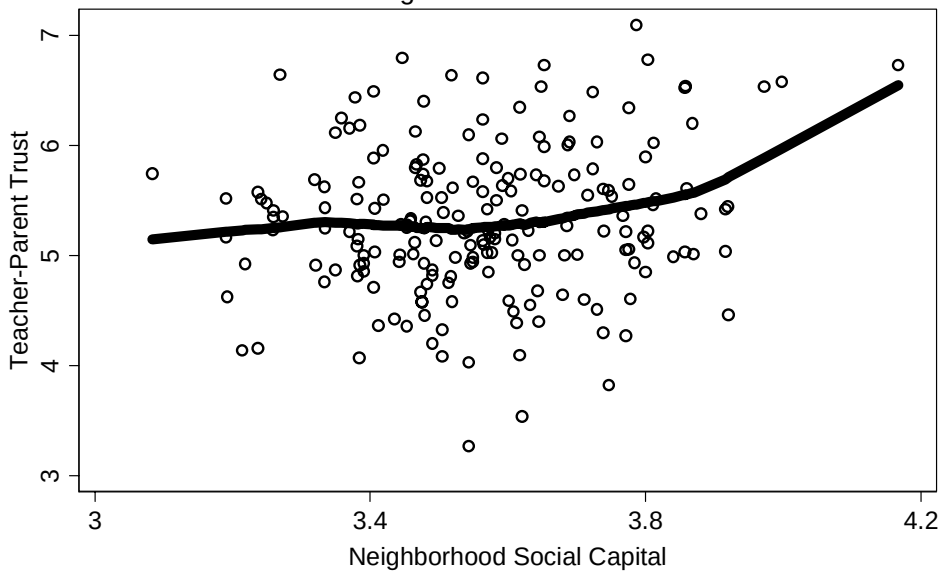


figure. Overall, one potential conclusion garnered from this figure is that quality of ties among school teachers and parents does not necessarily reflect the quality of ties among neighborhood parents. In other words, Neighborhood Social Capital does not necessarily translate into social capital in schools.

As another means of examining association, I cross-tabulate Teacher-Parent Trust and Neighborhood Social Capital. For this table, schools and neighborhoods are divided into thirds on continuums from lowest to highest levels of Teacher-Parent Trust and Neighborhood Social Capital, respectively. In Table 7-1, it can be seen that forty-three schools fall within the lowest third of the Neighborhood Social Capital distribution yet still have high levels of Teacher-Parent Trust. These schools potentially serve as a buffer for the lack of quality social ties and social control in the surrounding neighborhood. In contrast, there are thirty-one schools located in neighborhoods with high levels of social capital that have low levels of Teacher-Parent Trust.

Table 7-1. Cross-tabulation Between Teacher-Parent Trust and Nbhd Social Capital

	Teacher-Parent Trust		
Nbhd Social Capital	Lowest	Middle	Highest
Lowest	46	43	43
Middle	57	46	31
Highest	31	44	60

Kendall's *tau-b* = -0.106

Note: Cell counts refer to the number of schools.
Because of ties in ranking, cells proportions may not equal thirds.

Table 7-2 displays results from a series of regression analyses of Teacher-Parent Trust. Results from Model 1 reveal that Teacher-Parent Trust is lower in schools with greater proportions of low-income students and more student mobility. High student mobility thwarts the ability of teachers and parents to establish lasting relational bonds. Results from Model 2 show that Teacher Ties to the Community, Teacher Commitment, and Local School Council Influence are all significantly associated with Teacher-Parent Trust. Standardized beta coefficients reveal that Teacher Commitment is the most important predictor of Teacher-Parent Trust, likely because committed teachers are more apt to reach out to parents and parents are more likely to trust committed teachers relative to uncommitted teachers. Results also show that inclusion of measures in Model 2 mediates the association between Teacher-Parent Trust and student income and mobility. It reasons that schools with high proportions of low-income students and mobile students are lacking in Teacher Ties to the Community, Teacher Commitment, and LSC Influence.

Results from Model 3 are much the same as in Model 2. None of the neighborhood-level predictors added in Model 3 are significantly associated with Teacher-Parent Trust. Furthermore, while non-significant, the coefficient for the association between Teacher-Parent Trust and Neighborhood Social Capital is actually negative. Recall from Figure 7-3 that the association between these two measures may in fact be nonlinear, such that Model 3 may be miss-specified. To examine this possibility, I reran Model 3, this time excluding the predictor of Neighborhood Social Capital (results not shown). I then computed the residuals from this model, and plotted these residuals against Neighborhood Social Capital in Figure 7-4. This figure reveals that the

association between Teacher-Parent Trust and Neighborhood Social Capital, net of the effects of other predictors, is for the most part linear. To double-check this assumption, I added a squared term of social capital to the original Model 3, and find that neither of the social capital terms is significantly associated with Teacher-Parent Trust.

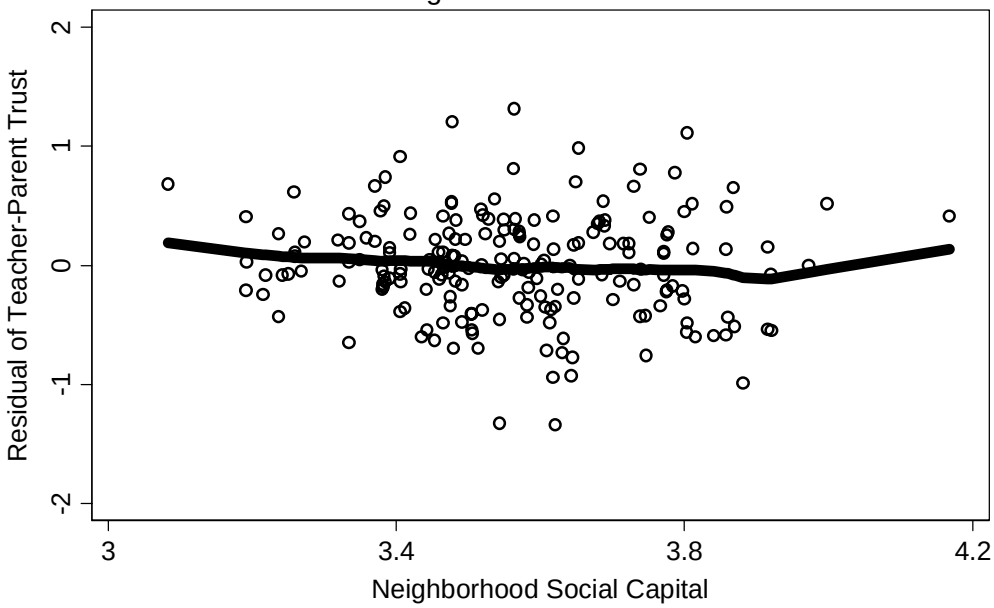
Results show that there is little association between the extent of teacher-parent ties and the extent of parent-to-parent ties in the neighborhood. Again, while non-significant, the coefficient of Neighborhood Social Capital is negative. Why is social capital unrelated or negatively related to teacher-parent ties? One potential answer is that families in high social capital neighborhoods may be more likely to send their children to private or parochial schools than in low social capital neighborhoods. If that is the case, then the high Neighborhood Social Capital may not be a resource that can be drawn upon for the purposes of public schooling. To test this explanation, in Model 4 I add a census indicator of the percentage of elementary and high school students residing in a given neighborhood who attend public school. Results show that the inclusion of this indicator mediates the association between Teacher-Parent Trust and Neighborhood Social Capital (the coefficient declines from -0.370 to -0.155). Nonetheless, findings still suggest that the extent of teacher-parent relations is unrelated to the extent of social capital.

Table 7-2. School and Neighborhood Covariates of Teacher-Parent Trust, CPS Elementary 1997

	Model 1			Model 2			Model 3			Model 4		
	Coef.	(SE)	Beta	Coef.	(SE)	Beta	Coef.	(SE)	Beta	Coef.	(SE)	Beta
Intercept	6.337	(0.139) ***		3.103	(0.833) ***		4.760	(1.329) ***		3.438	(1.290) ***	
School-Level												
% Black Students	-0.001	(0.002)	-0.052	0.002	(0.003)	0.138	0.004	(0.003)	0.270	0.001	(0.003)	0.080
% Latino Students	0.003	(0.002)	0.143	0.003	(0.003)	0.121	0.003	(0.003)	0.121	0.001	(0.003)	0.056
% Low-Income Students	-0.010	(0.003) ***	-0.317	-0.005	(0.003)	-0.153	-0.006	(0.003) *	-0.178	-0.009	(0.003) ***	-0.276
Student Mobility	-0.007	(0.002) ***	-0.184	-0.005	(0.003) *	-0.108	-0.006	(0.003) **	-0.141	-0.007	(0.003) **	-0.148
Magnet School	0.018	(0.142)	0.007	0.205	(0.128)	0.089	0.115	(0.142)	0.050	0.065	(0.145)	0.028
Parent Support for Learning				-0.036	(0.125)	-0.019	-0.048	(0.123)	-0.025	-0.037	(0.118)	-0.019
School Safety				0.107	(0.100)	0.092	0.095	(0.099)	0.081	0.098	(0.098)	0.084
Teacher Ties to Cmty				0.091	(0.044) **	0.115	0.054	(0.050)	0.069	0.062	(0.048)	0.079
Teacher Commitment				0.185	(0.035) ***	0.387	0.183	(0.033) ***	0.382	0.182	(0.033) ***	0.380
LSC Influence				0.121	(0.026) ***	0.229	0.123	(0.026) ***	0.235	0.137	(0.026) ***	0.260
Neighborhood-Level												
Nbhd Conc Disadvantage							-0.126	(0.055) **	-0.210	-0.177	(0.058) ***	-0.295
Nbhd Immigrant Concent							-0.004	(0.059)	-0.005	-0.049	(0.059)	-0.065
Nbhd Residential Stability							-0.051	(0.044)	-0.076	-0.044	(0.044)	-0.065
Nbhd Social Capital							-0.370	(0.252)	-0.101	-0.155	(0.248)	-0.042
Nbhd Prop Public Studs										1.128	(0.376) ***	0.327
R-Squared	0.233			0.567			0.590			0.608		

* p<=0.10 ** p<=0.05 *** p<=0.01

Figure 7-4. Residual of Teacher-Parent Trust by Neighborhood Social Capital
Chicago Public Schools 1997



7.4.3 School Collective Efficacy Versus Neighborhood Collective Efficacy

Figure 7-5 depicts the association between the two contextual measures of collective efficacy, one characterizing social ties within schools and the other characterizing ties within neighborhoods. This figure shows that there is weak, positive correlation (0.244, $p < 0.001$) between School Collective Efficacy and Neighborhood Collective Efficacy.

In Table 7-3 I present a cross-tabulation of measures, this time with each indicator of collective efficacy. In this table, it can be seen that thirty-eight schools fall within the lowest third of the Neighborhood Collective Efficacy distribution yet still have high levels of School Collective Efficacy. In contrast, there are thirty-one schools located in

Figure 7-5. Association Between School Collective Efficacy and Nbhd Collective Efficacy
Chicago Public Schools 1997

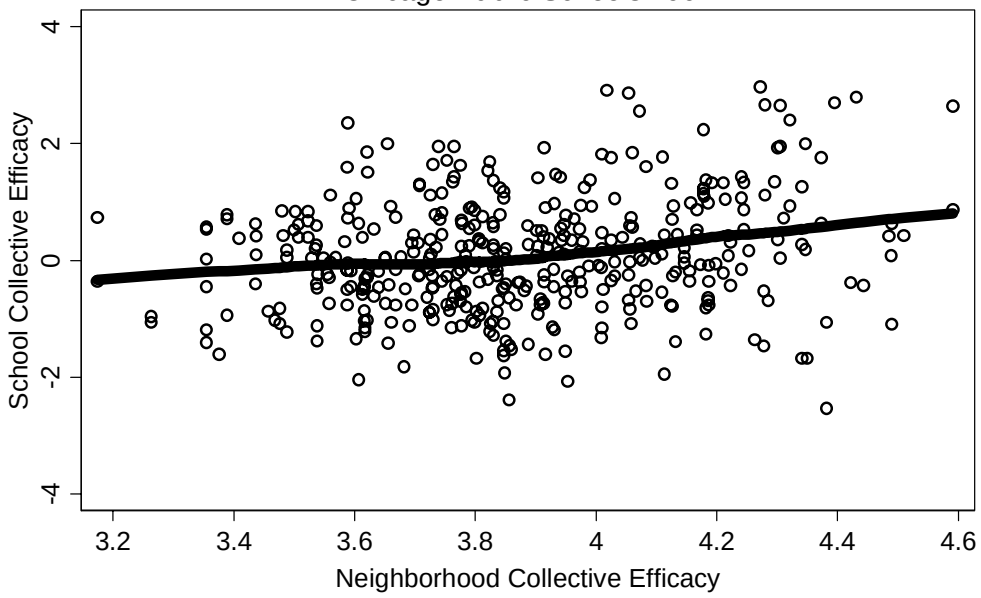


Table 7-3. Cross-tabulation Between School Coll Efficacy and Nbhd Coll Efficacy

	School Coll Efficacy		
Nbhd Coll Efficacy	Lowest	Middle	Highest
Lowest	50	47	38
Middle	53	44	36
Highest	31	43	59

Kendall's *tau-b* = 0.132

Note: Cell counts refer to the number of schools.
Because of ties in ranking, cells proportions may not equal thirds.

neighborhoods with high levels of collective efficacy that have low levels of School Collective Efficacy. Recall that both measures of collective efficacy are tapping shared expectations for action and social cohesion and trust. Figure 7-5 and Table 7-3 illustrate that high levels of Neighborhood Collective Efficacy do not necessarily translate into high levels of School Collective Efficacy. This finding begs the question, what factors are associated with, or predictive of, school level collective efficacy? Analyses presented in Table 7-4 attempt to answer this very question.

Results in Model 1 in Table 7-4 reveal that School Collective Efficacy is associated with the proportion of low-income students in a given school as well as with student mobility. Results from Model 2 reveal that much of the association between these school structural characteristics and School Collective Efficacy is mediated by school social organizational measures. Results show that Teacher Commitment and Local School Council Influence are significantly associated with School Collective Efficacy. School Focus on Learning is also predictive of School Collective Efficacy, and has the largest standardized beta coefficient of all predictors. Recall that the measure of School Focus on Learning indicates the extent to which the school sets high standards for academic performance and is organized to improve learning. Results in Model 2 suggest that a clear school-level focus and mission is a driver for collective efficacy.

Results from Model 3 are much the same as in Model 2. None of the neighborhood-level predictors added in Model 3 are significantly associated with School Collective Efficacy. Neighborhood Collective Efficacy has a weak (non-significant) positive association with School Collective Efficacy.

Table 7-4. School and Nbhd Covariates of School Collective Efficacy, CPS Elementary 1997

	Model 1			Model 2			Model 3		
	Coef.	(SE)	Beta	Coef.	(SE)	Beta	Coef.	(SE)	Beta
Intercept	1.401	(0.382) ***		-3.433	(0.534) ***		-3.906	(1.338) ***	
School-Level									
% Black Students	-0.002	(0.004)	-0.103	0.003	(0.003)	0.108	0.004	(0.004)	0.163
% Latino Students	-0.001	(0.005)	-0.028	0.001	(0.003)	0.030	0.000	(0.003)	-0.012
% Low-Income Students	-0.011	(0.006) *	-0.214	-0.003	(0.004)	-0.065	-0.004	(0.005)	-0.084
Student Mobility	-0.010	(0.004) ***	-0.156	-0.001	(0.003)	-0.016	-0.001	(0.003)	-0.016
Magnet School	0.413	(0.293)	0.114	0.354	(0.203) *	0.098	0.326	(0.212)	0.090
Teacher Influence				-0.067	(0.099)	-0.057	-0.071	(0.103)	-0.060
Sch. Focus on Learning				0.307	(0.095) ***	0.393	0.317	(0.096) ***	0.406
Quality Prof. Development				-0.017	(0.079)	-0.011	-0.028	(0.080)	-0.018
Teacher-Principal Trust				0.131	(0.086)	0.147	0.136	(0.089)	0.152
Teacher Commitment				0.196	(0.088) **	0.274	0.197	(0.086) **	0.276
LSC Influence				0.071	(0.033) **	0.092	0.073	(0.034) **	0.095
Neighborhood-Level									
Nbhd Conc Disadvantage							0.018	(0.074)	0.020
Nbhd Immigrant Concent							0.100	(0.074)	0.093
Nbhd Residential Stability							-0.052	(0.050)	-0.052
Nbhd Collective Efficacy							0.130	(0.294)	0.034
* p<=0.10 ** p<=0.05 *** p<=0.01									
R-Squared	0.187			0.634			0.638		

7.4.4 Student-Teacher Trust Versus Neighborhood Collective Efficacy

Results thus far suggest that the quality of neighborhood social ties does not have a substantial bearing on the quality of social ties between teachers or between teachers and parents. However, it still remains to be seen whether neighborhood social ties have an influence on relations between students and teachers.

Displayed in Figure 7-6 is the association between Student-Teacher Trust and Neighborhood Collective Efficacy. This figure shows that there is a non-linear association between these two measures. The association between Student-Teacher Trust and Neighborhood Collective Efficacy appears to be positive in the left tail of the Neighborhood Collective Efficacy distribution, and flat in the middle range and right tail.

Figure 7-6. Association Between Student-Teacher Trust and Nbhd Collective Efficacy
Chicago Public Schools 1997

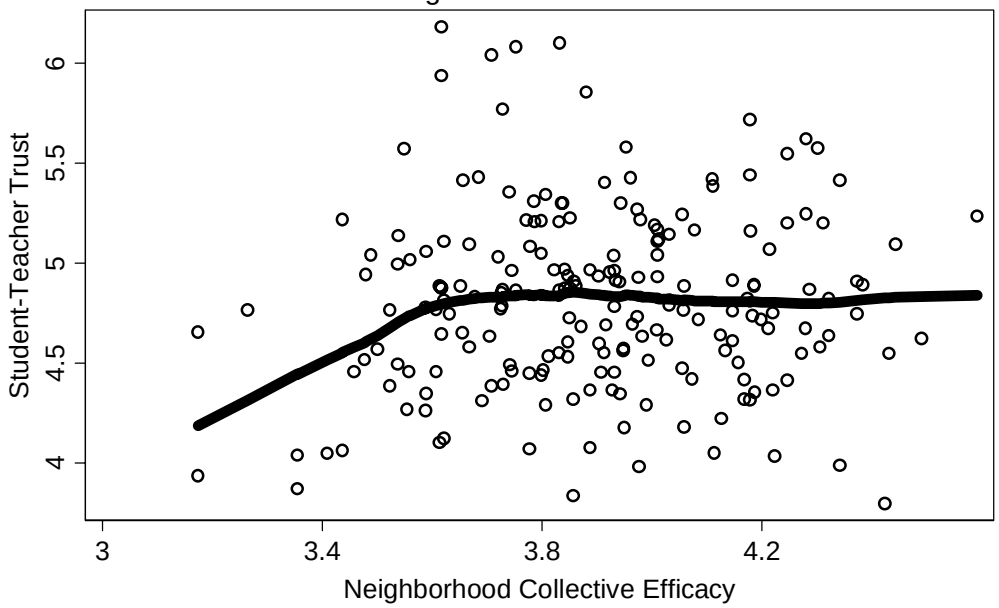


Table 7-5 displays the cross-tabulation between Student-Teacher Trust and Neighborhood Collective Efficacy. Here, it can be seen that there are virtually identical proportions of schools across the three categories of Neighborhood Collective Efficacy. Thus, it is not surprising that the association between these two measures, per Kendall's *tau-b*, is essentially zero. Results presented next in Table 7-6 will be used to determine if this relationship holds after controlling for other relevant predictors.

Table 7-5. Cross-tabulation Between Student-Teacher Trust and Nbhd Coll Efficacy

	Student-Teacher Trust		
Nbhd Coll Efficacy	Lowest	Middle	Highest
Lowest	42	42	38
Middle	41	41	40
Highest	41	42	46

Kendall's *tau-b* = 0.032

Note: Cell counts refer to the number of schools.
Because of ties in ranking, cells proportions may not equal thirds.

Results in Model 1 from Table 7-6 reveal that Student-Teacher Trust is lower in schools with greater proportions of black students. However, the R-squared statistic of 0.028 suggests that very little of the variability in Student-Teacher Trust is explained by the school structural predictors included in Model 1. Model 2 is estimated with a number of school organizational predictors added to the structural indicators included in Model 1. Results show that students' interest in academics is highly associated with their relations with teachers. However, the direction of causality from this association is uncertain. Student-Teacher Trust may increase as a student's interest in school increases. Or, a student may be more interested in school if she or he has trusting relations with teachers.

