

Forthcoming, *Crime and Justice*, Volume 39

Neighborhood Change and Crime in the Modern Metropolis

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ABSTRACT

Few empirical studies of crime have treated neighborhoods as dynamic entities, by examining how processes of growth, change, and decline affect neighborhood rates of crime. From a small yet burgeoning collection of dynamic research related to population migration — including population loss, gentrification, the development and demolition of public housing, homeownership and home foreclosure, and immigration — we know that neighborhood change, even when it leads to socio-economic improvements, tends to have a destabilizing influence that leads to increases in crime in the short-term. This results, in part, because residential turnover undermines informal social control. There is also evidence across a variety of neighborhood changes, including population loss from central cities as well as gentrification, that population migration is both a cause and consequence of crime. However, too few studies pay adequate attention to how methodological choices affect inferences about the effect of neighborhoods on crime, and as a result there is much that is not known about the relationship between neighborhood change and crime, especially regarding causal mechanisms. Longitudinal data on neighborhood social and cultural processes and population migration are needed to advance our understanding of neighborhood change and crime.

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“The outstanding fact of modern society is the growth of great cities. ... Yet the processes of expansion, and especially the rate of expansion, may be studied not only in the physical growth and business development, but also in the consequent changes in social organization and in personality types” (Burgess 1967 [1925], pp. 47, 53).

“Recent work on communities and crime has turned to the observation that Shaw and McKay neglected: not only do communities change their structures over time but so often do their crime rates” (Reiss 1986, p. 19).

One of the more intriguing puzzles emanating from the past century of research and scholarship on cities, neighborhoods, and crime is the lack of serious attention to the idea of change. Given significant changes in urban dynamics and crime rates since Albert Reiss wrote the words above in a volume of *Crime and Justice* published more than two decades ago, we believe that it is time for a focused review of the state of research on neighborhood change and crime in the modern metropolis. Whereas neighborhoods may change in a multitude of ways—both physically and socially—our review examines social changes to neighborhoods related to socio-demographics and population migration—in-migration, out-migration, and internal redistribution.

Since the pioneering work of Shaw and McKay (1942), and Quetelet (1831), Guerry (1833), Rawson (1839), Mayhew (1862), and Burgess (1916) before them, a vast assortment of studies have sought to explain the spatial distribution of crime by examining the differences across neighborhoods in population characteristics, such as the poverty rate, and differences in associated neighborhood social processes, such as informal social control. However, relatively few researchers have treated neighborhoods dynamically, by examining how processes of growth, change, and decline affect neighborhood rates of crime.¹ Yet, a primary intent of the

¹ By “dynamic” we mean an analytic strategy that allows for an assessment of within- and between-neighborhood change over time. The variation over time in a characteristic of a neighborhood such as the crime rate can be

research program of Shaw and McKay (1942; also Shaw 1929) was to examine the repercussions of the *growth* of the city for the social organization of neighborhoods and for area rates of delinquency (see also Burgess 1967 [1925]). However, it is not possible to study growth, or decline, through *static* research designs. Rather, to advance a research program like Shaw and McKay's, it is necessary to allow for the study of neighborhood *change*.

Unfortunately, during the post World War II era, the discipline of criminology turned to individual-level explanations for crime and away from ecological explanations advanced by Shaw and McKay (1942) and others prior to the war. This disciplinary shift occurred, in part, because ecological theories of crime such as social disorganization theory poorly predicted individual-level behavior (Robinson 1950; see also Bursik 1988 for a discussion). As but one example of this disciplinary shift, research on criminal deterrence became prominent during the 1970s as numerous scholars came to view criminal behavior as the outcome of individual decision-making, although constrained by imperfect information (Nagin 1978; Cook 1980). Yet the appeal of ecological theories did not lay dormant for long.

The 1980s were marked by a resurgence of interest in ecological change and the ramifications for crime. This resurgence was embodied in a volume of *Crime and Justice* dedicated to the subject of communities and crime (Reiss and Tonry 1986). This volume presented the state-of-the-art in ecological studies of crime, and included essays related to community careers in crime, housing policies, fear of crime, informal social control, the neighborhood context of police behavior, and gentrification. Many of the studies in this 1986 volume examined the impacts of ecological changes prior to the mid-1970s. Therefore, it is now

decomposed into differences between neighborhoods and differences over time within each given neighborhood. In fact, the average within-neighborhood crime rate may decline over time, while at the same time there may be little between-neighborhood change.

time to take stock of the effects of neighborhood migration and socio-demographic changes occurring over the last four decades. Several pertinent questions guide such a review.