Results in Model 2 also show that the extent of attention and concern that teachers give students is positively associated with Student-Teacher Trust. In fact, Concern for Students has the greatest association with the Student-Teacher Trust of any of the covariates included in Model 2.

Results in Model 3 reveal that the only neighborhood-level predictor associated with Student-Teacher Trust is residential stability. Student-Teacher Trust is more likely in neighborhoods with high levels of residential stability. Just as the systemic model of

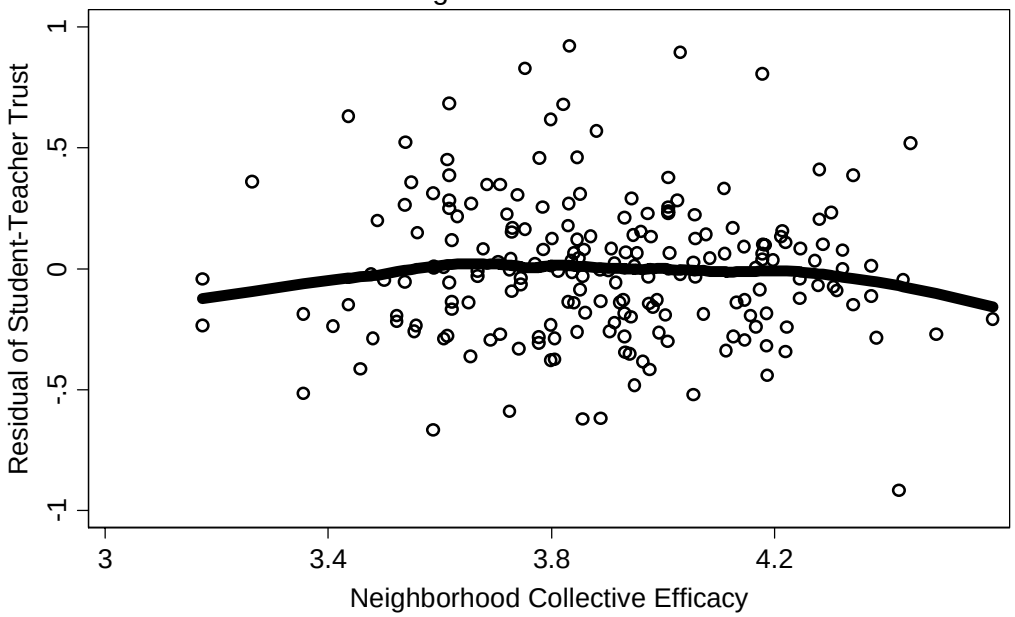
local community organization suggests, length of residence influences the capacity of neighborhood residents to establish social bonds, which apparently includes bonds between students and teachers (Kasarda and Janowitz 1974).

Results in Model 3 suggest that there is an insignificant (positive) association between Neighborhood Collective Efficacy and Student-Teacher Trust. However, recall from Figure 7-6 that the association between these measures may in fact be nonlinear. Thus, I reran Model 3, this time excluding the predictor of Neighborhood Collective Efficacy. I then computed the residuals from this model, and plotted these residuals against Neighborhood Collective Efficacy in Figure 7-7. This figure reveals that the relation between Student-Teacher Trust and Neighborhood Collective Efficacy still resembles a nonlinear association. Consequently, I added a squared term of Neighborhood Collective Efficacy in Model 4. However, results demonstrate that neither of the collective efficacy terms is significantly associated with Student-Teacher Trust.

Table 7-6. School and Neighborhood Covariates of Student-Teacher Trust, CPS Elementary 1997

	Model 1			Model 2			Model 3			Model 4		
	Coef.	(SE)	Beta	Coef.	(SE)	Beta	Coef.	(SE)	Beta	Coef.	(SE)	Beta
Intercept	4.949	(0.140) ***		0.199	(0.680)		0.553	(0.914)		-4.924	(4.026)	
School-Level												
% Black Students	-0.003	(0.002) *	-0.299	-0.006	(0.002) ***	-0.576	-0.006	(0.002) ***	-0.599	-0.006	(0.002) ***	-0.602
% Latino Students	-0.003	(0.002)	-0.218	-0.005	(0.002) ***	-0.359	-0.006	(0.002) ***	-0.437	-0.006	(0.002) ***	-0.447
% Low-Income Students	0.001	(0.002)	0.028	0.001	(0.002)	0.056	0.002	(0.002)	0.093	0.001	(0.002)	0.045
Student Mobility	0.003	(0.003)	0.099	0.001	(0.002)	0.042	0.001	(0.002)	0.048	0.001	(0.002)	0.048
Magnet School	-0.094	(0.120)	-0.061	0.018	(0.111)	0.011	0.037	(0.109)	0.024	0.015	(0.112)	0.010
Interest in School				0.304	(0.071) ***	0.276	0.331	(0.073) ***	0.300	0.326	(0.074) ***	0.295
Student Behavior in Class				0.018	(0.147)	0.010	0.013	(0.146)	0.008	-0.004	(0.147)	-0.002
Concern for Students				0.728	(0.076) ***	0.640	0.733	(0.078) ***	0.644	0.725	(0.079) ***	0.637
Teacher Influence				-0.040	(0.044)	-0.074	-0.027	(0.044)	-0.049	-0.026	(0.045)	-0.048
Sch. Focus on Learning				-0.035	(0.040)	-0.102	-0.043	(0.041)	-0.123	-0.041	(0.041)	-0.119
Teacher-Parent Trust				0.095	(0.061)	0.142	0.098	(0.060)	0.145	0.101	(0.060)	0.150
LSC Influence				-0.019	(0.021)	-0.053	-0.024	(0.020)	-0.069	-0.020	(0.020)	-0.057
School Collective Efficacy				0.026	(0.038)	0.058	0.025	(0.039)	0.055	0.021	(0.039)	0.048
Neighborhood-Level												
Nbhd Conc Disadvantage							-0.032	(0.037)	-0.078	-0.016	(0.040)	-0.039
Nbhd Immigrant Concent							0.039	(0.043)	0.077	0.049	(0.042)	0.097
Nbhd Residential Stability							0.058	(0.027) **	0.127	0.062	(0.027) **	0.136
Nbhd Collective Efficacy							-0.137	(0.131)	-0.081	2.799	(2.083)	1.658
Nbhd Coll Efficacy Squared										-0.377	(0.265)	-1.742
* p<=0.10 ** p<=0.05 *** p<=0.01												
R-Squared	0.028			0.576			0.591			0.595		

Figure 7-7. Residual of Student-Teacher Trust by Neighborhood Collective Efficacy
Chicago Public Schools 1997



7.5 SUMMARY

This chapter has compared the social organization of schools and neighborhoods, and examined whether neighborhood-level characteristics are associated with different types of social relations among school actors. At the outset of the chapter, five research questions were posed as a means of guiding the analysis of social organization. In regards to the first research question, results suggest that the demographic composition of schools tends to be more heavily minority in proportions relative to the surrounding neighborhood. As for the relationship between social ties between teacher and parents with neighborhood social capital, results show that there is a non-significant association between these two types of social ties. Similarly, while the bivariate association between

School Collective Efficacy and Neighborhood Collective Efficacy is significantly positive, after controlling for relevant school-level predictors, the association is rendered non-significant. Finally, just as with School Collective Efficacy, Student-Teacher Trust is not significantly associated with Neighborhood Collective Efficacy net of other school and neighborhood predictors. In sum, results suggest that the quality of neighborhood social ties does not have a substantial bearing on the quality of social ties between teachers, between teachers and parents, or between teachers and students. However, there is one key exception, which is the role of the local school council. Recall that the local school council represents a type of social relation between schools and neighborhoods, given that the council is composed of community members, parents, teachers, and the school's principal. Results show that the effectiveness of this governing body is predictive of Teacher-Parent Trust and School Collective Efficacy.

While this chapter has explored the predictors of school social organization, the next chapter examines the effects of social ties within schools, within neighborhoods, and between neighborhoods and schools on youth behavior.

CHAPTER 8

PRIVATE, PAROCHIAL, AND PUBLIC CONTROL IN THE CHICAGO PUBLIC SCHOOLS: THE DISARTICULATION OF SCHOOLS FROM COMMUNITIES

8.1 INTRODUCTION

Shaw and McKay (1942) long ago recognized that delinquency is more likely to occur in socially disorganized neighborhoods, where disorganization refers to the breakdown in neighborhood institutions like the family and schools. Similarly, Kornhauser (1978) argues that attention should be placed upon the relations between neighborhood institutions, and notes that social disorganization and delinquency are more likely to occur in neighborhoods where social institutions are isolated from each other. For instance, if schools are isolated from the larger community and do not respond to the needs of the community, then communities are lacking a key mechanism of social control (Kornhauser 1978; Shaw and McKay 1942). Hunter's (1985) much heralded conception of private, parochial, and public social orders pays particular attention to the fact that the breakdown in social control is due to the disarticulation between different levels of social control, where disarticulation refers to the lack of integration between these three levels of social order. Therefore, the weakening of social control within neighborhood communities could be due, in part, to the disarticulation between schools and communities.

Despite Kornhauser's call for research linking neighborhoods and institutions, and Hunter's appealing three-level framework for conducting such research, few studies have followed this kind of research agenda (for exceptions, see Morenoff, Sampson, and

Raudenbush 2001; Peterson, Krivo, and Harris 2000). Even the few studies that have examined the role of institutions and organizations in fostering social control and preventing crime merely examine the presence or number of organizations in a geographic area and not the ties between organizations. They also neglect any kind of focus on the role of extralocal institutions in fostering social control.

Addressing these gaps in prior research, the present study provides an examination of private, parochial, and public social orders through an analysis of student delinquency and arrest. Specifically, I examine the role of ties among teachers, between parents and teachers, between schools and local community organizations, between members of the local school council, and between schools and government leaders in inhibiting student delinquency and arrest. The setting for this examination of social control is the Chicago Public School (CPS) system. CPS has undergone a series of educational reforms over the past two decades, several of which were designed to remedy the fact that many local schools were, for the most part, isolated from the larger community in which they were embedded. Thus, examining the importance of the various levels of social order offers a glimpse of the potential efficacy of Chicago school reforms.

8.2 THEORETICAL FRAMEWORK

The concept of social control first emerged in American sociology at the end of the 19th century in a set of 20 broad ranging papers published by Edward Alsworth Ross in the *American Journal of Sociology*. Over the past 100+ years, the concept of social control has been applied to the study of many of the central issues in sociology (e.g.

crime, stratification, political process), yet scholars still debate the exact definition of social control, how to measure it, who exercises it, and its consequences. As Janowitz (1975, p.82) observes, early formulations of social control tended to define it as the capacity of a social group or a society "to regulate itself according to desired principles and values." For instance, in *Introduction to the Science of Sociology*, Park and Burgess (1928, p.42) conclude that what distinguishes society from a mere collection of individuals is corporate action, not like-mindedness, where corporate action is defined as action that is directed to a common end. They also argue that the central problem of society is to determine how and why individuals come to act together in a corporate way. They go on to state (Park and Burgess 1928, p.42) that the discipline of sociology is "a point of view and a method for investigating the processes by which individuals are inducted into and induced to co-operate in some sort of permanent corporate existence which we call society." Note that the classical definition of social control has two important components. The group regulation clause of the definition implies corporate (i.e. collective) action, while the principles and values part implies that collective action is used towards some collective goal or purpose.

8.2.1 The Systemic Model

With the notion of group regulation in mind, research over the past three decades has come to emphasize the necessity of social ties for the production of social control (see Bursik and Grasmick 1993). As Kornhauser (1978, p.74) observes, "[C]ontrol theorists assume that all controls are social in that they originate and are maintained in

social relationships." Thus, a relational approach is useful for addressing the conception of social control. The systemic model of community attachment is one such exemplar of a relational approach, which can be used to examine the role that social networks play in socially controlling delinquency. In the systemic model, local community is viewed as a complex system of friendship and kinship networks and formal and informal associational ties rooted in family life and socialization processes, and also fashioned by societal institutions (Kasarda and Janowitz 1974). Kasarda and Janowitz (1974) argue that one can identify the social organization of communities by focusing on social networks within local communities. Related to social control, it follows from the systemic model that the structure and characteristics of community networks determine the capacity with which a social unit (e.g. neighborhood or school) can engage in corporate action.

While the "community" typically referred to in studies of the systemic model are neighborhood communities, the present paper will demonstrate that the model can be applied to characterizing school communities and their capacity for social control. Arguably, if the defining characteristics of a "community" are shared beliefs, circumstances, and identities, then it is reasonable to examine the benefit of community affiliations for the production of social control regardless of the *place* where these affiliations are rooted. Wellman and Leighton (1979, p.365) assert the same point when they note that, "the paramount concern of sociologists is social structure, and concerns about the spatial location of social structures…must necessarily occupy secondary positions. To sociologists, unlike geographers, spatial distributions are not inherently

important variables, but assume importance only as they affect social structural questions as the formation of interpersonal networks and the flow of resources through networks."

Moving forward, Hunter's (1985) three-level typology of social order provides a useful way of understanding how the characteristics of networks of community relations influence the capacity for social control. Hunter identifies three levels or spheres of social control, which are each characterized by a different set of social relations: private, parochial, and public. Private social control is maintained by primary social groups, including family and friends, through the allocation or threatened withdrawal of sentiment and support. Parochial control derives from secondary social relations and from interlocking local institutions (i.e. horizontal ties). One example of these relations is the link between schools, as a local institution, and the surrounding community. Another example includes social ties between parents and teachers. Public social control focuses on a community's ability to secure public goods and services that are allocated by agencies located outside the neighborhood, and this acquisition of goods and services is achieved via links between a given community or school and extralocal agencies (i.e. vertical ties). For example, ties between schools and the local government may provide the resources necessary to inhibit crime and delinquency, including resources such as law enforcement personnel.

As described in the introductory section of this chapter, Hunter (1985) argues that the three social orders are interdependent, and that a lack of social control is more a function of the disarticulation between the three levels of social order than the failure of any one level specifically. Hunter's use of the term "disarticulation" in his discussion of

social control follows from earlier work by Janowitz (1978). Janowitz (1978, pp.16-17) defines disarticulation as "a condition of a lack of unity or integration," and uses the term to describe the fact that massive population increases during the 20th century "have not been accompanied by the emergence of effective institutions of coordination and self-regulation." Related to youth delinquency, the point is that changes in family functioning (e.g. decline of family supervisory functions) over time and the decreasing reliance on the neighborhood community as the nexus of social life have not been offset by the rise of societal institutions to replace the group-regulatory functions previously performed by families and neighborhood communities.

To follow, I provide a detailed discussion of private, parochial, and public social orders. While I discuss all three levels of social order, special attention is given to the influence of parochial social ties on student behavior. This added emphasis on the parochial social order stems from my desire to assess the importance of the articulation between schools and the surrounding neighborhood community. Following the discussion of the three levels of order in Section 8.3, in Section 8.4 I set the stage for an analysis of the social control effects on student delinquency and arrest by describing the context of educational reform in Chicago, which is the site of investigation in this study.

8.3 THE SYSTEMIC MODEL APPLIED TO SCHOOLS

Hunter's (1985) three-level typology can effectively be applied to understand the social organization of school communities. Private social control is maintained by primary social groups, in this case in relations between parents and children. Parochial

control derives from secondary social relations and from interlocking local organizations and institutions. Here, I focus upon social ties internal to schools (i.e. teacher-to-teacher ties), as well as the following three links between schools and the surrounding community: 1) ties between parents and school teachers, 2) ties between schools and neighborhood institutions, and 3) ties between the neighborhood community and schools for the purposes of school governance. Finally, public social control is achieved via links between a given school and extralocal agencies, and in the present case government actors.

8.3.1 Private Social Control

Sampson and Laub's (1993) groundbreaking reanalysis of Sheldon and Eleanor Glueck's matched data with 500 delinquents and 500 non-delinquents offers a framework for examining the effect of social ties on youth behavior. These authors use a multicontextual approach to explore the processes of social control that are related to both youth and adult behavior. Sampson and Laub (1993, p. 7) argue that the effect of structural context (e.g. neighborhood poverty) on behavior is mediated by informal social controls. Informal controls, such as family supervision, provide a number of means by which to inhibit youth delinquency. First, family controls foster a youth's bond to society (Hirschi 1969). In the absence of these bonds, the likelihood of delinquency is greater. Second, and more directly, family supervision provides monitoring of child activities and behavior.

In the context of education, the extent of parental involvement in, and supervision of, children's education is a key determinant of just how successful students will be in school (Coleman 1991; Henderson and Berla 1994). For instance, students are more successful in school and more likely to graduate from high school when parents talk with their children about their education and school, when they set school-related expectations for their children, and when they are aware of what their children are doing in school (Rumberger et al. 1990; Steinberg et al. 1992).

While much of the emphasis in this chapter is on the influence of parochial ties on student outcomes, what the foregoing discussion illustrates is that private ties, in terms of family supervision and parental involvement in various aspects of schooling, play a considerable part in the process of social control. Thus, any analysis of youth behavior should consider the role of parents and families in the social control process.

8.3.2 Parochial Social Control

Two dimensions of parochial relations will be considered in this study: ties among school actors, and ties between the school and school actors with individuals and organizations outside of the school.

8.3.2.1 Parochial Ties Within Schools

Regarding the first set of relations, among school actors, recently, attention has been given in the sociology of education literature to understanding how these internal school ties influence school effectiveness. One particular effort is the work of Bryk and

Schneider (2002) in their explication of "relational trust." Bryk and Schneider (2002, p.14) define relational trust as a "consequential organizational property of a school community" that is rooted in the "nature of interpersonal social exchanges" among members of the school community. These authors note that little attention in educational research has been given to the variation in trust across schools, and how this variation is related to the effectiveness of schools. They argue that the basic operation of schools is conditioned upon social exchanges between teachers and students, teachers and other teachers, teachers and parents, and teachers and school administration. The conception of relational trust is strongly related to Coleman's (1988) discussion of social capital, where social capital essentially refers to a resource realized through social ties and relationships. In adherence with Coleman's (1988) reasoning, exchanges between school actors described by Bryk and Schneider (2002) carry with them a set of obligations and expectations. When these obligations and expectations are not met, relational trust and social relationships are weakened. However, when obligations and expectations are met, and relationships are characterized by trust, then consensus on norms and collective control of student behavior are more likely.

One could ask whether relational trust, and the related concept of social capital, is sufficient for producing social control. Sampson and colleagues (1999; also Morenoff et al. 2001) argue that researchers must move beyond a reliance on social capital and density of social ties when examining the determinants of social control. They describe social capital as a "resource potential," but one that must be activated and utilized. Thus, Sampson and colleagues (1997; 1999) employ the concept of "collective efficacy" to

refer to the process of activating or converting social ties to achieve collective goals, such as public order or the control of crime. This argument is related to one made by Wellman (1979, p.1202), who argues that urban sociology has become preoccupied with local solidarity, "rather than a search for functioning primary ties." The point is that strong ties and a union of interests are secondary in importance to a consideration of whether the structure of ties provides some function or benefit irrespective of strength or sentiment. So, the emphasis should not be placed upon whether ties are strong, but whether ties provide resources, information, or in the present case, social control.

Similarly, relational trust may best be characterized as a "resource potential," but one that must also be activated and utilized. Thus, the conception of collective efficacy may be appropriately applied to school environments to refer to the way relational trust among school actors is converted in order to achieve some collective goal (e.g. the enforcement of school rules, school improvement). For instance, research shows that collective participation on the part of teachers in planning curriculum and maintaining school rules leads to positive student outcomes like high attendance and low levels of delinquency (see, e.g., Rutter 1983; Rutter et al. 1979). Thus, student delinquency and behavior leading to arrest may be most effectively controlled in the presence of strong ties between school actors and collective participation among these actors. The present study extends the application of both relational trust and collective efficacy by examining the association between a measure of school collective efficacy and student behavior.

8.3.2.2 Parochial Ties Between Schools and Neighborhoods

While social relations within school serve as one resource for the parochial social control of student behavior, scholars have long been concerned with the importance of social ties between schools and the local community. In her meticulous examination of social disorganization theory, Kornhauser (1978) argues that one of the primary sources of social disorganization is the isolation of community institutions from families and other community institutions. More specifically, she observes that in social disorganized areas, "there is a paucity of intermediate relations that link primary to secondary institutions and secondary institutions to each other…The family in particular has few links to other institutions. The school stands apart from the remainder of the community, alien and unresponsive to its needs" (Kornhauser 1978, p.79). What exactly are these "intermediate relations" that link community institutions, such as families and schools?

One answer to the question above was already provided in the discussion of *Private Social Control* in Section 8.3.1. Recall that there are benefits in terms of student behavior and academic achievement when parents are aware of what their children are doing in school, and also when there are shared norms and expectations among parents and teachers about student behavior and performance (Henderson and Berla 1994; Rumberger et al. 1990; Steinberg et al. 1992). While much of Coleman's (1988) discussion of social capital and the structure of intergenerational closure that fosters social capital emphasizes the importance of parent-to-parent ties in a school community, Coleman (1987; 1995) also observed the importance of social network closure among other actors in the school community. When teachers, administrators, and parents are all

tied together in a closed social network, agreement upon, and enforcement of, social norms for appropriate behavior is more likely (Bryk, Lee, and Holland 1993; Coleman 1987; Coleman 1995). So, for the purposes of the present study, one key dimension to social control is the extent of communication between parents and school staff, and the quality of ties between these groups.

Beyond ties between parents and school professionals, there is also a wide body of research examining links between schools and local organizations (e.g. businesses, universities, social service agencies). Proponents of school-community partnerships have emphasized the benefits of these partnerships for overall school effectiveness and student well-being (Epstein 1995; Melaville 1998). The basis for much of these discussions is the observation that many of the child-rearing and socialization functions previously performed by the family are now left to the state or other entities (Coleman 1987). In other words, declining social capital in the family must be offset by an increase in social capital in the local community.

As described in Chapter 2, one current model based on the goal of fostering social capital is the so-called full-service school initiative (Dryfoos 1994). These types of schools are designed to increase access to social and health services for students and their families through partnerships with local organizations. Use of the term full service schools derives from legislation enacted in the State of Florida in 1991, that called for the integration of education, medical, health, and social services in one place, on school grounds (Dryfoos 1995). While the terminology of *full service schools* is relatively new, emphasis on using schools as sites for the provision of health and social services is not.

As Dryfoos (1995) notes, it was common during the rapid expansion of U.S. cities more than a century ago for settlement houses to provide a host of social services within school walls (see also Tyack 1992). Later, in 1935, philanthropist Charles Stewart Mott and educator Frank Manley created what were termed “lighted schoolhouses” in Flint, Michigan (Charles Stewart Mott Foundation 2002). The idea behind lighted schoolhouses is essentially the same as with full service schools, to keep schools open beyond traditional school hours in order to provide after-school programs for youth, and services for local residents. In sum, full service schools and related programs like lighted schoolhouses provide a valuable source of social control by delivering a host of social services that ultimately aid overall child development. Additionally, school-community partnerships may be effective in controlling delinquency because such partnerships work to counteract the milieu of social isolation described by Wilson (1987). In other words, providing students access to community organizations and local institutions connects these students with conventional role models and imparts the benefit of following mainstream goals like completing their education and obtaining a job. Finally, the fact that schools remain open after normal school hours in order to provide social services and programs furnishes another critical dimension of social control, namely supervision and monitoring of youth. This supervision of youth within the local community is crucial when such supervision is not performed by the family.

Besides teacher-parent ties and full service schools (and related programs), a third dimension of school-neighborhood ties that is potentially valuable for the parochial control of youth is local governance of schools. As will be described in greater detail in

Section 8.4, numerous public school systems have enacted school reforms aimed at decentralizing the governance of schools away from central administrative bodies by granting authority over school decision-making to the parents, community members, teachers, and principals of a given school. The local governance of schools, and the principle of democratic localism upon which it is based, can be viewed as a step towards fostering parochial social control. Referring to school reforms towards local governance in the Chicago Public School system, Bryk and colleagues (1998) note:

> the commitment to democratic localism was seen, by at least some advocates for reform, as part of a larger strategy at urban community building. The loss of local institutions of all kind---social, economic, and religious---have denuded urban community life and undermined the viability of these communities. Any effort to stem the current destruction and to recreate communities requires a massive commitment to local institution-building. Key in this regard is expanded opportunities for citizen participation and community education about local affairs. (P. 17)

The implication for the present study is that local participation in the governance of schools may serve as a type of "intermediate relation" described by Kornhauser (1978), which not only increases the effectiveness of schools, but also counters the forces of neighborhood-wide social disorganization. With an articulation between schools and the neighborhood-community, social control is more likely.

In sum, the present study examines whether variation across schools in 1) the quality of relations among parents and teachers, 2) the extent of partnership between schools and local organizations, and 3) the quality of local school governance explains variation across schools in student delinquency and arrest.

8.3.3 Public Social Control

Referring to public control in neighborhoods, Bursik and Grasmick (1993, p.17) write, "the 'public' level of social control…focuses on the ability of the community to secure public goods and services," where these public goods often refer to public safety and municipal services. For Hunter (1985), the key point to remember is that social control rests upon an articulation between levels of social order. In terms of articulation between public and parochial social orders, Hunter (1985) argues:

> Many of the activities of the parochial order that support these local institutions [schools, church, YMCAs, athletic leagues], as we have seen, rely upon the voluntary contribution and labor of one's fellow neighbors. However, such voluntary activity is difficult to elicit and maintain in the face of increasing expectation that the state should provide many of these services. Rising social disorder in urban communities would therefore appear to be more the result of a disarticulation with the parochial order than a failure of the state to produce social control in the public order…The solution to the dilemma is not for the state to engage in direct social control, that is, to attempt to increase its efficiency in catching criminals; but rather, for the state to increasingly support stronger parochial orders that will engage in social control activities in conjunction with the state and private order. (P. 220)

The implication for schools is that producing schools which are free from crime and delinquency requires more than adding police and security officers and installing screening technology commonly found at airports. It requires articulation between the local government, whether it be the school district or local aldermen, and schools.

A good example of the benefit of articulated parochial and public social orders comes from the work of Carr (2003). In his ethnographic study of the "Beltway" neighborhood in Chicago, Carr (2003) finds effective social control, though not in the presence of strong social ties among community residents. In one example, Carr describes how a group of local activists, trained in problem-solving techniques by a

coalition of police officers and a neighborhood group focused on public safety, sought to remedy problems associated with a disorderly tavern. As Carr (2003, p.1268) describes, "[T]he tavern had become notorious for attracting drug users, alcoholics, and panhandlers, and locals frequently complained about the crime and disorder associated with the bar." Ultimately, community groups (i.e. the parochial order) worked with the police, aldermen, and the liquor commission (i.e. the public order) to get the neighborhood tavern shut down. Surely it also helped that the two local aldermen in the Beltway community were strongly connected to the Ward political organization and to the Mayor of Chicago. The overall point is that Carr's findings speak to Hunter's (1985) argument about the interdependence between the various levels of social control. Following this example and the logic of Hunter (1985), one research question to explore is whether schools with connections to local government leaders are more able to acquire the resources necessary to control delinquency and student misbehavior.

8.4 THE SETTING: THE CHICAGO PUBLIC SCHOOL SYSTEM

The setting for this analysis of social control is the Chicago Public School system. In a well-known declaration about the state of urban education in Chicago, U.S. Secretary of Education William Bennett proclaimed in 1987 that the Chicago Public School system was the "worst public school system in America" (Chicago Tribune 1988). What has followed since Bennett's declaration is a massive overhaul of the governance structure of the Chicago Public School system, with many reforms aimed at reintegrating families and the local neighborhood community back into the decision-making process of schools.

Given this policy emphasis on linking schools with the neighborhood communities in which they are located, the Chicago Public School system is a pertinent research site for examining the importance of social ties within schools and between schools and the larger community and government for the control of student behavior. What follows is a brief overview of the organization and governance of Chicago Public Schools. The purpose of this discussion is to provide a context for the study of social control within schools and between schools and neighborhood communities.

The 1970s ended with a fiscal crisis in the CPS system (Hess 1991). After operating in deficit for years, CPS failed in 1979 to secure sufficient loans from banks and other lending institutions necessary to cover operating expenses. The State and local governments came to the rescue to bail out CPS, but the result of the bail out included the elimination of 8,000 jobs and the creation of the Chicago School Finance Authority to provide oversight of financial decisions (Hess 1991). However, the financial problem was just one of many issues with the public schools. Declining enrollment, increased dropout, miserable test scores, and failed desegregation plans all characterized the Chicago Public Schools in the 1980s (Mirel 1993).

Since 1988, CPS has undertaken a flurry of reforms aimed at remedying the conditions and failures plaguing the system in the 1980s and before. Three comprehensive reforms will be described to follow. To be clear, the description of educational reforms does not mean that the objective of this chapter is to assess the effectiveness of various reforms. Rather, descriptions are made to illustrate that current reforms, at a high-level, are designed to integrate, or rearticulate, schools and the

surrounding community. Analyses will then address whether the articulation between schools and communities is effective in producing schools that are free of disciplinary and delinquency problems.

The aim of the 1988 reforms, enacted by the Illinois State Legislature, was to decentralize the governance of schools by shifting power over decision-making from professional educators at the Chicago Board of Education and central administration to those individuals with the greatest stake in education --- the parents and the local school community (Hess 1991; Mirel 1993; Mirel 1999). These reforms embodied the principle of democratic localism, which suggests that community participation is essential for effective governance (Bryk et al. 1998). The key component of the 1988 reforms was the creation of an 11-member local school council (LSC) for each school. The LSCs were given budgetary and decision-making authority, including the ability to hire and fire principals. Of the 11 members, 6 were elected parents of school children, and 2 were elected community members from the attendance area served by the school. Two teachers and the school's principal completed each LSC.

The push towards decentralization in Chicago, and earlier in cities like Detroit and New York, reversed educational reforms enacted in the 1910s and 1920s that emphasized the benefits of highly bureaucratized educational systems run by professionals. The reform of the Chicago Public School system in 1988 essentially placed the blame of educational failures on the central bureaucracy, suggesting that reforms towards centralization during the first half of the 20th century were a catastrophic failure

and that the remedy for school failure was to shift the responsibility for solving local problems into the hands of the local community (Bryk et al. 1998; Mirel 1993).

Were the 1988 reforms successful in fostering local governance? Findings to date suggest not. In 1989 when the first elections for local school councils took place, over 17,000 candidates ran for election (Wong 1999). Just two years later, the number of candidates for the same number of LSC positions had dropped to 8,389 (Wong 2003). In 1998, 15% of Chicago's schools failed to even slate six parents as candidates for the six seats open to parents on each LSC. Thus, judging the effectiveness of local participation in the governance of schools is problematic when participation is so minimal.

Given the declining participation in the local governance of schools, another series of reforms in 1995 essentially recentralized authority by placing control of the CPS system into the hands of Chicago mayor, Richard M. Daley. The mayor was given power to appoint a new School Reform Board, and to name the chief executive officer of the school system. The School Board was also given increased power over the financial and management aspects of the education system, and the CEO was given authority to put low performing schools on probation. However, as Wong (2003) describes, the 1995 reforms did not completely dismantle the decentralized structure enacted in 1988. Local school councils still maintain some power, including the hiring and firing of school principals. Nevertheless, these reforms, in effect, reinstated much of the governance of schools to a centralized body. As Bryk (1999, p.69) describes, "the mayor…has aggressively used the power authority in the 1995 legislation to initiate an extraordinary

array of centrally designed and directed initiatives that have sought to relegitimate the idea of central system control, which had disintegrated in the mid-1980s."

Even with reforms in 1995 towards recentralization, CPS did not abandon concerns over linking schools to the broader community. In 2002, another ambitious initiative was undertaken with the goal of creating of 100 "community schools" over a five-year period. While less sweeping than the 1988 and 1995 reforms just described, the community schools initiative is an exemplar of a strategy to reintegrate schools and communities. Quoting Chicago Public Schools CEO Arne Duncan, (2002, pp.3-5) "[B]ecause learning doesn't happen in a vacuum, we want to bring into the schools the families, the civic groups, the social and health service organizations, and the business and community groups…We see our schools as the anchor of the community."

Community schools are another name for the aforementioned "full service schools," which are designed to support all aspects of youth development. Services include not only education of youth, but also endeavors like after-school programs, education classes for parents, and social services (Chapin Hall Center for Children 2002). The Community Schools Initiative in Chicago is implemented such that schools are open weekdays from 7am to 7pm and on weekends, and include a partnership between the community school and a local community organization. The Community Partner is responsible for working with the school and other community organizations to develop and implement programs and services for parents and community members, including health and counseling services, computer skills, and ESL classes (Duncan 2002).

From a social control viewpoint, the reforms of 1988 and thereafter were necessary because of a disarticulation between the institution of education and those individuals who had the biggest stake in the educational system. In other words, centralized administration and governance of schools created a disconnect between schools and the local community in which they are embedded. The way to cure the educational system was to rearticulate (i.e. reintegrate) families and the local community back into the educational process. While the present study does not attempt to evaluate the success and failures of specific school reform initiatives, what it does seek to determine is just how crucial the articulation between schools and communities is to the social control of student behavior.

8.5 DATA AND RESEARCH DESIGN

The study sample is drawn from the 1997 Student Survey of the Chicago Public Schools, with data provided by the Consortium on Chicago School Research (CCSR). Detailed information about the sample is provided in Chapter 3. In addition to the Student Survey of the Chicago Public Schools, data utilized in this study also come from the 1997 Teacher and Principal surveys of the Chicago Public Schools. One measure from the 1994 Teacher Survey of the Chicago Public Schools is also used in analyses.

8.5.1 Dependent Variables

Two dependent variables are utilized in the study: Student Delinquency and Student Arrest. The first, Student Delinquency, is a Rasch measure indicating the average

level of disciplinary problems across students within a given school during the school year. The scale units of the Rasch delinquency measure are logits, and delinquency is measured on an interval scale. Higher scores on this measure refer to higher levels of student delinquency and misconduct. Individual student responses are aggregated to the school level in order to produce a school-level indicator of delinquency. The second dependent variable, Student Arrest, is a measure of the proportion of students in a given school arrested during the school year. So, individual student responses are aggregated to the school level in order to produce a school-level indicator of arrest. Construction of these measures is described in detail in Chapter 3.

8.5.2 Independent Variables

Included in the statistical models are a number of predictors describing the structural characteristics of schools, as well as indicators of the social organization of schools. Structural predictors include: Percent of Students who come from Low-Income Families, Percent of Black Students, Percent of Latino Students, and School Type (i.e. general or magnet). The percent of students in a given school who are low-income is computed as the percent of students who are signed up for free or reduced price lunch.

The following school social organizational predictors are utilized in analyses: Student Academic Engagement, Parental Supervision, Community Outreach, Local School Council Influence on School Improvement, School Collective Efficacy, Teacher-Parent Trust, and School-Government Ties.

Numerous studies have shown that student academic engagement, or lack thereof, is strongly related to academic failures (Bryk and Thum 1989; Payne, Gottfredson, and Gottfredson 2003; Rumberger and Larson 1998), such that outcomes like dropout and misbehavior are a byproduct of a gradual disengagement from the educational process. Thus, the level of academic engagement in a given school is likely related to the incidence of delinquency in the school, and to student misbehavior more generally. For analyses, Student Academic Engagement is a measure of the average level of student interest and engagement in learning within a given school. Higher scores equate to higher engagement in learning.

Parental Supervision is a school-level measure derived from questions of students asking whether their parents make sure they get to school and home from school, and know where their children are located when not in school. Parental Supervision is an indicator of private social control. Higher scores refer to greater parental supervision.

The measure of Community Outreach is the first of four separate measures that serve as indicators of the parochial ties described in the literature (Bursik and Grasmick 1993; Hunter 1985). Community Outreach is derived by asking school principals the extent to which their school is involved with programs designed to increase parental involvement, foster community relations, and partner with local businesses and educational institutions. Higher scores equate to greater levels of community outreach. Importantly, many of these survey items used to derive the Community Outreach measure ask principals about the interaction between the school and local organizations (e.g. businesses or local employers). However, Wilson (1987) finds that some inner city

urban areas are almost totally bereft of local institutions. Therefore, for the present study, if the community surrounding the school is totally lacking in community organizations and businesses, then a school's score on the Community Outreach measure will be low even if the school intended to have much greater outreach.

The second measure of parochial ties is Teacher-Parent Trust. This measure describes the extent to which teachers feel that they have mutual respect and trust with student parents, and that parents support their efforts in educating their children. Higher scores refer to greater levels of trust and respect between teachers and parents.

The next measure of parochial ties is School Collective Efficacy. School Collective Efficacy combines indicators of teacher-to-teacher trust and collective responsibility among school staff. Teacher-to-teacher trust refers to the degree of respect, trust, and open communication among teachers. Collective responsibility refers to the extent to which teachers have a shared commitment to collectively maintain school rules and work towards school improvement. Higher scores refer to greater levels of trust and respect among teachers and collective responsibility for action.

The final measure of parochial social ties is Local School Council Influence on School Improvement. Recall from previous discussion of Chicago Public School reforms that the Local School Council is a governing body for each school composed of parents, community members, teachers, and the principal, which is charged with the task of school decision-making. The local school council represents a tie between the neighborhood community and the school. The measure of Local School Council Influence on School Improvement serves as an indicator of the effectiveness of this

governing body. Higher scores refer to greater levels of LSC effectiveness in regards to the governance of schools. Finally note that this measure derives from the 1994 Teacher Surveys, as opposed to the other measures which come from the 1997 surveys.

An indicator of School-Government Ties is based on the following question for school principals: “about how often do you meet with the local alderman?” School-Government Ties serves as an indicator of the public order described by Hunter (1985).

All indicators of the social organization of schools are aggregated to the school-level from student, teacher, and principal responses, to provide summary measures for each given school. Construction of these school based measures is described in greater detail in Chapter 3, and teacher, principal, and student survey items used to derive each scale are listed in Appendix C.

While much of my interest in this chapter is upon school ties and school-neighborhood ties, given the fact that schools do not exist in a vacuum, and results from Chapter 7 which suggest that at least some school features are influenced by the characteristics of the surrounding neighborhood, I also add into statistical models a number of controls of neighborhood context. The following characteristics of neighborhood structure are all derived from 1990 census data: Concentrated Disadvantage, Residential Stability, and Immigrant Concentration. One measure of neighborhood social processes, Collective Efficacy, is also included in statistical models, as a means of examining the influence of neighborhood social control processes at the same time as school based control processes.

8.6 ANALYTIC STRATEGY

I perform a series of multilevel regression analyses for each of the dependent measures. Since Student Delinquency is measured on an interval scale, I utilize a two-level linear regression model with school characteristics at level-one and neighborhood characteristics at level-two. Similarly for arrest, I utilize a linear regression model with the same multilevel structure. In each analysis, the baseline model includes the structural characteristics of schools described previously. Subsequent models add school organizational predictors, and then neighborhood predictors.

Recall from Chapter 3 and the discussion presented in the preceding section that the Community Outreach, School-Government Ties, and Local School Council Influence on School Improvement measures derive from the 1997 Principal Survey (for the first two) and the 1994 Teacher Survey (for the last measure). The sample size of schools in these surveys is lower than with the 1997 Student and Teacher surveys. Because of the lower sample sizes in these surveys, there is a missing data problem, though there are a number of potential means by which to handle the problem. Two potential options are to impute missing values or to delete from analyses all cases missing data on these three measures. However, I utilize a third option. In analyses to follow, I compute level-one residuals (school-level) from the final model described above (with school structural, school organizational, and neighborhood predictors). I then regress these residuals, which represent the levels of delinquency or arrest in a given school adjusted for school and neighborhood predictors, on Community Outreach, School-Government Ties, and Local School Council Influence on School Improvement. This method allows me to examine

the effects of all but these last three predictors on the two outcome measures across the full sample of schools, and then to examine the effects of Community Outreach, School-Government Ties, and Local School Council Influence on School Improvement in a reduced sample of schools.