One of the most fundamental ways in which neighborhoods change is through shifts in the number and composition of its inhabitants. Importantly, these shifts also affect social networks and, in turn, may influence neighborhood processes such as informal social control. Wesley Skogan (1986, p. 207) has stated that “the engine of neighborhood change is selective out-migration from the neighborhood” (see also Frey 1980). What does research reveal about the relationship between population loss and crime? We know that populations change as a result of processes such as middle-class flight (both black and white) to the suburbs, but populations also change as a result of in-migration, especially through immigration. How do changes to the population composition of neighborhoods due to immigration affect crime rates?

Neighborhoods also experience changes in housing stock, which in turn affects the composition of the population. For example, many high-rise public housing developments in U.S. metropolitan areas have been razed in recent years. What are the implications for the distribution of crime and criminals? As a second example, neighborhoods change as a result of gentrification, defined by many as the restoration of urban property in poor or working class neighborhoods by the middle class. A key question is what is known about the relation between patterns of gentrification and rates of crime? Economic booms can increase homeownership, which is believed to facilitate neighborhood cohesiveness and residential stability (see Skogan and Maxfield 1981). Does crime decline in neighborhoods that experience an increase in homeownership? In contrast, neighborhoods can change as a result of economic downturns and associated ramifications such as home foreclosures. What does research reveal about the relationship between property foreclosures and crime?

Our principal findings and conclusions are as follows: (i) too few studies of neighborhoods and crime pay adequate attention to how methodological choices such as the operationalization of neighborhood size and boundaries influence inferences about the effect of neighborhoods on crime; (ii) many studies of the effect of neighborhoods do not conceptualize or define what they mean by “neighborhood effects” even as they purport to test for them; (iii) population change is both a cause and consequence of crime at the neighborhood level; (iv) gentrification leads to short term increases and long term declines for both property and violent crime; (v) the siting of public housing has minimal direct effects on crime and the demolition of public housing may displace crime and may well escalate violent crime in the short run; (vi) as homeownership increases, crime declines, and in turn, as home foreclosures increase, crime increases; (vii) concentrations of immigrants promote reductions in crime and violence; and (viii) few data repositories exist which can be used to examine the association between neighborhood change and crime. In particular, virtually no quantitative data exist which measure changes in neighborhood social and cultural processes over time (e.g., informal social control, fear of crime and disorder, perceptions of the law). Thus, there are many remaining questions to be answered about the relation between neighborhood change and crime, especially regarding the causal mechanisms underlying various types of neighborhood change.

To determine what the extant empirical research reveals about the relation between neighborhood change and crime, we employed the following selection criteria for studies reviewed herein: 1) research from the 1970s to the present, 2) use of a dynamic longitudinal research design, 3) a neighborhood unit of analysis, 4) a focus on some aspect of population migration and socio-demographic change, and 5) a focus on crime. Obviously there is an abundance of cross-sectional ecological research which is suggestive of relationships we might

find in a study of neighborhood change (for example, see Pratt and Cullen 2005), but with few exceptions we decided not to review the cross-sectional literature.

For our comprehensive review of research related to neighborhood change and crime, we use the following organization: Section I discusses the foremost conceptual, definitional, and measurement issues related to the association between neighborhood change and criminal outcomes. Key issues reviewed include: (a) defining neighborhoods and units of analysis, (b) defining and conceptualizing the different ways neighborhoods affect behavior—i.e., “neighborhoods effects,” (c) measuring neighborhood characteristics and change, and (d) selection bias (i.e., residents selecting into neighborhoods). Section II summarizes research related to the association between in-migration, out-migration, and population redistribution, and criminal outcomes. Section III outlines a research agenda for examining a number of themes related to neighborhood change and crime, including a call for greater attention to the causal mechanisms underlying neighborhood effects as well as a focus on the role of neighborhood change for explaining trends in crime.

We acknowledge at the outset that our review is not exhaustive of all the potential ways that neighborhoods change. In the interest of depth of coverage on population migration and socio-demographic change, we have omitted discussions of physical changes to neighborhoods (e.g., economic development and transportation infrastructure) as well as neighborhood change from criminal justice interventions. We do so because thorough reviews of these subject areas arguably require their own separate essays. In fact, several such reviews of criminal justice interventions have been conducted for previous volumes of *Crime and Justice* (e.g., Clarke 1995; Ekblom and Pease 1995). In order to give fuller treatment to the topic of neighborhood migration and crime, we have chosen to exclude discussion of these other important aspects of

neighborhood change. Additionally, because our focus is on proximal neighborhood conditions (e.g., gentrification) and their relation to crime, we have chosen to de-emphasize the distal forces (e.g., economic conditions and globalization) which bear on neighborhood population change. Certainly macro-level conditions such as economic recession and globalization affect neighborhoods, yet our intent is to review the import of proximate changes to the neighborhoods.