8.7 RESULTS

8.7.1 Student Delinquency

Table 8-1 displays results for the examination of Student Delinquency. In Model 1, results show that the level of delinquency is greater in schools with higher percentages of low-income students, as well as higher percentages of black students. Results from Model 2 show that Student Delinquency is negatively related to both Student Academic Engagement and Parental Supervision. Model 3 includes two of the measures of

Table 8-1. Predictors of Student Delinquency

	Model 1		Model 2		Model 3		Model 4	
	Coef.	(SE)	Coef.	(SE)	Coef.	(SE)	Coef.	(SE)
Intercept	2.708	(0.022) ***	2.699	(0.021) ***	2.692	(0.021) ***	2.694	(0.021) ***
% Black Students	0.008	(0.001) ***	0.010	(0.001) ***	0.009	(0.001) ***	0.009	(0.001) ***
% Latino Students	0.001	(0.002)	0.001	(0.002)	0.000	(0.001)	0.000	(0.002)
% Low-Income Students	0.004	(0.002) **	0.006	(0.002) ***	0.005	(0.002) ***	0.006	(0.002) ***
Magnet School	-0.108	(0.074)	-0.091	(0.080)	-0.066	(0.081)	-0.046	(0.082)
Academic Engagement			-0.417	(0.094) ***	-0.383	(0.097) ***	-0.383	(0.096) ***
Parental Supervision			-0.125	(0.064) *	-0.089	(0.068)	-0.088	(0.068)
Teacher-Parent Trust					-0.082	(0.032) **	-0.072	(0.032) **
School Collective Efficacy					0.009	(0.026)	0.003	(0.025)
Nbhd Conc Disadvantage							-0.007	(0.027)
Nbhd Immigrant Concent							-0.006	(0.023)
Nbhd Residential Stability							0.035	(0.023)
Nbhd Collective Efficacy							-0.062	(0.102)

* p<=0.10 ** p<=0.05 *** p<=0.01

parochial social ties, with results showing that one of these measures, Teacher-Parent Trust, is negatively associated with Student Delinquency. Also, it can be seen that the inclusion of these parochial measures mediates the association between Student Delinquency and Parental Supervision (i.e. the association is non-significant in Model 3).

Results thus far suggest that the primary means by which school social organization influences delinquency is directly through teacher-parent ties and indirectly through academic engagement. What else then influences student behavior, if anything? The work of Welsh, Greene, and Jenkins (1999) and Payne, Gottfredson, and Gottfredson (2003) offer some possible answers to this question. In a study of student misconduct, Welsh and colleagues (1999) find that student delinquency is significantly associated with neighborhood poverty, and reason that neighborhoods high in poverty are unable to effectively control student behavior or to pass on prosocial norms. Similarly, Payne and colleagues (2003) find that concentrated poverty and disorganization is positively associated with student delinquency.[1] Thus, in Model 4 I include measures of neighborhood structure and social processes to determine if the normative climate of neighborhoods and the social control capacity of neighborhoods are related to student behavior. Results in Model 4 show, however, that Student Delinquency is unrelated to all neighborhood factors. This finding contrasts with results of previous studies described above. Furthermore, while Neighborhood Collective Efficacy has been shown to be

[1] Interestingly, in contrast to results presented in Model 3, Payne and colleagues (2003) also find that an indicator of communal social organization (a measure similar to School Collective Efficacy) is negatively related to student delinquency. However, they do not examine whether communal social organization is predictive of student delinquency net of parental supervision or ties between parents and teachers.

related to violence (Sampson et al. 1997) and even teenage sexual behavior (Browning, Leventhal, and Brooks-Gunn 2004), it is unrelated to student delinquency.

Table 8-2 contains results of the analysis of the residual from Model 4 regressed on additional predictors of parochial and public social ties. It can be seen that none of these additional predictors are associated with Student Delinquency. Results presented in Tables 8-1 and 8-2 thus suggest the following: 1) that social ties involving parents, whether at the private level (Parental Supervision) or the parochial level (Teacher-Parent Trust) are negatively related to delinquency, and 2) that keeping students academically engaged potentially provides a significant means by which to control student misbehavior.

Table 8-2. Predictors of Student Delinquency Residual (From Table 8-1, Model 4)

	Model 1		Model 2		Model 3	
	Coef.	(SE)	Coef.	(SE)	Coef.	(SE)
Intercept	-0.008	(0.017)	-0.007	(0.016)	-0.003	(0.017)
Community Outreach	-0.014	(0.013)				
LSC Influence			0.001	(0.017)		
School-Government Ties					-0.002	(0.031)

* p<=0.10 ** p<=0.05 *** p<=0.01

8.7.2 Student Arrest

Moving to the analysis of Student Arrest in Table 8-3, overall results reveal a number of important differences from the analysis of delinquency in the preceding subsection, in particular with respect to the effects of Parental Supervision and Teacher-

Parent Trust. In Model 1, results show that the proportion of students arrested in a given school year is greater in schools with higher percentages of low-income students, and lesser in schools with higher percentages of Latino students relative to non-black and non-Latino students. In Model 2, results show again that Student Academic Engagement is highly associated with student behavior. Furthermore, Parental Supervision is also highly associated with Student Arrest. However, in contrast to the estimation of Student Delinquency, the inclusion of parochial social ties in Model 3 does not mediate the association between Student Arrest and Academic Engagement or Parental Supervision. In Model 3, the association between Teacher-Parent Trust and Student Arrest is non-significant, while the association between Parental Supervision and Student Arrest is still highly significant. As with models of Student Delinquency, results from Model 4 show that neighborhood characteristics have little association with Student Arrest.

Table 8-3. Predictors of Student Arrest

	Model 1			Model 2			Model 3			Model 4		
	Coef.	(SE)		Coef.	(SE)		Coef.	(SE)		Coef.	(SE)	
Intercept	0.105	(0.004)	***	0.104	(0.004)	***	0.105	(0.004)	***	0.104	(0.004)	***
% Black Students	0.000	(0.000)		0.000	(0.000)		0.000	(0.000)		0.000	(0.000)	
% Latino Students	-0.001	(0.000)	***	-0.001	(0.000)	***	-0.001	(0.000)	***	-0.001	(0.000)	***
% Low-Income Students	0.001	(0.000)	***	0.001	(0.000)	***	0.001	(0.000)	***	0.001	(0.000)	***
Magnet School	-0.021	(0.020)		-0.020	(0.021)		-0.022	(0.022)		-0.025	(0.023)	
Academic Engagement				-0.036	(0.018)	**	-0.039	(0.019)	**	-0.040	(0.018)	**
Parental Supervision				-0.033	(0.014)	**	-0.035	(0.016)	**	-0.035	(0.016)	**
Teacher-Parent Trust							0.004	(0.006)		0.004	(0.006)	
School Collective Efficacy							-0.001	(0.005)		0.000	(0.005)	
Nbhd Conc Disadvantage										0.002	(0.005)	
Nbhd Immigrant Concent										-0.005	(0.004)	
Nbhd Residential Stability										-0.005	(0.004)	
Nbhd Collective Efficacy										0.002	(0.018)	

* p<=0.10 ** p<=0.05 *** p<=0.01

Table 8-4 contains results of the residual analyses from Model 4. It can be seen in Model 5 that Student Arrest is lower in schools with higher levels of outreach to the community. However, neither the LSC Influence measure of parochial ties nor the School-Government Ties measure are significantly associated with Student Arrest. In sum, results in Tables 8-3 and 8-4 suggest the following: 1) parental supervision provides a key mechanism of control over student behavior leading to arrest, 2) that keeping students academically engaged again potentially provides a means by which to control various types of student behavior, and 3) arrest is relatively lower in schools which are active in partnerships with local organizations from the surrounding community.

Table 8-4. Predictors of Student Arrest Residual (From Table 8-3, Model 4)

	Model 1		Model 2		Model 3	
	Coef.	(SE)	Coef.	(SE)	Coef.	(SE)
Intercept	0.003	(0.004)	-0.002	(0.003)	0.001	(0.004)
Community Outreach	-0.006	(0.003) **				
LSC Influence			-0.004	(0.003)		
School-Government Ties					-0.013	(0.010)

* p<=0.10 ** p<=0.05 *** p<=0.01

8.8 DISCUSSION

Overall results suggest that one of the best ways to control student delinquency and criminal behavior is to foster student academic engagement. Findings also reveal that private social ties, in the form of parental supervision, are important for the social control

of student misbehavior, and that certain types of parochial ties are associated with misbehavior. Results also suggest that public social ties and neighborhood characteristics have little direct effect on student delinquency and arrest. With neighborhood effects, however, recall from Chapter 7 that certain aspects of neighborhood structure, like concentrated disadvantage, are significantly associated with different aspects of school social organization. Therefore, while there is an absence of direct neighborhood effects on student misbehavior, the effects of neighborhood characteristics may be indirect through their influence on private and parochial social ties.

While these results provide valuable information about the functioning of the different levels of social order within schools and between schools and the surrounding neighborhood community, a number of limitations of the study provide ample opportunities for future research. First, given the use of cross-sectional contextual data in this chapter, it is not possible to determine the causal directionality of the associations uncovered through analyses. For instance, it could be the case that instead of academic engagement providing an inhibiting effect on student delinquency and arrest, students may become more engaged in schools and the learning process if they are attending schools free from delinquency and criminal behavior. With that said, given that the CPS surveys are administered every 2 or 3 years (as described in Chapter 3), it is possible for future research to examine the temporal ordering of the effects of school social organization on student delinquency and arrest.

Second, as noted in the introductory section, the few studies to date that have examined the role of institutions and organizations in fostering social control have been

limited to a focus on the presence of organizations in a community, to the neglect of ties between organizations. However, a large presence of organizations in a community may not be beneficial for social control if such organizations are not connected (Morenoff et al. 2001). One of the methodological advantages of the present study is the examination of ties between schools and community organizations. Findings do show that the extent of parochial ties between schools and community organizations is negatively related to the proportion of students arrested in the school. Given the importance of parochial ties for social control, future research should further explore the relation between social control and the network structure of social ties between schools and community organizations. For instance, beyond merely counting the ties between schools and community organizations, parochial social order can also be assessed by examining whether those community organizations that are tied to schools are also tied to each other. Or following recent work on network cohesion (Moody and White 2003), researchers can examine the level of structural cohesion in a community network by determining how easily the network would disintegrate if a community organization were removed from the network (e.g. as in the case where a neighborhood school is shut down by the school district). Likewise, network analysis can be used to more thoroughly describe the ties between schools and extralocal governmental organizations (i.e. vertical ties). The overall point is that network methods can be used to provide a more precise examination of the social connections present at Hunter's three levels of social order, and ultimately the influence of these connections on student misbehavior.

Third, while the present study explored the independent effects of three levels of social order on delinquency and arrest, analyses did not fully address the idea of articulation between levels. Recall the previous example from the work of Carr (2003) about the benefit to communities from the articulation between community institutions and local government actors. Hunter (1985) offers another good example of the interdependence between the private, parochial, and public social orders: given that police (the public social order) often lack the resources to accomplish much other than to investigate existing crimes and catch criminals after the fact, their duties as agents of social control would certainly benefit from surveillance on the part of families, community residents, and community institutions. Thus, another key avenue for future research is to explore how schools and other local organizations work with extralocal agencies to foster social control in their specific neighborhood.

Finally, while results reveal the importance of academic engagement as a predictor of delinquency and arrest, space limitations prevented a thorough examination of the causes and consequences of disengagement. However, previous research (Payne et al. 2003) suggests that what little effect communal school organization (i.e. school collective efficacy) has on student delinquency is mediated by student bonds to school like academic engagement. Findings from the preceding analyses and from previous research (Payne et al. 2003) suggest that the model of social control utilized in this study should be modified to consider the indirect effects of the three levels of social order on student behavior through academic engagement.

CHAPTER 9

THE RECIPROCAL RELATION BETWEEN SCHOOL DROPOUT AND ARREST

9.1 OVERVIEW

In the last three empirical chapters, primary focus has been put upon neighborhood effects and school effects, with dependent variables merely used in order to assess potential neighborhood and school influences on youth behavior. In other words, my interest has been on the independent predictors, not the dependent outcome measures. However, in this chapter focus shifts to the outcomes variables: school dropout and arrest. If neighborhoods and schools influence different aspects of youth behavior, as results from Chapters 6 through 8 reveal, I then want to understand how these contextually influenced youth outcomes developmentally influence subsequent behavior.

School dropout is a serious social problem with implications not only on crime and delinquency, but also on a host of other life-course outcomes like employment and marriage (Rumberger and Thomas 2000). Similarly, arrest and official contact with the criminal justice system are major barriers to a pro-social, productive life, and are highly predictive of future arrest and other detrimental life-course outcomes. Thus, it is important to understand how dropout and arrest are developmentally related. Most often researchers have looked at whether dropout subsequently increases crime and arrest. Far less studied is whether arrest causally influences dropout. I posit that there is a reciprocal relation between these two outcomes, based on the argument that life events and transitions from one stage of life shape developmental outcomes in future stages.

It is important to note that many of the same factors influence both school dropout and arrest. For instance, as discussed in the last chapter, lack of student interest and engagement in the schooling process is a strong predictor of numerous types of problem behavior, including dropout and arrest (see also Bryk and Thum 1989; Payne et al. 2003). Therefore, it is important to determine if any apparent relation between dropout and arrest is simply due to the fact that each outcome has a similar set of causal predictors. The argument presented here, however, is that school dropout and arrest are two life-course transitions that have independent effects on each other, even after controlling for the relevant predictors that influence one or both of these outcomes. To test this argument, it is necessary to collect data on the predictors of both dropout and arrest, and to collect longitudinal data on the outcome measures so that a temporal ordering can be established. The data utilized in this study meet these two requirements.

9.2 THEORETICAL FRAMEWORK

Many of the most prominent theories of problem behavior can be used to explain both arrest and school dropout. For instance, control theory (Hirschi 1969) implies that weak school bonds (e.g. lack of attachment and commitment to school) lead to all types of problem behaviors, including arrest and dropout. Rational choice theories suggest that dropout may result when students believe there is little benefit in terms of utility from completing their high school education, and that arrest may result when the benefits from crime outweigh the costs (Becker 1968). Finally, labeling theory (Lemert 1951) implies that being labeled a problem student or criminal has numerous consequences on the way

students are treated by other individuals and institutions, and how students internalize their own identity.

To follow, I employ these three aforementioned theories to suggest some means by which arrest leads to school dropout and school dropout leads to arrest, both directly and indirectly. In the interest of brevity, the review to follow of this expansive literature is selective. Again it is important to emphasize that this discussion is grounded in a life-course approach, such that school dropout and arrest are two life-course transitions that are consequential for future behavioral trajectories. The theories outlined to follow suggest why these transitions are consequential.

9.2.1 Effect of School Dropout on Arrest

As noted, there is an assortment of potential explanations for why school dropout subsequently leads to arrest and criminal sanctioning. For instance, prior research suggests that school dropout is associated with a mix of deleterious life outcomes, like high unemployment, poor health, and increased criminal activity (Rumberger 1987). Of course, these outcomes are related. As an example, Lochner and Moretti (2003) examine the social costs in terms of crime of educational failure and dropping out of school, and conclude that school dropout lowers the opportunity cost of criminal activity by decreasing potential future earnings.

In addition to the indirect effect of dropout on arrest through reduced wages and employment prospects, dropout may influence arrest through reduced social controls. As Hirschi (1969) argues, four types of social bonds exert control over youth behavior:

attachment, commitment, involvement, and belief. With respect to schools, it follows from Hirschi's arguments that the absence of school bonds, which necessarily occurs when students drop out, leads to a weakening of controls on youth behaviors. Thus, arrest becomes more probable.

Related to the bond of involvement, the mere fact that school dropouts are not occupying their time via involvement in school means that they may have more idle time with which to break the law. As Osgood and colleagues (1996) note, however, evidence supporting the idle time to more crime link is weak. This weak association may result because criminals certainly do not spend all of their time committing crimes (Hirschi 1969). Idle time away from school gains importance because of the absence of school staff to supervise behavior. As Cohen and Felson (1979) argue in their theory of routine activities, crime is the result of the convergence of motivated offenders and suitable targets in the absence of guardians. So to understand the nature of criminal events, it is necessary to consider factors that produce criminal opportunities for would-be offenders. In a modification of the original theory, Felson (1986) later describes what he calls a "handler," which is an individual with the capacity to exercise social control over the offender. With regard to school dropout, time spent away from school is important to the extent that it is time spent in the absence of handlers (e.g. teachers and principals). Therefore, dropouts may find an increase in the opportunities to commit crimes given the absence of a structured day and the absence of authority figures to control their behavior (see also Osgood et al. 1996).

In terms of counter-argument, Elliott (1966) argues that dropping out of school should actually lead to a decrease in the number of contacts lower-class youth have with the police. Building upon the work of Cohen (1955), Elliott argues that status deprivation is a key source of delinquency. Within schools, the unequal competition among middle class and lower class students towards the achievement of status may ultimately strain lower class individuals (Cohen 1955). One potential repercussion of this strain is delinquent and criminal behavior, as youth act out against middle-class goals, or seek to attain those goals by whatever means necessary. Another response to school-related strain is to simply drop out of school. With this argument, youth who formerly experienced strain because of status competition in school will no longer be motivated towards crime and delinquency once they are free from strain. In this sense, we should see a within-individual reduction in the rate of crime and delinquency for lower-class youth once they drop out of school. Analyses to follow will establish whether school dropout influences arrest, and if so, whether the influence is positive or negative.

9.2.2 Effect of Arrest on School Dropout

While many theories of deviant and criminal behavior focus on characteristics of the individual to explain her or his behavior (e.g. Hirschi's social bond theory explains crime and deviance as the product of an individual's weakening bonds to conventional society), labeling theory shifts attention away from the deviant, and instead focuses on those reactors who label or react against the deviant as a means of explaining future behavior. Labeling theory examines the consequences of the stigma on the individual

who has been labeled. Early statements on labeling theory were offered by Lemert (1951), Kitsuse (1962), and Becker ([1963] 1997).

For the purposes of the present study, labeling gains significance either if it induces some kind of reaction on the part of school staff that ultimately influences school dropout, or if the labeled individual comes to internalize the label and self-identifies with the label. Both processes may ultimately lead to school dropout.

Regarding the first process, research shows that relations with school staff, and teachers in particular, has a strong influence on student outcomes like academic engagement, achievement, discipline, and dropout (Cernkovich and Giordano 1992; Jordan, Lara, and McPartland 1996). Thus, the processes of labeling may lead to a weakening of social bonds described by Hirschi (1969). To the extent that the arrest of a student influences some kind of reaction and treatment on the part of school staff and other students, or alienation from school, arrest may indirectly lead to school dropout.

It is important to note that students both voluntarily and involuntarily drop out of school. Whereas students may voluntarily drop out of school following arrest because they rationalize that the supposed benefits of education are not likely to materialize given the stigma of a criminal record, or because of a reduction in their social bonds to schools and school actors, students may also be forced to drop out of school because of a school's institutional reaction to their arrest. For instance, Riehl (1999) describes two different reasons for why educational institutions push students out of school. From an organizational perspective, she first argues that schools, as rational organizations, seek to demonstrate school effectiveness. Perhaps the most accepted means to demonstrate

effectiveness is through test scores. One way to raise test scores is to remove those students who are disruptive in class and therefore prevent other students from improving their scores, or more directly by simply removing those students with the lowest test scores. The second reason educational institutions push students out of school follows from an institutional perspective, in that schools attempt to gain legitimacy by excluding those students who detract from the school's appearance as a safe, effective school.

Hirschfield (2003), in an argument similar to the one presented by Riehl (1999), defines what he terms institutional exclusion theory as a means of explaining school-related responses to the criminal sanctioning of students. Hirschfield's institutional exclusion theory can be thought of as a variant of labeling theory, whereupon student criminals are institutionally excluded from the educational process once labeled. He describes various "push" factors that lead to exclusion, such as school zero tolerance policies towards gangs and criminals, or transfers of problem students. In essence, school systems have in place a number of policies and practices designed to provide a safe and effective learning environment for students, but which ultimately lead to the exclusion of problem students from the normal schooling process.

As one example from the Chicago Public School system, students in violation of Group 5 or Group 6 acts of misconduct under the CPS Uniform Discipline Code may be expelled from school and assigned to Alternative Safe Schools (Chicago Public Schools 2005). Group 5 and Group 6 acts involve serious criminal behavior either on or off school grounds, which may include arrest and criminal sanctioning. In addition to support services and small class sizes, CPS Safe Schools provide a special curriculum focused on

core academic subjects and social skills. However, to the extent that expulsion or assignment to alternative programs either stigmatizes students or decreases their bonds to schools, school dropout may be the end result of this process. Evidence from prior research certainly buttresses this point. For instance, while some students may benefit from the dedicated attention and specialized support found in alternative programs, research shows that the most common transition from participation in alternative programs is not to high school graduation, but rather to school dropout (Kelly 1993). Additionally, Skiba and Peterson (1999) report that zero tolerance policies and corresponding sanctions like school suspension and expulsion are consistent predictors of school dropout. Moreover, ethnographic research (Bowditch 1993) shows that school officials actively use --- and even admit to using --- practices of exclusion and suspension as a means of pushing troublemakers and those students deemed unlikely to succeed out of school. Thus, schools have in place institutional mechanisms which can be used to exclude problem students, such as those that have been arrested.