I. Conceptual, Definitional, and Measurement Issues

We present here a brief overview of essential technical and conceptual issues which are necessary to consider when examining the literature on the relation between neighborhood change and crime.

A. Defining Neighborhoods and Units of Analysis

What is a neighborhood? How is it conceptually and operationally defined? How researchers define neighborhoods, both conceptually and operationally, may influence inferences about the relation between neighborhood change and crime.

There has been a tendency in the social sciences to use the terms *community* and *neighborhood* interchangeably (Wellman and Leighton 1979). Yet there is an important distinction between these concepts. Community does not necessarily require locality or territory. Definitions of community tend to emphasize the importance of interpersonal ties, which are vital for sociability, solidarity, and social support (Wellman and Leighton 1979). Many definitions also tend to incorporate residence in a common locality as a basis for defining community. Yet, as Tilly (1973) argues, proximity is not a necessary condition of community, rather accessibility is necessary. Thus, in the absence of restraints on accessibility (i.e., because of transportation and

communication advances), community can thrive without place. We can speak of local communities, but the term community encompasses a broader domain than proximate, territorially based ties and sentiments.

On the other hand, neighborhoods may be conceived as spatial constructions which are defined ecologically, with reference to a geographic area. For instance, Bursik and Grasmick (1993, p. 6) define a neighborhood as, “a small physical area embedded within a larger area in which people inhabit dwellings.” Prevailing research suggests that most residents perceive their neighborhoods territorially (Guest and Lee 1984; Lee and Campbell 1997).² In *neighborhoods*, residents share proximity and the circumstances that come with it (Bursik and Grasmick 1993; Chaskin 1997). They may also share common values, sentiment, and social solidarity (i.e., local community), but this is not necessarily the case.

Operationalizing Neighborhood. A number of different methodological approaches have been used to operationalize neighborhoods. Of importance is that the operational definition of neighborhood utilized in any given study may influence inferences about the causes and consequences of crime (Bursik and Grasmick 1993; Sampson, Morenoff, and Gannon-Rowley 2002; Hipp 2007).³ Most researchers use administrative definitions of neighborhoods in their assessment of neighborhood effects. Such administrative boundaries include census tracts, face

² In an open-ended survey of Nashville residents asking them to define the word “neighborhood,” Lee and Campbell (1997) find that 87 percent of respondents define neighborhood as a spatial-territorial unit, with some respondents also employing definitions more aligned with our notion of community.

³ This issue is not isolated to studies of crime. Much attention in the discipline of geography has been directed toward the subjects of spatial scale and aggregation (Openshaw 1984). Scale refers to the size or resolution of an areal unit of analysis, and the so called scale problem refers to the fact that research results may change when the same areal data are combined into larger units of analysis (Openshaw and Taylor 1979, p. 128). The aggregation problem refers to “...variation in results due to the use of alternative units of analysis when the number of units is held constant” (Openshaw 1984, p. 8). Given that there are numerous ways to aggregate individual or incident data to a higher unit of analysis, statistical inferences from a given analysis may be dependent upon scale and aggregation.

blocks, police districts, and voting districts or political wards. While there are exceptions, the use of administrative units of analysis in neighborhood based research is often done out of convenience (i.e., data availability). Yet, as stated by Elliott and colleagues "... theory, not convenience should drive our definitions of what constitutes a neighborhood" (2006, p. 298). For instance, if a study of neighborhood change is designed to examine the repercussions of a police intervention implemented at the police beat level, then the unit of analysis should be the beat. If a study is designed to investigate the role of cohesiveness among neighbors, then use of a unit of analysis such as the face block will be useful for capturing the localized nature of social interaction among neighbors.

One recent approach to defining neighborhoods employed by the Project on Human Development in Chicago Neighborhoods (PHDCN) is to follow a spatial definition of neighborhoods that recognizes major geographic boundaries (e.g., expressways, parks, and railroad tracks), but also ensures that neighborhoods are internally homogenous with respect to various demographic characteristics of residents (e.g., socioeconomic status, race, ethnicity, housing density, and family structure). Based on these criteria and local knowledge, 343 geographically contiguous neighborhood clusters were defined in the City of Chicago with approximately 8,000 residents per cluster (Sampson, Raudenbush, and Earls 1997).

The choice between micro- (e.g., blocks or hot spots), meso- (e.g., census tracts), or macro-level (e.g., community areas) units of analysis is not merely a methodological issue, but also a theoretical issue. For instance, situational action theory asserts that criminal behavior is the outcome of the interaction between individuals and their immediate social environment (Wikström 2004, 2006). Wikström (2006, p. 61) argues, "people are moved to action (including acts of crime) by how they *see their action alternatives and make their choices when confronted*

with the particularities of a setting” (emphasis in original). To understand the etiology of behavior, Wikström (2006; also Oberwittler and Wikström 2008) asserts that we must understand the import of the behavior-settings to which individuals actually take part. These influential behavior-settings are not expansive, rather are geographically small.

In contrast to this micro-level perspective, social disorganization theory asserts that the relation among neighborhood institutions (e.g., families and schools) is consequential for behavior (Shaw and McKay 1942; Kornhauser 1978). For instance, if schools are isolated from the larger neighborhood community and do not respond to the needs of its residents, then neighborhoods lack a key mechanism of informal social control of youth. Recent research in the social disorganization tradition finds that social control processes among neighborhood institutions are interdependent, such that the level of informal social control produced by families and schools is dependent on the extent of control in the wider neighborhood (Kirk 2009b). The implication is that the informal social control of behavior does not simply reflect social processes occurring on a street block; rather it is a product of a more expansive web of relations among neighborhood residents, parents, and local institutions.

In general, there are nested levels of geographic areas, and each level may have some effect on criminal behavior (although through differing theoretical mechanisms). Hunter and Suttles (1972) provide a framework for understanding the multiple layers of mechanisms which influence social behavior. They describe four nested levels of residential groupings, each with an ecological basis (from most to least inclusive):

- 1) Local Networks and the Face-Block: refers to a network of acquaintances based on shared residence on the same block, where residents are recognizable to each other.⁴

⁴ Related to this nesting, Hunter and Suttles (1972, p. 55) argue, “Such a loose network does not constitute a neighborhood nor is it likely to have any residential identity.” This has implications for the study of hot spots of crime. Per Hunter and Suttles’ formulation, micro-places such as hot spots do not represent neighborhoods.

- 2) **Defended Neighborhood:** refers to the smallest area which possesses a distinct identity, recognizable to both the residents and outsiders.
- 3) **Community of Limited Liability:** refers to a geographic locality that is recognized and even defined by commercial and government entities which are external to the area (e.g., Hyde Park).
- 4) **Expanded Community of Limited Liability:** refers to an even larger geographic area defined as such out of necessity for groups to gain a larger voice with government or business influences (e.g., the South Side of Chicago).

Numerous studies have concluded that statistical inferences about the size and direction of associations between neighborhood characteristics and outcome variables are dependent on the choice of scale used in an analysis, and that the theoretical meaning of neighborhood constructs may vary across different scales (Hannan 1971; Brooks Gunn et al. 1993; Wooldredge 2002; Hipp 2007).

B. Conceptualizing 'Neighborhood Effects'

What exactly is a neighborhood effect? Does a neighborhood effect measure the potential individual-level outcome (e.g., criminal behavior) if an individual moves to a different neighborhood? This is the conceptual approach to neighborhood effects employed in the Moving to Opportunity (MTO) housing mobility studies as well as a recent study by Kirk (2009a), who examines the repercussions of induced residential mobility because of Hurricane Katrina on recidivism. Kirk finds that moving away from former neighborhoods substantially lowers a parolee's likelihood of re-incarceration, and posits that it is because mobility provides an opportunity for parolees to knife-off from their criminal past and to separate from criminal peers. With respect to the former research, MTO is a program sponsored by the U.S. Department of Housing and Urban Development, which was started in 1994 in five cities: Baltimore, Boston,