In addition to "push" factors, Hirschfield (2003) characterizes "pull" factors of exclusion, which refer to the fact that time spent moving through criminal case processing (arrest, detention, prosecution) is time lost from the educational process. Even if students are allowed to remain in school following arrest, they may miss so many classes and exams because of criminal case processing that they inevitably fail a grade. Given that grade retention is one of the most robust predictors of school dropout (see, e.g., Janosz et al. 1997; Rumberger 1987), the end result of time away from the classroom could be school dropout. In addition to dropping out due to grade retention, students may

be automatically dropped from school because of excessive absences. In the Chicago Public School system, students over the age of 16 can be dropped from school enrollment because of 20 or more consecutive absences, which may occur because of juvenile detention or because of time spent transitioning through the criminal prosecution process (Allensworth and Easton 2001; Chicago Public Schools 2006a).

9.2.3 Controlling for a Common Set of Predictors

As a final comment, if some of the same theoretical perspectives can be used to explain both school dropout and arrest, and if there is a common set of factors (e.g. absence of family supervision or weakened bonds to school) that at least partially explain dropout and arrest, then in order to determine if the events of dropout and arrest are related, it is necessary to control for the factors that likely influence both outcomes. Using counterfactual reasoning, it is appropriate to think of analyses as follows: for the analysis of arrest, I am interested in comparing the prevalence of arrest in early adulthood of two or more otherwise similar subjects with respect to individual, family, peer, and contextual covariates who differ solely on dropout status. In essence, there are two outcomes of interest: the probability of arrest given school dropout and the probability of arrest for students who did not drop out. Similarly for the analysis of school dropout, I am interested in comparing the dropout status of two or more otherwise similar subjects with respect to individual, family, peer, and contextual covariates who differ solely on the number of times they have been arrested up to a certain age.

In order to assess differences in outcome measures for two otherwise equal individuals, sufficient controls must be considered in statistical models. Two covariates are crucial for this task. With the analysis of arrest, an enormous amount of research suggests that there is much continuity in criminal behavior, and that past behavior and corresponding sanctions influence future behavior (see, e.g., Sampson and Laub 1993). Therefore, to assess the influence of school dropout on arrest, it is critical to control for prior arrest. With the analysis of dropout, results in Chapter 5 revealed that subject IQ is one of the most consequential and robust predictors of school dropout. Thus, it is necessary to control for IQ when assessing whether arrest has any kind of developmental influence on school dropout.

9.3 DATA AND RESEARCH DESIGN

The study sample is drawn from the Project on Human Development in Chicago Neighborhoods (PHDCN) Longitudinal Cohort Study. This chapter focuses on the 12, 15, and 18 age cohorts. Recall from Chapter 3 that 1,775 youth in the PHDCN sample consented to an official records search, and 1,268 of these youth attended Chicago Public Schools at some point in time from 1991 to 2003. Out of these 1,268 youth, 571 graduated from CPS, 438 dropped out of CPS, and the remainder transferred to a non-CPS institution, either in Chicago or outside, prior to the completion or the termination of high school. With this latter group, I lack data on whether youth ultimately graduated or dropped out of school. Thus, the analytic sample utilized in this chapter is restricted to the 1,009 youth who either graduated or dropped out of the Chicago Public Schools.

9.3.1 Dependent Variables

Two dependent variables are used in analyses to follow, with the first being arrest. I use the count of arrests from age 20 onward for each subject, with data obtained from both the Chicago Police Department and Illinois State Police. These data cover the time period from 1995 to 2001. Given that older cohorts have more observation points past age 19, there are likely cohort differences in the count of arrests. Therefore, including a control for cohort is necessary in analyses.

The second dependent variable used in analyses is school dropout. The measure of school dropout derives from student administrative data provided by the Chicago Public Schools (CPS). These student administrative data cover the time period from 1991 to 2003, and provide information on student enrollment and reasons for non-enrollment in CPS (i.e. drop out, graduation, transfer). As described in Chapter 5, there are numerous considerations to make in the determination of whether a student dropped out of school. For instance, recall that school administrative bodies often make a judgement as to whether a "lost" student is to be categorized as a transfer student or a dropout. For the purposes of the analysis to follow, I include both normal dropouts and lost students in a binary indicator of dropout. However, results presented in Chapter 5 suggest that the decision on whether or not to include lost students in dropout measures does not affect inferences about the predictors of school dropout.

9.3.2 Independent Variables

Included in the statistical models are a number of individual, family, peer, and contextual-level predictors of arrest. Listed below are the variables used in analyses. See Chapter 3 for a discussion of applicable data sources, and the appendices for scale construction. Note that a partial set of these controls are entered into initial statistical models, but the full set are used to assess the potential for omitted variable bias. Further discussion of analytic strategy is given in the next section.

At the individual-level, key demographic factors include cohort, gender, immigrant generational status (1^{st}, 2^{nd}, or 3^{rd} and higher), and race and ethnicity. Five dummy indicators of race and ethnicity are employed in the analyses: African-American, Mexican, Puerto Rican/Other Latino, other race, and white. African-American, white, and other race groups are all non-Latino. Additional individual-level characteristics include IQ, marijuana, alcohol, and tobacco use, and self-reported offending. Educational-related controls include student mobility, truancy, special education attendance, and grade retention. Finally, I also include controls for various aspects of temperament gathered from the EASI Temperament survey (see Buss and Plomin 1975).

At the family-level, I include two measures of family structural characteristics: family socioeconomic status and parental marital status. Marital status is described with a binary variable reflecting the marital status of a youth's biological parents. I also examine the association between the two outcome measures and five predictors of family social processes: supervision, support, control, conflict, and religiosity. Finally, I examine the influence of parental criminality, substance abuse, and depression on arrest and school

dropout. In terms of peers, I assess the effects of five measures of peer influence: support, attachment, peer attachment to school, peer pressure, and deviance of peers.

Characteristics of neighborhood structure are captured from nine indicators, all derived from 1990 census data: neighborhood racial/ethnic composition, concentrated disadvantage, concentrated poverty, percent below poverty, residential stability, percentage of foreign born residents, immigrant concentration, percent of elementary and high school students residing in a given neighborhood who attend public school, and population density. Population density is calculated as the number of residents per square kilometer in each neighborhood. Three measures of neighborhood social processes derive from the 1994-1995 PHDCN Community Survey: collective efficacy, child-centered social control, and social capital.

Finally, the structural characteristics of Chicago Public Schools are measured by two indicators: the racial and ethnic composition of the school and the percentage of students signed up for free or reduced price lunch (referred to hereafter as school poverty). Given frequent school mobility among students in the sample, especially from elementary school to high school, structural characteristics describe the school a student attended during 8^{th} grade. If a given student only attended high school in Chicago, then data on the structural characteristics of her or his high school are utilized instead.

9.4 ANALYTIC STRATEGY

Analyses follow three paths. First, I present a descriptive comparison of the individual, familial, peer, and contextual characteristics of four groups of subjects:

1) youth who were arrested and who dropped out of school, 2) youth who were arrested and graduated from high school, 3) youth who were not arrested and dropped out, and 4) youth who were not arrested and graduated. For continuous covariates, I use F-statistics to test for significant differences across groups on the mean values of the covariates. For binary covariates, I test for differences with Chi-square statistics.

Second, I perform inferential analyses with multilevel logit regression models with a binary measure of arrest prevalence as the dependent variable. In this second analysis, I want to determine if dropping out of school subsequently leads to arrest. Therefore, I model the effect of dropout on the prevalence of arrest from age 20 onwards. With just a couple exceptions, all eventual CPS dropouts in the sample left school prior to the age of 20. Thus, I use this age as a cutoff. For the few students who dropped out after this age, I exclude those observations from inferential analyses. Additionally, note that given a lack of arrest data on the 12-year-old cohort from age 20 onwards, this set of analyses is performed solely on the 15- and 18-year old cohorts.

Third, I estimate a similar set of multilevel logit regression models with school dropout as the dependent variable in order to examine the association between dropout and individual, family, peer, and contextual factors. Most importantly, I also include in models of school dropout a binary variable indicating whether a given youth was arrested prior to age 16. Note that, by law, students cannot drop out of Chicago Public Schools prior to age 16, and cannot be dropped from school by CPS before this age.[1] Recall that

[1] This policy changed effective January 1, 2005. Now students must be 17 years of age to drop out of the Chicago Public Schools. However, all analyses are based on observation years prior to the policy change, when age 16 was the cutoff for dropout eligibility.

the arrest data covers the period from 1995 to 2001. Given a lack of arrest data on the 18-year-old cohort prior to age 16, this set of analyses is performed solely on the 12- and 15-year old cohorts.

9.5 RESULTS

9.5.1 Descriptive Summary of Sample

Table 9-1 reveals that 43.4% of the sample dropped out of school prior to graduation[2], and that 21% had been arrested through the last observation period (2001). Of the 438 dropouts, 30.8% had been arrested. In contrast, of the 571 graduates, 13.5% had been arrested. Of the 212 arrestees, 63.7% dropped out of school prior to graduation. Of the 797 non-arrestees, 38% dropped out of school. Chi-square tests reveal that there is a significant association between these two outcomes measures. The next subsection will examine whether this relationship holds after controlling for individual, family, peer, and contextual predictors, and after considering the temporal ordering of dropout and arrest events. Before adding relevant controls in an inferential model, first I will describe the mean values of these control variables across the four possible classifications of arrest and school dropout.

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[2] For comparison with all CPS students, Allensworth and Easton (2001, p.5) report that, by the year 2000, 41.8% of the cohort of CPS students who were 13-years old in 1994 had dropped out. In 1997, the figure was 44.3%. Thus, figures from the PHDCN data are comparable to prevalence of dropout in the CPS system as a whole.

Table 9-1. Cross-tabulation of School Dropout and Arrest, PHDCN Cohorts 15 and 18

			Arrest		
			0	1	Total
Dropout	0	Count	494	77	571
		% of Dropout	86.5%	13.5%	100.0%
		% of Arrest	62.0%	36.6%	56.6%
	1	Count	303	135	438
		% of Dropout	69.2%	30.8%	100.0%
		% of Arrest	38.0%	63.7%	43.4%
Total		Count	797	212	1,009
		% of Dropout	79.0%	21.0%	100.0%
		% of Arrest	100.0%	100.0%	100.0%

Chi-Square = 44.890, P-Value = 0.000

Table 9-2 presents summary statistics by group for individual and demographic characteristics of the sampled youth. This table reveals that arrestees are more likely to be male than non-arrestees, and more likely to be African-American. High school graduates have significantly higher IQs than non-graduates, particularly among the non-arrestee graduates. Not surprisingly, delinquent and criminal offending is significantly higher among arrestees, especially those arrestees who are also school dropouts. Marijuana, alcohol, and cigarette use also tends to be higher among the arrestees than the non-arrestees. Student mobility, truancy, special education attendance, and grade retention are all greatest among the group of arrestees/dropouts. There are numerous temperamental differences across groups. Impulsivity is greatest among the arrestees/dropouts, and the same is true for lack of inhibitory control. Persistent youth, whether arrestees or non-arrestees, are more likely to graduate from high school.

Table 9-2. Descriptive Characteristics of Sample, Individual-Level

	Arrested and Dropped Out (N = 135)		Arrested and Graduated (N = 77)		Not Arrested and Dropped Out (N = 303)		Not Arrested and Graduated (N = 494)		Hypothesis Tests	
	Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)	F / ChiSq	P-value
Male	0.67	(0.47)	0.71	(0.45)	0.40	(0.49)	0.39	(0.49)	58.398	0.000
African-American	0.60	(0.49)	0.62	(0.49)	0.39	(0.49)	0.41	(0.49)	28.922	0.000
Mexican	0.21	(0.41)	0.18	(0.39)	0.32	(0.47)	0.31	(0.46)	11.171	0.011
Puerto Rican/Other Latinc	0.10	(0.30)	0.09	(0.29)	0.14	(0.35)	0.12	(0.33)	2.460	0.483
White	0.07	(0.26)	0.09	(0.29)	0.10	(0.30)	0.12	(0.33)	3.054	0.383
Other Race/Ethnicity	0.02	(0.15)	0.01	(0.11)	0.04	(0.20)	0.04	(0.20)	2.776	0.428
Cohort Proportions										
Cohort 12	0.36	(0.48)	0.17	(0.38)	0.46	(0.50)	0.39	(0.49)	21.996	0.000
Cohort 15	0.36	(0.48)	0.32	(0.47)	0.31	(0.46)	0.34	(0.47)	1.250	0.741
Cohort 18	0.28	(0.45)	0.51	(0.50)	0.23	(0.42)	0.26	(0.44)	24.036	0.000
IQ	94.11	(12.64)	97.49	(14.20)	95.41	(13.44)	102.01	(14.58)	19.916	0.000
Offending										
Violent	0.70	(1.07)	0.54	(0.95)	0.18	(0.97)	0.02	(0.82)	23.233	0.000
Property	0.30	(0.71)	0.25	(0.69)	0.05	(0.58)	0.05	(0.58)	8.134	0.000
Public-Order	0.43	(0.71)	0.39	(0.64)	0.17	(0.64)	0.03	(0.56)	19.160	0.000
Drug	1.16	(0.19)	1.15	(0.17)	1.11	(0.17)	1.11	(0.11)	4.837	0.002
Marijuana Use	1.89	(1.38)	1.92	(1.47)	1.47	(1.04)	1.23	(0.79)	21.206	0.000
Alcohol Use	1.75	(0.94)	1.95	(1.12)	1.48	(0.74)	1.40	(0.66)	16.821	0.000
Cigarette Use	2.48	(1.84)	2.37	(1.91)	1.80	(1.51)	1.48	(1.16)	22.047	0.000
Student Mobility	2.59	(1.33)	2.34	(1.24)	2.43	(1.29)	2.27	(1.18)	2.593	0.051
Chronic Truancy	0.13	(0.34)	0.06	(0.25)	0.08	(0.27)	0.01	(0.12)	12.389	0.000
Ever Special Ed. Student	0.43	(0.50)	0.41	(0.49)	0.32	(0.47)	0.20	(0.40)	12.220	0.000
Ever Retained in Grade	0.35	(0.48)	0.29	(0.46)	0.27	(0.44)	0.09	(0.29)	21.756	0.000
Temperament (EASI)										
Impulsivity	2.87	(0.57)	2.71	(0.49)	2.78	(0.57)	2.53	(0.55)	20.481	0.000
Lack of Control	2.87	(0.97)	2.64	(0.82)	2.63	(0.96)	2.41	(0.89)	10.432	0.000
Sensation Seeking	3.02	(0.73)	2.94	(0.81)	2.93	(0.78)	2.64	(0.75)	14.452	0.000
Persistence	2.46	(0.95)	2.67	(0.76)	2.44	(0.89)	2.81	(0.78)	14.411	0.000

Table 9-3 displays summary statistics for the family and peer covariates. Here, it can be seen that there are significant differences across groups in the immigrant status of the youth, as well as differences in family socioeconomic status and the proportion of youth with married parents. School dropouts with arrest records are far less likely to come from households with both biological parents than other groups. Results also show that family supervision and support are lowest for the group of non-arrestees who dropped out of school, even less so than the group of arrestees who dropped out. Furthermore, family conflict is greatest in the group of non-arrestees who dropped out.

In terms of parental criminal records and substance abuse, findings in Table 9-3 illustrate that there is little difference across groups. As for peer influence, youth arrestees are more likely to associate with deviant peers, and to be pressured by their peers. Interestingly, peers of the two groups of arrestees are more likely to be attached to school than non-arrestees.

Table 9-4 illustrates differences across groups in terms of neighborhood of residence and school attended. The two groups of arrestees tend to live in neighborhoods with greater levels of African-American composition. This finding is expected given results from Table 9-2 that showed that arrestees are predominately African-American. All groups come from neighborhoods where at least 78% of elementary and high school students attend public schools. Results also reveal significant differences across groups in the various poverty measures (% Below Poverty, Concentrated Disadvantage, and Concentrated Poverty), and differences in the two immigration measures (% Foreign-born and Immigrant Concentration). There is not any difference across groups in

Table 9-3. Descriptive Characteristics of Sample, Family-Level and Peer-Level

	Arrested and Dropped Out (N = 135)		Arrested and Graduated (N = 77)		Not Arrested and Dropped Out (N = 303)		Not Arrested and Graduated (N = 494)		Hypothesis Tests	
	Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)	F / Chi Sq	P-value
Immigrant Generation										
First	0.10	(0.30)	0.10	(0.31)	0.17	(0.37)	0.17	(0.37)	5.791	0.122
Second	0.19	(0.39)	0.16	(0.37)	0.27	(0.44)	0.30	(0.46)	12.546	0.006
Third or higher	0.72	(0.45)	0.74	(0.44)	0.57	(0.50)	0.53	(0.50)	23.539	0.000
Family SES	-0.23	(1.23)	-0.01	(1.15)	-0.40	(1.14)	0.03	(1.30)	8.006	0.000
Married Parents	0.30	(0.46)	0.43	(0.50)	0.41	(0.49)	0.57	(0.50)	41.409	0.000
Family Supervision*	-0.14	(0.84)	-0.19	(0.72)	-0.21	(0.79)	0.02	(0.71)	4.585	0.003
Family Support	-0.13	(0.85)	0.06	(0.85)	-0.19	(0.96)	-0.03	(0.86)	2.988	0.030
Family Control	58.69	(7.83)	59.64	(7.81)	57.63	(9.13)	58.17	(8.87)	1.241	0.293
Family Conflict	49.37	(9.92)	47.55	(9.72)	50.97	(11.53)	47.96	(10.44)	5.416	0.001
Family Religiosity	59.97	(7.17)	59.68	(8.26)	59.15	(7.96)	60.09	(7.98)	0.907	0.437
Father with Criminal Record	0.11	(0.32)	0.13	(0.34)	0.13	(0.33)	0.10	(0.30)	0.457	0.712
Father with Substance Use Problem	0.19	(0.40)	0.18	(0.39)	0.17	(0.38)	0.14	(0.35)	1.009	0.388
Mother with Substance Use Problem	0.07	(0.26)	0.06	(0.25)	0.06	(0.23)	0.03	(0.18)	1.872	0.133
Mother with Depression Problem	0.20	(0.40)	0.14	(0.35)	0.19	(0.40)	0.13	(0.34)	2.334	0.072
Friend Support	0.05	(0.49)	0.10	(0.47)	-0.02	(0.57)	0.08	(0.51)	2.547	0.055
Peer Attachment	-0.02	(0.73)	0.10	(0.66)	0.02	(0.76)	0.10	(0.69)	1.348	0.257
Peer School Attachment	0.16	(0.45)	0.15	(0.42)	0.08	(0.44)	0.02	(0.41)	4.924	0.002
Peer Pressure	0.51	(1.16)	0.57	(1.11)	0.30	(1.13)	0.11	(1.09)	7.305	0.000
Deviance of Peers	0.49	(0.81)	0.40	(0.78)	0.24	(0.82)	0.02	(0.78)	15.711	0.000

Note: For entries marked with an asterisk (*), data is only available for the 12- and 15-year-old cohorts.

Table 9-4. Descriptive Characteristics of Sample, Contextual-Level

	Arrested and Dropped Out (N = 135)		Arrested and Graduated (N = 77)		Not Arrested and Dropped Out (N = 303)		Not Arrested and Graduated (N = 494)		Hypothesis Tests	
	Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)	F	P-value
Neighborhood										
% African-American	43.86	(39.44)	52.70	(41.84)	36.80	(38.46)	38.56	(39.79)	3.952	0.008
% Mexican	16.50	(18.42)	15.40	(23.18)	22.54	(25.58)	19.48	(22.47)	3.323	0.019
% Puerto Rican/Other Latino	8.55	(14.01)	5.59	(11.85)	7.98	(12.14)	7.57	(11.86)	1.047	0.371
% White	24.97	(26.24)	21.96	(27.75)	26.93	(28.23)	28.23	(28.97)	1.356	0.255
% Other Race/Ethnicity	3.36	(5.18)	2.58	(4.90)	3.05	(5.11)	3.21	(4.72)	0.498	0.684
% Public School	0.82	(0.13)	0.80	(0.15)	0.79	(0.15)	0.79	(0.14)	1.921	0.124
% Below Poverty	23.96	(15.20)	21.00	(15.28)	22.46	(15.62)	18.88	(13.31)	6.398	0.000
% Foreign-born	18.09	(15.18)	14.81	(16.32)	20.22	(15.40)	20.41	(15.88)	3.409	0.017
Concentrated Disadvantage	0.19	(0.70)	0.12	(0.73)	0.09	(0.74)	-0.04	(0.66)	5.094	0.002
Concentrated Poverty	0.15	(0.75)	0.09	(0.77)	0.03	(0.78)	-0.11	(0.69)	5.640	0.001
Immigrant Concentration	0.23	(1.02)	0.01	(1.12)	0.44	(1.12)	0.33	(1.06)	3.675	0.012
Residential Stability	-0.08	(1.09)	0.32	(1.12)	-0.07	(0.94)	0.09	(1.00)	4.314	0.005
Population Density (1000s)	7.89	(4.80)	6.84	(4.23)	7.44	(4.71)	7.15	(4.10)	1.373	0.250
Collective Efficacy	3.86	(0.27)	3.92	(0.26)	3.86	(0.24)	3.89	(0.23)	1.682	0.169
Child Control	3.24	(0.32)	3.32	(0.33)	3.25	(0.32)	3.29	(0.32)	2.107	0.098
Social Capital	3.52	(0.27)	3.57	(0.23)	3.53	(0.22)	3.54	(0.21)	0.899	0.441
School										
Poverty	87.73	(14.04)	84.84	(14.84)	86.80	(13.22)	82.22	(17.22)	7.508	0.000
% African-American	56.30	(38.72)	64.43	(38.92)	45.81	(39.81)	45.67	(39.26)	7.120	0.000
% Latino	32.36	(32.61)	25.85	(31.06)	41.58	(35.92)	38.50	(33.90)	5.422	0.001
% White	8.34	(14.80)	7.34	(13.32)	9.66	(15.59)	12.27	(16.41)	4.146	0.006
% Other Race/Ethnicity	2.99	(6.14)	2.38	(5.39)	2.95	(5.48)	3.56	(6.05)	1.349	0.257

population density, but school dropouts do tend to live in neighborhoods with significantly lower levels of residential stability. Interestingly, despite key differences across groups in the structural characteristics of the neighborhoods where they reside, there is no difference across groups in terms of neighborhood social processes. In other words, on average, the level of collective efficacy, social control, and social capital is not any different across groups.

As for schools, the group of arrestees/dropouts attended the most impoverished schools (while still enrolled in school). There are also significant differences across groups in the racial and ethnic composition of schools attended.

9.5.2 Multilevel Model of Arrest

Results from multilevel regressions of arrest on school dropout and other predictors are presented in Table 9-5. The middle column of each model labeled "OR" reveals the change in the odds of arrest for a one unit change in the independent variable. Results in Model 1 reveal that arrest is significantly more likely among males, less likely among members of the 15-year-old cohort, less likely among youth from married parent families, and less likely among 1st generation immigrant youth relative to 3rd generation.

As expected, Model 2 reveals that prior arrest has a substantial, significant effect on subsequent arrest.[1] The odds of arrest from age 20 onwards are 11 times greater for those individuals with prior arrests. This finding accords with state dependence theories

[1] Chapters 4 and 6 reveal that self-reported offending is a highly significant predictor of arrest. Instead of adding measures of offending, however, in this chapter I add a measure of prior arrest as a means of controlling for prior behavior.

Table 9-5. Covariates of Arrest (Age 20+), PHDCN Cohorts 15 and 18

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Coef.	OR	Coef.	OR	Coef.	OR	Coef.	OR	Coef.	OR
Intercept	-1.591 ***		-1.955 ***		-2.222 ***		-1.994		-1.426	
White	-0.510	0.601	-0.496	0.609	-0.515	0.597	-0.392	0.676	-0.558	0.572
Mexican	-0.666	0.514	-0.819	0.441	-0.909	0.403	-0.847	0.429	-0.803	0.448
Puerto Rican/Other Latino	-0.698	0.498	-1.034	0.355	-1.102	0.332	-0.718	0.488	-0.831	0.435
Other Race/Ethnicity	-0.764	0.466	-0.257	0.773	-0.337	0.714	-0.325	0.723	-0.476	0.621
Male	1.882	6.565 ***	1.420	4.136 ***	1.489	4.433 ***	1.528	4.610 ***	1.463	4.318 ***
Cohort 15	-1.225	0.294 ***	-1.723	0.179 ***	-1.762	0.172 ***	-1.921	0.147 ***	-1.945	0.143 ***
Married Parents	-0.749	0.473 **	-0.714	0.490 **	-0.622	0.537 *	-0.620	0.538 *	-0.651	0.521 *
Family SES	-0.037	0.964	-0.030	0.970	-0.018	0.982	-0.020	0.980	-0.044	0.957
1st Generation Immigrant	-1.360	0.257 **	-1.135	0.321 *	-1.039	0.354	-1.208	0.299 *	-1.062	0.346
2nd Generation Immigrant	-0.256	0.774	0.036	1.037	0.041	1.041	-0.040	0.961	0.113	1.119
Prior Arrest (Before Age 20)			2.406	11.085 ***	2.293	9.900 ***	2.243	9.424 ***	2.312	10.093 ***
School Dropout					0.545	1.724 *	0.659	1.934 **	0.694	2.001 **
Family Conflict							-0.037	0.963 **	-0.037	0.963 **
Family Control							0.027	1.027	0.031	1.031 *
Peer Pressure							-0.160	0.853	-0.156	0.855
Deviance of Peers							0.325	1.384	0.307	1.359
Nbhd Conc Disadvantage									-0.017	0.983
Nbhd Immigrant Conc									-0.242	0.785
Nbhd Res Stability									0.081	1.085
School Poverty									0.002	1.002
School % African-American									-0.012	0.988
School % Latino									-0.010	0.990

* p <0.10 ** p<0.05 *** p<0.01

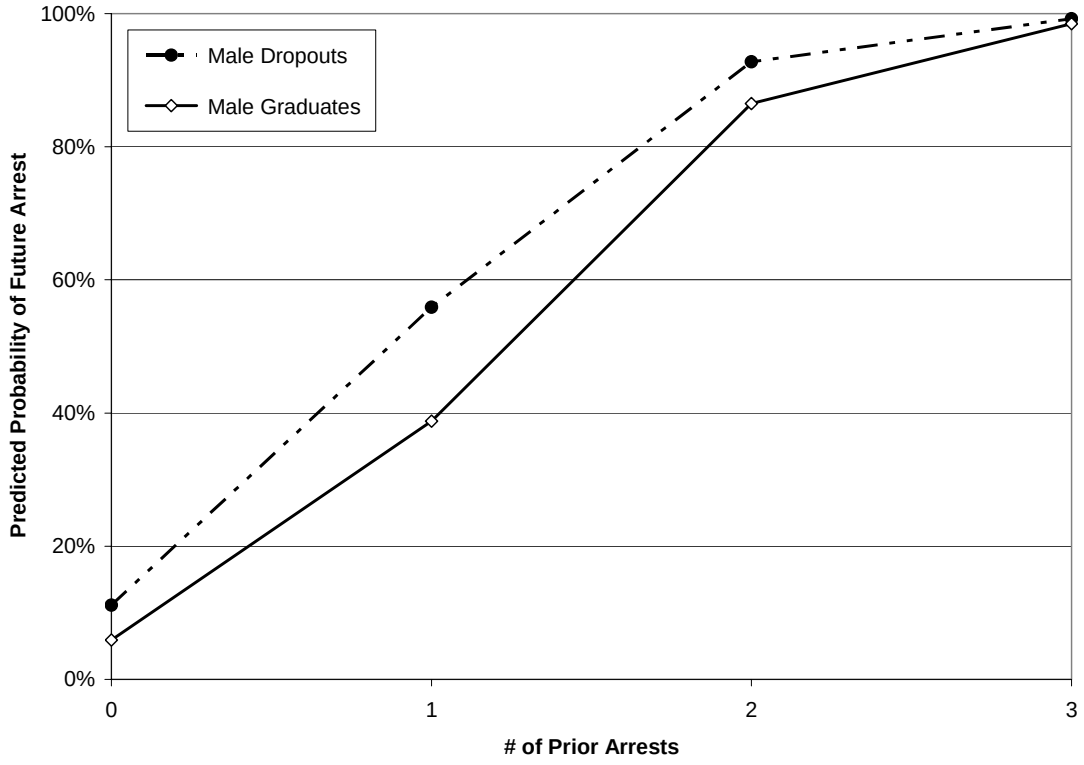
Notes: "OR" refers to Odds Ratio; Due to the size of the table, standard errors not shown.

of crime, which suggest that arrest causally influences the future probability of arrest (see, e.g., Nagin and Paternoster 1991; Sampson and Laub 1993). Findings presented in Model 3 reveal that even after controlling for demographic covariates and prior arrest, there is still a marginally significant association between arrest and school dropout. The odds of arrest are 1.7 times greater for school dropouts than for graduates. In percentage terms, the odds of arrest are 72% (100*[exp(0.545) -1]) higher for school dropouts.

Results in Model 4 show that the relation between arrest and dropout holds even after controlling for family and peer influences. In fact, the association has increased. Similarly with Model 5, the relation between arrest and dropout holds after controlling for neighborhood and school structural characteristics.

To illustrate the differences in arrest between school dropouts and school graduates, Figure 9-1 plots the predicted probability of arrest for dropouts and graduates at different counts of prior arrests. All other covariates are held at their sample means. The gap between these two curves represents the independent effect of school dropout on arrest. Note that there are marked differences in the probability of future arrest between dropouts and graduates with low numbers of prior arrests. However, differences between groups disappear at high levels of prior arrest, to the extent that both dropout and graduate males are virtually assured of re-arrest given three or more prior arrests.

Figure 9-1. Predicted Probability of Arrest, by School Dropout



9.5.3 Multilevel Model of School Dropout

Results from regressions of school dropout on arrest and other predictors are presented in Table 9-6. The middle column of each model labeled "OR" reveals the change in the odds of school dropout for a one unit change in the independent variable. Results in Model 1 reveal that there is little difference across race/ethnicity and cohort in the likelihood of school dropout. However, there are differences across family structure, immigrant generational status, and gender.

Model 2 illustrates the association between IQ and school dropout. For each 10 unit increase in IQ, the odds of school dropout declines by 24% (100*[(-0.027*10) – 1]).

As expected, Model 3 reveals that arrest and school dropout are significantly associated, even after controlling for IQ and demographic characteristics. The odds of dropping out of school are roughly 5.5 times greater for each additional student arrest.

In Model 4 it can been seen that dropout is negatively related to family supervision. While dropout is not significantly associated with peers' school attachment, results do show that the odds of dropping out are 1.326 times greater for each unit increase in the deviance of one's peers. As expected, persistence and dropout are negatively related, and marijuana use and dropout are positively related. Finally, dropout is more likely among those students who change schools often, and among students who have failed one or more grades. Yet despite all of these highly significant associations with dropout, results in Model 4 show that the inclusion of these various predictors does little to mediate the association between dropout and arrest. The odds of dropping out of school are still over 5 times greater for each additional student arrest. In Model 5, I add controls for neighborhood and school characteristics, yet find that all of these contextual factors have little effect on the odds of dropping out of school net of other factors.

To illustrate the impact of arrest on school dropout, Figure 9-2 plots the predicted probability of school dropout for sampled males at selected counts of arrest across different levels of IQ. Focusing on the mean IQ curve, this figure reveals that there is a 40% probability of school dropout for public school males with zero arrests, and the probability increases to nearly 80% for subjects with one arrest and to nearly 100% for students with three or more arrests.

Table 9-6. Covariates of School Dropout, PHDCN Cohorts 12 and 15

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Coef.	OR	Coef.	OR	Coef.	OR	Coef.	OR	Coef.	OR
Intercept	-0.092		2.534 ***		2.405 ***		1.599 **		0.503	
White	0.319	1.375	0.447	1.563	0.491	1.634	0.271	1.312	0.243	1.276
Mexican	0.382	1.465	0.437	1.547	0.448	1.566	0.446	1.563	0.188	1.207
Puerto Rican/Other Latino	0.390	1.477	0.488	1.630	0.551	1.734 *	0.544	1.723	0.382	1.465
Other Race/Ethnicity	0.455	1.577	0.655	1.925	0.742	2.100	0.599	1.821	0.683	1.980
Male	0.410	1.507 **	0.442	1.555 **	0.372	1.451 **	0.059	1.060	0.062	1.064
Cohort 15	-0.065	0.937	-0.100	0.905	-0.016	0.985	-0.937	0.392 ***	-0.941	0.390 ***
Married Parents	-0.556	0.574 ***	-0.491	0.612 ***	-0.475	0.622 **	-0.177	0.838	-0.158	0.854
Family SES	-0.298	0.742 ***	-0.223	0.800 ***	-0.237	0.789 ***	-0.311	0.733 ***	-0.268	0.765 ***
1st Generation Immigrant	-0.493	0.611	-0.670	0.512 **	-0.615	0.541 *	-0.420	0.657	-0.505	0.604
2nd Generation Immigrant	-0.820	0.441 ***	-0.839	0.432 ***	-0.778	0.459 ***	-0.655	0.519 **	-0.753	0.471 **
IQ			-0.027	0.973 ***	-0.027	0.973 ***	-0.018	0.982 **	-0.016	0.984 **
Total Arrests by Age 16					1.695	5.449 ***	1.640	5.156 ***	1.556	4.741 ***
Family Supervision							-0.282	0.755 **	-0.275	0.759 **
Peer School Attachment							-0.187	0.829	-0.274	0.761
Deviance of Peers							0.282	1.326 *	0.315	1.371 **
Persistence							-0.450	0.638 ***	-0.437	0.646 ***
Marijuana Use							0.617	1.854 ***	0.630	1.878 ***
Student Mobility							0.146	1.157 *	0.129	1.137 *
Retained in Grade							1.267	3.550 ***	1.328	3.775 ***
Nbhd Conc Disadvantage									-0.123	0.884
Nbhd Immigrant Conc									0.061	1.063
Nbhd Res Stability									-0.176	0.839
School Poverty									0.004	1.004
School % African-American									0.007	1.007
School % Latino									0.009	1.009

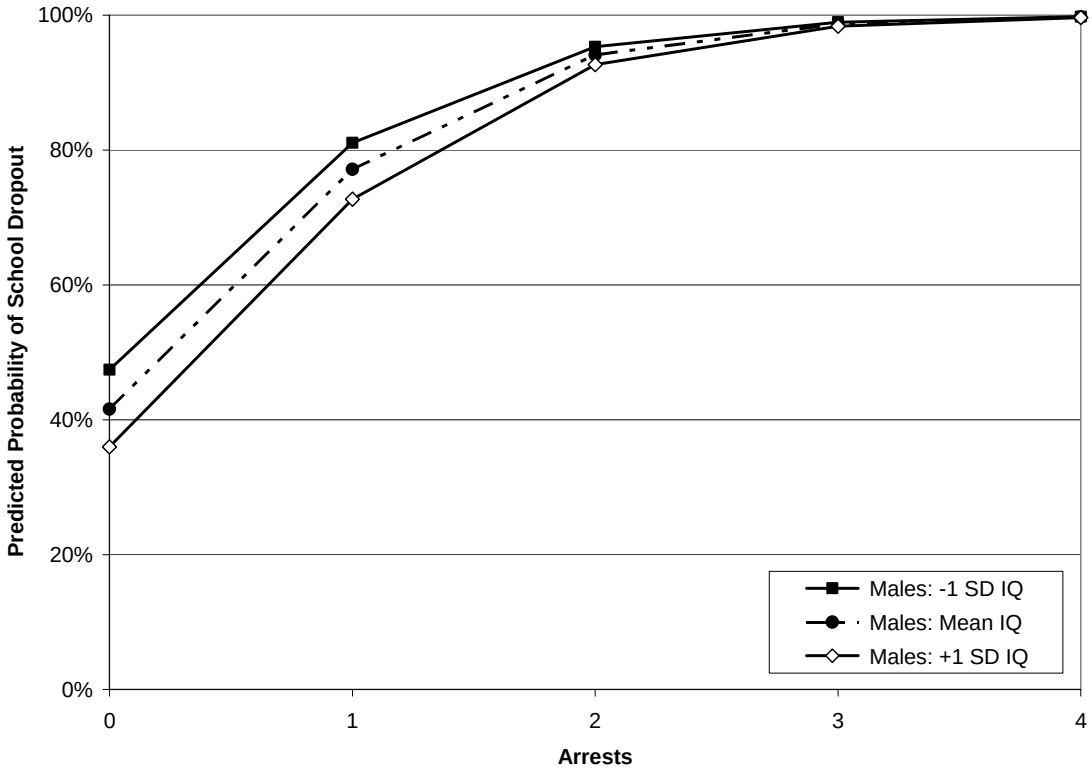
* p <0.10 ** p<0.05 *** p<0.01

Notes: "OR" refers to Odds Ratio; Due to the size of the table, standard errors not shown.

controls for neighborhood and school characteristics, yet find that all of these contextual factors have little effect on the odds of dropping out of school net of other factors.

To illustrate the impact of arrest on school dropout, Figure 9-2 plots the predicted probability of school dropout for sampled males at selected counts of arrest across different levels of IQ. Focusing on the mean IQ curve, this figure reveals that there is a 40% probability of school dropout for public school males with zero arrests, and the probability increases to nearly 80% for subjects with one arrest and to nearly 100% for students with three or more arrests.

Figure 9-2. Predicted Probability of School Dropout, by Arrest



9.6 DISCUSSION

While it is generally accepted that there is a non-spurious relation between school failure and delinquent or criminal behavior, establishing the causal ordering of this relation has long been an interest in the social sciences (see, e.g., Phillips and Kelly 1979). Much literature assumes that failure in school (e.g. school dropout) occurs prior to criminal behavior and criminal sanctioning, though theory offers numerous explanations for both directions of this temporal process. In contrast to previous research on the school failure-problem behavior link, which generally favors a unidirectional approach when establishing causality, the approach taken in this study is that school failure (i.e. dropout) and problem behavior (i.e. arrest) are reciprocally related. Prevailing theory supports this argument, as do results from this chapter. The use of longitudinal data on school enrollment and arrest provided the means to examine this reciprocal relation and the temporal order of outcomes.

9.6.1 Summary of Results

For the analysis of arrest, results suggest that a number of family characteristics (e.g. parental marital status and family conflict) are significantly associated with arrest. Furthermore, results reveal much continuity in behavior in that prior arrest is one of the most important predictors of future arrest. Most importantly, findings reveal that school dropout is a significant predictor of the prevalence of future arrest. Results from Models 3 through 5 in Table 9-5 all reveal that the odds of arrest are over 70% higher for school

dropouts than for high school graduates. This finding is robust to the inclusion of an assortment of controls in statistical models.

For the analysis of school dropout, results suggest that a number of family, peer, and individual characteristics are significantly associated with school dropout. Family socioeconomic status and family supervision are negatively related to dropout. The deviance of one's peers is positively associated with dropout. While marijuana use, student mobility, and grade retention are all positively related to dropout, persistence is negatively related. As expected, IQ is one of the most robust predictors of school dropout. With that said, the count of arrests up to age 16 is a highly significant predictor of whether a student ultimately drops out of school or not. Results show that the average male student in the Chicago Public Schools with no prior criminal record has a 40% predicted probability of dropping out of school. For male students with one arrest, the probability is nearly doubled.

In sum, findings confirm the hypothesis that there is a significant reciprocal relation between arrest and school dropout. This relationship holds even following the consideration of differences in individual, family, peer, and contextual characteristics.

9.6.2 Future Research

Findings presented in this chapter are suggestive of a number of extensions. First, I have been careful to consider the potential biases associated with omitted variables, and observe that the inclusion of additional measures from available data sources does not alter the core results of the chapter. Yet, lack of data prevents a thorough examination of

the effects of school bonding (Hirschi 1969) and student disengagement on both dropout and arrest. In preliminary analyses, I did consider the effects of student misconduct (which is one of the items included in the Youth Self-Report/Young Adult Self-Report scale of Delinquent Behavior), but found that this aspect of student response to schooling has little effect on either outcome measure after controlling for other relevant predictors in statistical models (e.g. student mobility, grade retention, prior arrest). Similarly, there is little association between truancy, which is a sign of student disengagement and the absence of school bonds, and the outcome measures after controlling for other predictors. Thus, I am led to believe that I have indirectly captured the effects of school bonding on school dropout with the inclusion of variables like mobility and grade retention, and have captured the effects of school bonding on arrest with the inclusion of school dropout as a predictor of arrest. However, future research should examine whether inferences concerning the reciprocal relation between dropout and arrest are robust to the inclusion of precise measures of student disengagement and school bonding (i.e. attachment, commitment, involvement, and belief).

Second, while results in this chapter suggest that school dropout subsequently influences arrest and that arrest influences school dropout, left unanswered is whether the timing and ordering of these events has consequences on behavior and development. Life-course research suggests that timing and ordering do matter (Sampson and Laub 1993). For instance, one future research question to examine is whether arrest prior to dropout produces a different kind of development trajectory, in terms of employment or further contact with the criminal justice system, than if dropout occurs prior to arrest.

CHAPTER 10

CONCLUSION

10.1 OVERVIEW

Paraphrasing the late philosopher Imre Lakatos (1970, p.132ff.), Abbott (2004, p.255) observes, “the most important quality of research programs is their ‘heuristic power,’ their ability to keep producing new ideas and point the way to new findings.” Within these pages, I have initiated a research program that serves as a foundation for understanding the myriad ways that social contexts independently and jointly influence social life. My goal was not to produce the final statement on neighborhood effects and school effects, nor have I done so. After all, I have explored but one mechanism of neighborhood and school effects, namely social control. Rather, my central goal was to produce a framework for considering the effects of multiple contexts simultaneously. Understanding complex social phenomena like youth delinquency is a messy process. However, explanations of such phenomena which ignore the fact that individuals participate in numerous social contexts at the same time are insufficient.

The task of sociology is to examine the origin and forms of social interaction (Simmel 1895) --- for example between neighbors, parents, and teachers --- and the consequences of these interactions. Yet, this task must be performed in a coherent manner. It is not sufficient to study the problem of sociology through trial and error, by haphazardly examining whether some arbitrarily selected factor is predictive of a given social phenomena. In the case of the present study, the better method is to establish a framework for understanding how social contexts are interrelated in their effects on some

phenomena, and how scientists might go about testing these interrelations. After all, as Lakatos (1970, p.175, italics in original) argues, "*mature science – unlike pedestrian trial and error – has 'heuristic power'*."

There are three key features of the conceptual framework outlined in Chapter 2 which I hope prove to have heuristic power. First, neighborhoods and schools have independent effects on youth behavior. Second, neighborhoods and schools are also consequential to youth behavior to the extent that they interact with family characteristics and individual characteristics and experiences. For instance, each context influences with whom youth associate. These associations may lead to delinquency, and may lead to parental responses to these associations (e.g. setting curfews, transferring schools, moving). Third, neighborhoods and schools jointly influence youth behavior.

In the remainder of this chapter, I summarize results from empirical analyses, and discuss implications of my findings with respect to the conceptual framework outlined in Chapter 2. To end, I address limitations of the analyses, including the issues of causality and selection effects, and pose a number of future research questions.

10.2 SUMMARY OF RESULTS AND IMPLICATIONS

Chapter 6 explores the argument that arrest (after controlling for incidence of criminal activity) is more likely in some neighborhoods because these neighborhoods are stigmatized and because there is no other option to control neighborhood crime besides enforcement of the law. In other words, in the absence of family-control, neighborhood-control, and school-control, official agents of social control (e.g. the police) may be the

last remaining source of social control. This absence of informal social control may explain the differential enforcement of law in some neighborhoods and against certain youth, namely young black males. Results show that criminal and delinquent offending is an important precursor of arrest, yet a number of family and neighborhood factors also predict arrest. Furthermore, chronic truancy is an important predictor of arrest net of offending. Overall, however, results from Chapter 6 concerning social context (school, neighborhood, and also family) suggest that even if blacks were situated in contexts similar to other racial and ethnic groups, they would still exhibit greater incidence of arrest independent of offending. If anything, the results from this chapter are suggestive of the limits of neighborhood and school effects. In the post-industrial era, agents of the state (i.e. the police) are increasingly asked to perform functions of social control previously performed by the family, schools, and the local neighborhood community.

In Chapter 7 I examine whether school social organization is largely a product of neighborhood organization. If the social organization of schools largely imitates the social organization of the neighborhood in which they are located, then perhaps schools offer little independent influence on youth. Results suggest the following: 1) the demographic composition of the student body of the Chicago Public Schools tends to be more heavily minority in proportions relative to the surrounding neighborhood, 2) school-level social capital, in the form of teacher-parent relations, is not influenced by neighborhood social capital, 3) school-level collective efficacy is not influenced by neighborhood-level collective efficacy, 4) relations between students and teachers are not influenced by neighborhood-level collective efficacy, and 5) school-level social capital

and collective efficacy are, in fact, influenced by the quality of ties between schools and neighborhoods in the form of the local school council (LSC). Recall that the LSC represents a type of social relation between schools and neighborhoods, given that the council is composed of community members, parents, teachers, and the school's principal. In sum, results from Chapter 7 suggest that the social organization of schools is heavily influenced by non-neighborhood forces, such as state or federal policy. To the extent that neighborhoods influence public school organization, it appears to be due to the direct participation by community members and parents in the governance of schools.

What do these findings suggest about the framework presented in Chapter 2, and about social policy? While certain neighborhood structural factors do influence school organization (e.g. poverty and residential stability), these findings largely reveal that the social organization of schools do not merely imitate the social organization of neighborhoods. One implication is that to the extent that schools influence youth behavior, these school effects are independent of neighborhood factors. A second implication is that to produce better schools, it is not sufficient to simply attract "better" neighbors and expel undesirable ones. Results imply that active participation on the part of parents and neighborhood residents in the daily activities of schools and the governance of schools is beneficial for the social organization of these schools.

While Chapter 7 concerns the relations between neighborhood and school organization, Chapter 8 addresses whether neighborhood and school organization even matter with respect to the social control of youth delinquency. Overall results suggest that one of the best ways to control student delinquency and criminal behavior is to foster

student academic engagement. This finding highlights the point made before (cf. Section 10.1), that neighborhoods and schools are consequential to youth delinquency to the extent that they interact with individual characteristics and experiences like academic engagement. However, results reveal little direct contextual effects on student behavior, particularly neighborhood effects. Findings do show that the extent of parochial ties (i.e. joint influence) between schools and neighborhood organizations is negatively related to the proportion of students arrested in the school. So again, school-community partnerships are consequential, this time for the provision of social control. In sum, results from Chapter 8 highlight the importance of studying the indirect effects of neighborhoods and schools on behavior, as well as the joint effects.

While Chapters 6 through 8 focus on neighborhood and school effects, Chapter 9 shifts attention towards the relation between two of the dependent variables utilized in this study: school dropout and arrest. If neighborhoods and schools influence different aspects of youth behavior, whether directly, indirectly, or jointly, it is important to grasp how these contextually influenced youth outcomes developmentally influence subsequent behavior. For the analysis of arrest, results suggest that a number of family characteristics (e.g. parental marital status and family conflict) are significantly associated with arrest, and that prior arrest is highly predictive of future arrest. Most importantly, findings reveal that school dropout is a significant predictor of the prevalence of future arrest, with the odds of arrest over 70% higher for school dropouts than for high school graduates. For the analysis of school dropout, results suggest that a number of family, peer, and individual characteristics --- particularly IQ --- are significantly associated with school

dropout. With that said, prior arrest is a highly significant predictor of whether a student ultimately drops out of school or not. The average male student in the Chicago Public Schools with no prior criminal record already has a 40% predicted probability of dropping out of school, but for male students with one arrest, the probability is nearly doubled. In sum, findings confirm the hypothesis that there is a significant reciprocal relation between arrest and school dropout. The broader implication of chapter findings is that effects of social context at one stage of the life-course may have cumulative consequences if one contextually influenced outcome or behavior subsequently leads to other outcomes, as in the case of school dropout and arrest.

10.3 CAVEATS

One critical issue to consider in neighborhood effects and school effects research is whether observed contextual effects are really due to some emergent property of neighborhoods and/or schools. In this regard, the issue of selection bias will be addressed.

While families are often constrained in decisions of where they live and where children go to school, they do have at least a minor influence on those decisions. Selection bias occurs when an unobserved or unmeasured characteristic of an individual or family influences, on the one hand, where they live and where youth go to school, and on the other hand, youth behavior. It may be the case that unobserved or unmeasured factors account for any relation between contextual characteristics and youth outcomes.

The potential for selection bias presents not only an important problem, but also an opportunity, for contextual effects research. For instance, because of a concern for

selection bias and establishing causality, housing mobility programs like Gautreaux and Moving to Opportunity (MTO) have been designed such that families are randomly assigned to treatment (i.e. families given the option to move) and control groups (see Ludwig, Duncan, and Hirschfield 2001; Rosenbaum 1995). Random assignment in social policy is a rare, but valuable tool for determining the value of select programs, and numerous important findings have been garnered from the Gautreaux and MTO programs. That said, research on these programs and the effects of neighborhood and school mobility still suffer from a number of pitfalls. First, research has yet to consistently show the precise reasons *why* moves out of poverty through these programs have been beneficial for program participants. Second, results may still be biased by selection because of unobserved characteristics of individuals or families that lead them to drop out from the program or to never "take-up" entry into the program once randomly offered participation (i.e. not all families moved when given the option). Yet the undertaking of quasi-experimental designs is an important step towards truly understanding the influence of various social contexts on youth behavior.

In addition to experimental design, various other methods are often used to address the issue of selection in quantitative analysis. Briefly, one common approach is the use of instrumental variables. With the instrumental variables approach, a variable (or variables) that is unrelated to the outcome variable is used as an independent predictor of social context (neighborhood and/or school), and then the outcome variable is regressed on the predicted social context. Conceptually, this approach removes the spurious correlation between social context and unobserved family or individual characteristics.

Another approach is the use of sibling models. Sibling models offer a solution by omitting the selection bias due to omitted family or parent characteristics. In these models, sibling differences in the outcome of interest are regressed on sibling differences in contextual indicators. In this sense, presumably observed and unobserved family characteristics are equal for each sibling, so that the difference in outcomes across siblings is simply a function of differences in context. Another approach is the use of propensity score matching. With this approach, control and treatment cases are matched according to a propensity score (e.g. the propensity to drop out). Following the matching, control and treatment cases are compared on outcomes (e.g. arrest). If control and treatment groups are identical prior to treatment, the difference between the two groups after treatment must be attributable to the treatment. While this approach is similar to regression modeling in the sense that both control for factors that influence individuals, propensity score matching limits problems associated with collinearity, and model estimation is more efficient given that relatively fewer parameters are estimated.

In contrast to the approaches to selection just described, in this study I have addressed the issue of selection by gathering as much data as possible on individual, family, peer, neighborhood, and school characteristics. In other words, in order to minimize the biases associated with unobserved or unmeasured factors, I have attempted to observe and measure all relevant and potentially relevant covariates of youth behavior. With data from the six data sources described in Chapter 3, I have been able to more fully specify statistical models than I otherwise would be able. For instance, in Chapter 7, models of school social organization include both school-level factors and neighborhood-

level factors, with findings showing that select characteristics of schools and neighborhoods influence ties between teachers and parents and teacher and students. Without the measurement of both school and neighborhood factors, these models would have been underspecified. Yet the overspecification of statistical models, due to the abundance of data, has repercussions on model estimation and inference. As an example, family and parental processes are often influenced by neighborhood context (Burton and Jarrett 2000), so controlling for too many family variables in order to root out the possibility of selection bias may result in findings of little direct neighborhood effect. In other words, controlling for mediators of contextual effects, like family and peer influences, means that I am possibly underestimating the effects of neighborhoods and school on youth behavior.

In sum, I have attempted to address the issue of selection bias through an exhaustive data collection. However, there is still the very real potential of unobserved and unmeasured covariates, and the possibility that I have concealed the true magnitude of contextual effects because of model overspecification.

10.4 FINAL REMARKS

As a final statement, I wish again to address the theme of heuristic power. While this dissertation has answered a number of research questions, even more have surfaced in the course of the study. The heuristic power of the study lies, in part, in efforts to answer the research questions that follow from the arguments presented in these pages. This dissertation has addressed to some extent *how* and *why* neighborhood and school

contexts matter, but left unanswered is *when*. That is, are there certain ages or stages of the life-course when the influences of neighborhood and school contexts are most salient? It may be the case that neighborhood context matters more during late adolescence and early adulthood, while school context is influential during childhood. Relatedly, Chapter 9 begins to address the notion of cumulative consequences of participation in certain social contexts, but much more work can be done to understand how neighborhood and school effects have both short-term and long-term impacts on behavior.

As another course for future research, it is important to remember that neighborhoods and schools are just two of many social contexts that potentially bear on the lives of children, adolescents, and young adults. This dissertation has shown that a multicontextual approach to the study of behavior has value, so the next step is to consider the independent and joint effects of additional contexts. These may include the workforce, welfare system, criminal justice system, and organized religion.

APPENDIX A

SURVEY ITEMS USED TO CONSTRUCT NEIGHBORHOOD MEASURES

Note: (R) denotes that the item was reverse coded in the construction of the scale.
All measures derive from 1994-1995 PHDCN Community Survey.

CHILD-CENTERED SOCIAL CONTROL (3 Items)

"For each of the following, please tell me if it is very likely, likely, unlikely or very unlikely that people that people in your neighborhood would act in the following manner"

1) If a group of neighborhood children were skipping school and hanging out on a street corner
2) If some children were spray-painting graffiti on a local building
3) If a child was showing disrespect to an adult

NEIGHBORHOOD COLLECTIVE EFFICACY (10 Items)

"For each of these statements, tell me whether strongly agree, agree, disagree, or strongly disagree"

1) People around here are willing to help their neighbors
2) People in this neighborhood can be trusted
3) People in this neighborhood generally don't get along with each other (R)
4) This is a close-knit neighborhood
5) People in this neighborhood do not share the same values (R)

"For each of the following, please tell me if it is very likely, likely, unlikely or very unlikely that people that people in your neighborhood would act in the following manner"

6) If a group of neighborhood children were skipping school and hanging out on a street corner
7) If some children were spray-painting graffiti on a local building
8) If a child was showing disrespect to an adult
9) If there was a fight in front of your house and someone was being beaten or threatened
10) Suppose that because of budget cuts the fire station closest to your home was going to be closed down by the city

PHYSICAL DISORDER (3 Items)

"How much of a problem is…"

1) Litter, broken glass or trash on the sidewalks and streets
2) Graffiti on buildings and walls
3) Vacant or deserted houses or storefronts

SOCIAL CAPITAL (5 Items)

"For each of these statements, tell me whether strongly agree, agree, disagree, or strongly disagree"

1) There are adults in this neighborhood that children can look up to
2) You can count on adults in this neighborhood to watch out that children are safe and don't get in trouble
3) Parents in this neighborhood know their children's friends
4) Adults in this neighborhood know who the local children are
5) Parents in this neighborhood generally know each other

APPENDIX B

SURVEY ITEMS USED TO CONSTRUCT PHDCN INDIVIDUAL-LEVEL MEASURES

Note: (R) denotes that the item was reverse coded in the construction of the scale. Measures derive from Wave 1 PHDCN Longitudinal Cohort surveys of youth or their primary caregivers (PC).

ALCOHOL USE (1 Item, Youth Survey)

1) How many days during the last 30 days have you consumed alcohol?

CHRONIC TRUANCY (1 Item, Youth Survey for C18, PC Survey for C12/C15)

1) How often truant in past year (or in the last year of school if not presently in school?

CIGARETTE USE (1 Item, Youth Survey)

1) How many days during the last 30 days did you smoke cigarettes?

EASI TEMPERAMENT SURVEY (40 Items, Youth Survey)

"For each one, try to rate yourself on a scale from 1 to 5, with 1 uncharacteristic or not at all like you and 5 being characteristic of very much like you…"

Inhibitory Control

1) I have trouble resisting temptation
2) I find self-control easy to learn (R)
3) I can tolerate frustration better than most (R)
4) Usually I can not stand waiting
5) I have trouble controlling my impulses

Decision-Time

1) I often act on the spur of the moment
2) I often say the first thing that comes into my head
3) I always like to make detailed plans before I do something (R)
4) I often have trouble making up my mind (R)
5) I like to plan things way ahead of time (R)

Sensation Seeking

1) I feel happiest in familiar surroundings (R)
2) I sometimes do "crazy" things just to be different
3) I generally seek new and exciting experiences and sensations

4) I tend to get bored easily
5) I will try anything once

Persistence
1) Unfinished tasks really bother me
2) I tend to hop from one interest to another quickly (R)
3) I generally like to see things through to the end
4) I tend to give up easily (R)
5) Once I get going on something, I hate to stop

Impulsivity: is a combination of the four scales just outlined (Inhibitory Control, Decision Time, Sensation Seeking, Persistence)

Activity
1) I am off and running as soon as I wake up in the morning
2) I prefer quiet activities to more active ones (R)
3) I am always on the go
4) I am very energetic
5) When I move about, I usually move slowly (R)

Emotionality
1) I cry easily
2) I tend to be somewhat emotional
3) I often fuss and cry
4) I get upset easily
5) I react intensely when upset

Sociability
1) I am something of a loner (R)
2) I like to be with people
3) I find people more stimulating than anything else
4) I prefer being with others rather than being alone
5) When alone, I feel isolated

Shyness
1) I make friends easily (R)
2) I take a long time to warm up to strangers
3) I tend to be shy
4) I am very friendly with strangers (R)
5) I am very sociable (R)

EXPOSURE TO VIOLENCE (10 Items, Youth Survey)

1) Have any of your family members been hurt by a violent act
2) Have any of your close friends been hurt by a violent act
3) Have any of your close friends been killed by a violent act
4) Have you ever seen or been present when somebody was shoved, kicked or punched
5) If seen or been present when somebody was shoved, kicked or punched, did you know the person or people who this happened to
6) Have you ever seen or been present when someone was attached with a knife?
7) If seen or been present when somebody was attacked with a knife, did you know the person or people who this happened to
8) Have you ever heard a gun shot
9) Have you ever seen or been present when someone was shot
10) If seen or been present when somebody was shot, did you know the person or people who got shot

Note: given that older subjects, on average, experience more exposure to violence, the measure used in analyses is age-adjusted. This age-adjusted residual is computed by regressing ETV on the wave 1 age of each youth.

FAMILY CONFLICT (From the Family Environment Scale (FES), 9 Items, Youth Survey for C18, PC Survey for C12/C15)

Answered True/False

1) We fight a lot in our family
2) Family members sometimes get so angry they throw things
3) Family members often criticize each other
4) Family members sometimes hit each other
5) Family members often try to one-up or out-do each other
6) Family members rarely become openly angry (R)
7) Family members hardly ever lose their tempers (R)
8) If there's a disagreement in our family, we try hard to smooth things over and keep the peace (R)
9) In our family, we believe you don't ever get anywhere by raising your voice (R)

FAMILY CONTROL (From the Family Environment Scale (FES), 9 Items, Youth Survey for C18, PC Survey for C12/C15)

Answered True/False

1) There is one family member who makes most of the decisions
2) There are set ways of doing things at home
3) There is a strong emphasis on following rules in our family
4) Rules are pretty inflexible
5) You can't get away with much in our family
6) Family members are rarely ordered around (R)

7) There are few rules to follow in our family (R)
8) Everyone has an equal say in family decisions (R)
9) We can do whatever we want to in our family (R)

FAMILY RELIGIOSITY (From the Family Environment Scale (FES), 9 Items, Youth Survey for C18, PC Survey for C12/C15)

Answered True/False

1) Family members attend church, synagogue, or Sunday School fairly often
2) We often talk about the religious meaning of Christmas, Passover, or other holidays
3) Family members have strict ideas about what is right or wrong
4) We believe there are some things you just have to take on faith
5) The Bible is a very important book in our home
6) Family members believe that if you sin you will be punished
7) We don't say prayers in our family (R)
8) We don't believe in heaven or hell (R)
9) In our family each person has different ideas about what is right and wrong (R)

FAMILY SUPERVISION (24 Items, PC Survey for C12/C15)

1) Does subject have a certain time he/she has to be home on school nights
2) Does subject usually obey that rule
3) How about on weekends? Does subject have a certain time to be home
4) Does subject usually obey that rule
5) Do you have any specific rules about doing homework? Do you check to see if it is done
6) Do you ever help subject with his/her homework
7) Does subject sleep at home on school nights or can he/she stay with friends
8) When you aren't at home, does subject check in with you or anyone else
9) Where does subject go after school? Are there any adults there
10) Do you have any rules about what subject does with his/her friends? Do you talk to subject about what he/she is doing
11) How much time can subject spend in public places without an adult
12) Do you ever talk with subject's friends
13) Do you ever get to talk with subject every day about his/her day
14) Do you ever go to subject's school or talk with the teacher or counselor there
15) Do you generally keep the TV on or do you turn it on for specific programs
16) Do you talk with subject about different programs
17) Do you ever get to talk with subject about what he/she sees on the news, or in newspapers or magazines
18) During the last year have you spoken with subject about dangers of alcohol and drug use
19) Is subject allowed to drink beer, wine, or other alcohol at home
20) Do you feel familiar with the signs of drug use and keep an eye out for them

21) Has subject been to a doctor or clinic for a check-up during the past year
22) Are things like bedtimes, mealtimes, homework done about the same time each day
23) Other than the rules we've already talked about, are there any other rules you have for subject's behavior? Do you usually try to get him/her to follow them
24) Are there similar rules for the other members of the family?

Note: All responses are binary (Yes/No). This measure of family supervision is derived from the Home Observation for Measurement of the Environment (HOME). See Bradley et al. (2000) for further details on HOME measurement.

FAMILY SUPPORT (5 Items, Youth Survey)

1) No matter what happens, I know that my family will always be there for me should I need them
2) My family lets me know they think I'm a worthwhile person
3) People in my family have confidence in me
4) People in my family help me find solutions to my problems
5) I know my family will always stand by me

FATHER CRIMINAL RECORD (1 Items, Youth Survey for C18, PC Survey for C12/C15)

1) Has anyone in your family [father] ever had trouble with the police or been arrested

FATHER SUBSTANCE ABUSE PROBLEM (2 Items, Youth Survey for C18, PC Survey for C12/C15)

1) Has drinking ever caused any of the people in your family [father] to have problems with health, family, job, or police
2) Has drug use ever caused any of the people in your family [father] to have problems with health, family, job, or police

FRIEND SUPPORT (9 Items, Youth Survey)

1) When I'm with my friends I feel completely able to relax and be myself
2) I share the same approach to life that many of my friends do
3) People who know me trust me and respect me
4) When I want to go out to do things, I know that many of my friends would enjoy doing these things with me
5) I have at least one friend I could tell anything to
6) I feel very close to some of my friends
7) People who know me think I am good at what I do
8) My friends would take the time to talk about my problems, should I ever want o
9) Even when I am with my friends, I feel alone (R)

IQ (Youth Survey)

- Construction of measures follows method used by Sampson, Morenoff, and Raudenbush (2005)
- For the 18-year-old cohort, this measure refers to the subject's score on the Wechsler Adult Intelligence Scale (WAIS)
- For the 12 and 15-year-old cohorts, this measure refers to a combined scale of the subject's score on the Wechsler Intelligence Scale for Children (WISC) and the Wide Range Achievement Test (WRAT)

MARIJUANA USE (1 Item, Youth Survey)

1) How many days during the last 30 days did you use marijuana or hash

MOTHER DEPRESSION (2 Items, Youth Survey for C18, PC Survey for C12/C15)

1) Has anyone in your family [mother] ever suffered from depression, that is, they have felt so low for a period of at least two weeks that they hardly ate or slept, or couldn't work or do whatever they usually do
2) Has anyone in your family [mother] ever had problems with their nerves or had a nervous breakdown

MOTHER SUBSTANCE ABUSE PROBLEM (2 Items, Youth Survey for C18, PC Survey for C12/C15)

1) Has drinking ever caused any of the people in your family [mother] to have problems with health, family, job, or police
2) Has drug use ever caused any of the people in your family [mother] to have problems with health, family, job, or police

PARENT-CHILD CONFLICT (7 Items, PC Survey for C12/C15)

"When you had a problem with subject in the past year, how many times did you…"

1) Throw something at subject
2) Push, grab, or shove subject
3) Slap or spank subject with an open palm
4) Kick, bite, or hit subject with a fist
5) Hit or try to hit subject with something
6) Beat subject up
7) Burn or scald subject

Note: This measure of parent-child conflict is a subset of the nine-item Conflict Tactics Scales (Straus, 1979). The two omitted items from the 9-item scale pertain to the frequency of use of a gun or knife

PEER ATTACHMENT (3 Items, Youth Survey)

1) I have at least one friend that I could tell anything to
2) I feel very close to some of my friends
3) My friends would take the time to talk about my problems, should I ever want to

PEER ATTACHMENT TO SCHOOL (7 Items, Youth Survey)

"During the past year, how many of the people who you spend time with…"

1) Have been involved in school activities, not including sports
2) Have been involved in school athletics/sports
3) Have gotten along well with teachers and adults at school
4) Have been thought of as a good student
5) Have obeyed school rules
6) Have skipped school without an excuse (R)
7) Have gotten into trouble at school (R)

PEER DEVIANCE (17 Items, Youth Survey)

"During the past year, how many of the people who you spend time with…"

1) Have lied, disobeyed, or talk back to adults, such as parents, teachers, or others
2) Have purposely damaged or destroyed property that did not belong to them
3) Have stolen something worth $5 or less
4) Have stolen something worth more than $5 but less than $500
5) Have stolen something worth more than $500
6) Have gone into or tried to go into a building to steal something
7) Have taken a motor vehicle, such as a car or motorcycle, for a ride or drive without the owner's permission
8) Have gotten into physical (fist) fights with schoolmates/co-workers or friends
9) Have hit someone with the idea of hurting them
10) Have attacked someone with a weapon with the idea of seriously hurting them
11) Have used a weapon or force to get money or things from people
12) Have sold drugs, such as heroin, cocaine, crack, or LSD (other than marijuana)
13) Have used marijuana or pot
14) Have used an form of alcohol, including wine, liquor, or beer
15) Have used drugs, such as heroin, cocaine, crack, or LSD (other than marijuana)
16) Have used tobacco
17) Have had sexual intercourse

PEER PRESSURE (6 Items, Youth Survey)

"During the past year, how many of the people who you spend time with…"

1) Have asked you to go drinking with them
2) Have put pressure on you to drink

3) Have said that you have to get drunk to have a good time
4) Have offered (gave or sold) marijuana or pot to you
5) Have said that you have to get high on drugs to have a good time
6) Have put pressure on you to use drugs

RETAINED IN GRADE (1 Item, Youth Survey)

1) Ever repeat a grade

SELF-REPORTED OFFENDING (23 Items, Youth Survey)

"How many times have you done this in the past 12 months…"

Drug Offending

1) Sold marijuana or pot
2) Sold cocaine or crack
3) Sold heroin

Property Offending

1) Purposely damaged or destroyed property that did not belong to you
2) Entered or broke into a building to steal something
3) Stolen something from a store
4) Taken something that did not belong to you from any member of your household
5) Taken something that did not belong to you from a car
6) Knowingly bought or sold stolen goods

Public-Order/Status Offending

1) Run away from home and stayed away overnight
2) Been absent from school without an excuse
3) Caused trouble in a public place so that people complained about it, such as being loud or disorderly
4) Been paid by someone for having sexual relations with them
5) Been given a ticket for a driving offense
6) Driven a motor vehicle when you did not have a driver's license or after your driver's license had been suspended

Violent Offending

1) Carried a hidden weapon
2) Purposely set fire to a house, building, car, or vacant lot
3) Snatched someone's purse or wallet or picked someone's pocket
4) Hit someone with who you did not live with the idea of hurting them
5) Attacked someone with a weapon
6) Used a weapon or force to get money or things from people
7) Thrown objects, such as rocks or bottles, at people
8) Been involved in a gang fight in which someone was hurt or threatened with harm

Note: A measure of **Group Offending** is derived from follow-up questions to a number of the items above. Subjects were asked, "Were you alone or with others" when they committed said offense.

SPECIAL EDUCATION STUDENT (1 Item, Youth Survey for C18, PC Survey for C12/C15)

1) Ever enrolled in special remediation class

STUDENT MOBILITY (Youth Survey for C18, PC Survey for C12/C15)

- For the 18-year-old cohort, this measure refers to the number of high schools attended, from the PHDCN Wave 1 Self-Report survey of youth.
- For the 12- and 15-year-old cohorts, this measure refers to the number of elementary schools attended, from the PHDCN Wave 1 Self-Report survey of primary caregivers.

YOUTH / YOUNG ADULT SELF REPORT (81 Items, Youth Survey)

Note: items used for scales for the 18-year-old cohort are slightly different than those used for the 12- and 15-year old cohorts. Items marked with a single asterisk (*) denote items only used for 12- and 15- cohort scales. Items marked with a double asterisk (*) denote items only used for 18-year old cohort scales.

"For each item that describes you now or within the past 6 months, please say "2" if the item is very true or often true, "1" if the item is somewhat true or sometimes true of you, or "0" if the item is not true of you"

<u>Withdrawal</u>

1) I would rather be alone than with others
2) I refuse to talk
3) I am secretive or keep things to myself
4) I am shy
5) I don't have much energy
6) I keep from getting involved with others
7) I am unhappy, sad, or depressed*

<u>Somatic Problems</u>

1) I feel dizzy
2) I feel overtired
3) I have aches or pains
4) I have headaches
5) I have nausea, feel sick
6) I have problems with my eyes

7) I have rashes or other skin problems
8) I have stomach aches or cramps
9) I vomit

Anxiety/Depression

1) I deliberately try to hurt or kill myself*
2) I feel that others are out to get me*
3) I am suspicious*
4) I feel lonely
5) I cry a lot
6) I am afraid I might think or do something bad
7) I feel that I have to be perfect
8) I feel that no one loves me
9) I feel worthless or inferior
10) I am nervous or tense
11) I am too fearful or anxious
12) I feel too guilty
13) I am self-conscious or easily embarrassed
14) I think about killing myself
15) I am unhappy, sad, or depressed
16) I worry a lot
17) I have trouble concentrating or paying attention**
18) I am too dependent on others**
19) I feel confused or in a fog**
20) I daydream a lot**
21) I worry about my future**
22) I am jealous of others**
23) I worry about my relations with the opposite sex**
24) I have trouble making decisions**

Delinquent Behavior

1) I don't feel guilty after doing something I shouldn't*
2) I would rather be with older kids than with kids my own age*
3) I run away from home*
4) I set fires*
5) I steal at home*
6) I steal from places other than home*
7) I swear or use dirty language*
8) I cut classes or skip school*
9) I use alcohol *
10) I hang around with others who get in trouble
11) I lie or cheat
12) I destroy my own things**
13) I break rules at school or work**

14) I steal**
15) I drink too much alcohol**
16) I think about sex too much**
17) I do things that may cause me trouble with the law**
18) [If you have a paid job] I stay away from my job even if I'm not sick**
19) [If you are attending school or college] I skip classes even if I'm not sick**
20) How often did you drink alcohol in the last 6 months?**
21) In the last 6 months, how often did you use drugs for nonmedical purposes?**

Aggression

1) I argue a lot
2) I brag*
3) I am mean to others
4) I try to get a lot of attention*
5) I destroy my own things*
6) I destroy things belonging to others*
7) I disobey at school*
8) I am jealous of others*
9) I get in many fights
10) I physically attack people
11) I scream a lot
12) I show off or clown*
13) I am stubborn
14) My moods or feelings change suddenly
15) I talk too much*
16) I tease others a lot*
17) I have a hot temper
18) I threaten to hurt people
19) I am louder than others*
20) I don't get along with others**

Internalizing is a combination of the Withdrawal, Somatic Problems, and Anxiety/Depression scales

Externalizing is a combination of the Delinquent Behavior and Aggression scales

APPENDIX C

SURVEY ITEMS USED TO CONSTRUCT SCHOOL MEASURES

Note: (R) denotes that the item was reverse coded in the construction of the scale. Unless otherwise noted, all measures derive from the 1997 Consortium Surveys of the Chicago Public Schools.

COMMUNITY OUTREACH (8 Items, Principal Survey)
"Indicate whether your school is involved in the following parental involvement, community relations, partnership programs…"

1) Systematic program for parental involvement in the academic life of students that goes beyond the normal activities of the PTA, parent's night, and attendance at extracurricular activities
2) Formal mechanisms for coordinating with community agencies, for example, offering services dealing with child care, drug and alcohol abuse, and parental employment and training
3) Partnership programs with area businesses
4) External mentoring programs, such as "I Have a Dream," which follows students for several years
5) Adult education programs and recreational opportunities for the community
6) Formal arrangements with institutions of higher education to assist with staff development and curriculum design
7) Formal arrangements with institutions of higher education to assist students continue their schooling
8) Formal arrangements with local employers to place students in career-ladder jobs during the school-year, summers, and following

LOCAL SCHOOL COUNCIL CONTRIBUTION TO SCHOOL IMPROVEMENT (8 Items, 1994 Teacher Survey)
"Please mark the extent to which you disagree or agree with each of the following…"

1) Overall, the LSC has been a positive addition to this school
2) The LSC is really helping to make this school better

"Has your LSC made a contribution to improving…"

3) Student behavior
4) Curriculum and instruction
5) Safety near or in the school
6) Parental involvement
7) Community relations
8) The school building

PARENTAL SUPERVISION (4 Items, Teacher Survey)
"How often does a parent or other adult living with you…"
1) Wait for you at home after school
2) Make sure you get to school on time
3) Is somewhere that I can get in touch any time I need to
4) Know where I am after school

PARENT SUPPORT FOR LEARNING (12 Items, Teacher Survey)
"During this school year, how often have you discussed the following with your parents or other adults living with you…"
1) Selecting courses or programs at school
2) School activities or events of interest to you
3) Things you've studied in class
4) Going to college
5) Homework
6) Your grades

"How often does a parent or other adult living with you…"
7) Help you with your homework
8) Check to see if you have done your homework
9) Praise you for doing well in school
10) Encourage you to take responsibility for the things you have done
11) Encourage you to work hard at school

"If a parent or other adult living with you found out you were not doing your homework, how often would they…"
12) Talk to you about why you were not doing your homework

QUALITY OF PROFESSIONAL DEVELOPMENT FOR TEACHERS (11 Items, Teacher Survey)
"How much do you disagree or agree with the following? Overall, my professional development experiences this year have…"
1) Included opportunities to work productively with teachers from other schools
2) Changed the way teachers talk about students in this school
3) Included opportunities to think carefully about, try, and evaluate new ideas
4) Shifted approaches to teaching in this school
5) Helped my school's staff work better together
6) Deepened my understanding of subject matter
7) Helped me understand my students better
8) Been sustained and coherently focused, rather than short term and unrelated
9) Included opportunities to work with colleagues in my school
10) Led me to make changes in my teaching

"How much do you disagree or agree with the following…"
11) Most of what I learn in professional development addresses the needs of students in my classroom

SCHOOL COLLECTIVE EFFICACY (13 Items, Teacher Survey)
"How many teachers in this school…"
1) Feel responsible when students in this school fail
2) Feel responsible to help each other do their best
3) Help maintain discipline in the entire school, not just their classroom
4) Take responsibility for improving the school
5) Feel responsible for helping students develop self control
6) Set high standards for themselves
7) Feel responsible that all students learn
8) Really care about each other

"Please mark the extent to which you disagree or agree with each of the following…"
9) Teachers in this school trust each other
10) It's OK in this school to discuss feelings, worries, and frustrations with other teachers
11) Teachers respect other teachers who take the lead in school improvement efforts
12) Teachers at this school respect those colleagues who are expert at their craft
13) To what extent do you feel respected by other teachers

SCHOOL FOCUS ON STUDENT LEARNING (5 Items, Teacher Survey)
"Please mark the extent to which you disagree or agree with each of the following…"
1) This school really works at developing students' social skills
2) When making important decisions, the school always focuses on what's best for student learning
3) This school has well defined learning expectations for all students
4) This school sets high standards for academic performance
5) The school day is organized to maximize instructional time

SCHOOL-GOVERNMENT TIES (1 Item, Principal Survey)
1) About how often do you meet with the local alderman or other community leaders

STUDENT ACADEMIC ENGAGEMENT (12 Items, Student Survey)
"How much do you agree with the following statements about your English/math class?"
1) I often count the minutes until class ends (R)
2) Sometimes I get so interested in my work I don't want to stop
3) I usually look forward to class

4) I am usually bored with what we study in this class (R)
5) The topics we are studying are interesting and challenging
6) I work hard to do my best in this class

Note: each question was asked twice, once for English class and once for math class, for a total of twelve survey items.

STUDENT BEHAVIOR IN CLASS (19 Items, Student Survey)
"How much do you agree with the following statements about your English/Math class?"
1) Other student often disrupt class (R)*
2) Most students in this class like to put others down (R)*
3) Most students in this class just look out for themselves (R)*
4) Most students in this class treat each other with respect*
5) Most students in this class don't really care about each other (R)*
6) Most students in this class don't get along together very well (R)*
7) Most students in this class work together to solve problems*
8) Most students in this class help each other learn*
9) Students make fun of students who do well in this class (R)*
10) My teacher believes I can do well in school

Note: starred (*) questions were asked twice, once for English class and once for math class, for a total of nineteen survey items.

STUDENT DELINQUENCY (5 Items, Student Survey)
"How many times this school year have…?"
1) You been suspended from school
2) Your parents had to come to school because you got into trouble
3) You been sent to the office for getting into trouble
4) Your parents been contacted because you got into trouble
5) You gotten into trouble at school

STUDENT INTEREST IN SCHOOL (5 Items, Student Survey)
"How much do you agree with the following statements…"
1) I'm glad to get back to school after summer vacation
2) I'm bored in school (R)
3) I usually look forward to school
4) I wish I didn't have to go to school (R)
5) I wish I could go to a different school (R)

STUDENT-TEACHER TRUST (10 Items, Student Survey)
"How much do you agree with the following statements?"
1) My teachers always keep their promises
2) My teachers punish kids without even knowing what really happened (R)
3) My teachers can't be trusted; they say one thing one time and something different the next time (R)
4) My teachers get mad whenever I make a mistake (R)
5) My teachers always try to be fair
6) I feel safe and comfortable with my teachers in this school
7) My teachers will always listen to students' ideas
8) My teachers don't care what I think (R)
9) My teachers really care about me
10) When my teachers tell me not to do something, I know they have a good reason

TEACHER COMMITMENT TO SCHOOL (4 Items, Teacher Survey)
"Please mark the extent to which you disagree or agree with each of the following…"
1) I wouldn't want to work in any other school
2) I would recommend this school to parents seeking a place for their child
3) I usually look forward to each working day at this school
4) I feel loyal to this school

TEACHER CONCERN FOR STUDENTS (12 Items, Student Survey)
"How much do you agree with the following statements about your English/Math class…"
1) My teacher relates this subject to my personal interests*
2) My teacher really listens to what I have to say*
3) My teacher helps me catch up if I am behind*
4) My teacher is willing to give extra help on schoolwork if I need it*
5) My teacher notices is I have trouble learning something
6) My teacher doesn't know we very well (R)
7) My teacher notices if I have trouble learning something
8) My teacher believes I can do well in school

Note: starred (*) questions were asked twice, once for English class and once for math class, for a total of twelve survey items.

TEACHER INFLUENCE IN SCHOOL DECISION-MAKING (13 Items, Teacher Survey)
"How much influence do teachers have over school policy in each of the areas below…"
1) Hiring new professional personnel
2) Hiring a new principal

3) Determining the school's schedule (including teacher preparation periods)
4) Planning how discretionary school funds should be used
5) Determining specific professional and teaching assignments
6) Determining the content of inservice programs
7) Setting standards for student behavior
8) Establishing curriculum and instructional program
9) Determining how students' progress is measured
10) Determining books and other instructional materials used in classrooms

"Please mark the extent to which you disagree or agree with each of the following…"
11) Teachers are involved in making the important decisions in this school
12) Teachers have a lot of informal opportunities to influence what happens here
13) I feel comfortable voicing my concerns in this school

TEACHER-PARENT TRUST (13 Items, Teacher Survey)
"How many of your students' parents…"
1) Do their best to help their children learn
2) Support your teacher efforts

"How many teachers at this school…"
3) Feel good about parents' support for their work
4) Really care about this local community

"Please mark the extent to which you disagree or agree with each of the following statements about your school…"
5) Teachers and parents think of each other as partners in educating children
6) It is difficult to overcome the cultural barriers between teachers and parents (R)
7) Parents have confidence in the expertise of teachers
8) There is conflict between parents and teachers at this school (R)
9) Staff at this school work hard to build trusting relationships with parents
10) Talking with parents helps me understand my students better

"To what extent…"
11) Do teachers in this school respects parents and community members of the local community
12) Do teachers in this school respects students' parents
13) Do you feel respected by the parents of your students

TEACHER-PRINCIPAL TRUST (9 Items, Teacher Survey)
"Please mark the extent to which you disagree or agree with each of the following…"
1) It's OK in this school to discuss feelings, worries, and frustrations with the principal
2) The principal looks out for the personal welfare of the faculty members

3) I trust the principal at his or her word
4) The principal at this school is an effective manager who makes the school run smoothly
5) The principal places the needs of children ahead of his or her personal and political interests
6) The principal has confidence in the expertise of the teachers
7) The principal takes a personal interest in the professional development of teachers
8) I really respect my principal as an educator

"To what extent do you…"
9) Feel respected by your principal

TEACHER TIES TO THE COMMUNITY (5 Items, Teacher Survey)
1) Do you have friends who live in the community in which your school is located

"About how often do you…"
2) Visit the homes of students who attend your school
3) Attend religious services or events where students also attend
4) Attend civic, cultural, or recreational events in the community in which your school is located
5) Shop in the community in which your school is located

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