Chicago, Los Angeles, and New York (Katz, Kling, and Liebman 2001; Kling, Liebman, and Katz 2007). The question driving the MTO studies is whether an individual would behave any differently, in terms of crime and a host of other individual outcomes, if he or she lived in a non-poor neighborhood instead of a poor neighborhood. To answer this question, MTO researchers used experimental design and random assignment to create the counterfactual scenario of what would have happened if a given individual did not live in poverty (or in less poverty). MTO families were *randomly assigned* to one of three groups: 1) an experimental group, who received a housing voucher that had to be used in areas with under 10 percent poverty, and who also received counseling assistance from relocation advisors; 2) a Section 8 comparison group, who received a geographically unrestricted housing voucher but did not receive relocation assistance; and 3) a control group that received no change in housing assistance. MTO researchers then used a comparison of individual-level behaviors across these three groups to make claims about neighborhood effects. As Sampson (2006b) observes, however, such a research strategy may provide useful information about *whether* there is an effect of neighborhoods (or moving), but not *why*. The reason is because when a given individual moves from one neighborhood to another, “entire bundles of variables change at once, making it difficult to disentangle the change in neighborhood poverty from simultaneous changes in social processes” (Sampson 2006b, p. 48).

An alternative conceptualization of a neighborhood effect, which allows for a consideration of the mechanisms which explain *why* neighborhoods matter, is to explain neighborhood variation in rates of behavior. In this case, researchers want to examine the effect of a neighborhood change or intervention on crime rates. For example, we could examine how the neighborhood rate of crime changed following the implementation of a community policing

strategy in a given neighborhood. Therefore, we can assess neighborhood effects by either: (a) moving individuals to different neighborhoods, or (b) changing neighborhoods.⁵

In sum, there are different ways to conceptualize whether and why a neighborhood may affect an outcome such as crime. In the case of the MTO and Katrina studies (Kling, Liebman, and Katz 2007; Kirk 2009a), the neighborhood effect involved a comparison of criminal outcomes between otherwise equivalent individuals where the experimental group moved to a new neighborhood while the control group did not. An alternative conceptualization of a neighborhood effect is to assess the repercussions of an actual change to a given neighborhood (as opposed to mobility). In this review, we are specifically interested in the effect of neighborhood change, but not the effect of individuals changing neighborhoods. Therefore we do not provide a review of the MTO studies or other research which focus on the effects of mobility at the individual-level (for such reviews, see Goering and Feins 2003; Orr et al. 2003; Ludwig et al. 2008).

C. Measuring Neighborhood Characteristics

There has been an abundance of ecological studies of crime that examine the link between neighborhood structural characteristics (e.g., poverty) and criminal outcomes (see Elmer 1933; Byrne and Sampson 1986; Reiss 1986; and Wikström 1998 for extensive reviews). We focus our attention in this subsection on the measurement of social processes at the neighborhood level (e.g., social organization and local culture). A focus on social processes allows researchers to explore the exact *mechanisms* by which neighborhood structures influence outcomes such as crime and violence. For example, dating back to the work of Shaw and McKay (1942), a

⁵ See Sobel (2006) and Sampson (2008a) for further discussion of these alternative conceptualizations of “neighborhood effects.”

common finding in studies of crime and delinquency is that high poverty and residential instability are associated with high levels of crime. The key question is why. A number of research design considerations must be made in order to reliably and validly measure neighborhood mechanisms which explain why neighborhoods affect criminal outcomes.

First, neighborhood effects may be biased if characteristics of the neighborhood are simply aggregated up from the respondents that are the focal point of analyses. In other words, if measures of neighborhood social organization are obtained by aggregating responses from individual survey participants, and then used as predictors of the criminal behavior or victimization of those same survey respondents, then *same-source bias* may result (Duncan and Raudenbush 1999; 2001). In this case, measurement errors in the aggregated neighborhood measures are likely correlated with measurement errors in the outcome variable. For example, those respondents who have been victimized in their neighborhood may rate the neighborhood as more dangerous than respondents who have not been victimized. To avoid same-source bias, characteristics of neighborhoods should be gathered from an independent sample of respondents.

Second, in the interest of measurement, Raudenbush and Sampson (1999) have proposed *ecometrics* — the science of ecological assessment — with procedures for measuring emergent neighborhood processes as well as methods for assessing the reliability and validity of measurements of neighborhood social processes (see also Wikström 2007). Regarding this notion of emergence, Sampson (2006b, p. 36) argues, “neighborhood processes can and should be treated as ecological or collective phenomena rather than as stand-ins for individual-level traits.” Relatedly, Sampson and colleagues (Sampson and Raudenbush 1999; Sampson, Morenoff, and Gannon-Rowley 2002; also Reiss 1971) advocate the use of systematic social observation to assess the physical and observational characteristics of neighborhoods that are not reliably

measured in census data or local surveys. Along similar lines, Wikström (2007) has argued that much ecological research is flawed because residences (e.g., offender, victim) are used to capture “their environment” and this strategy does not take into account the different environments that individuals are exposed to. Wikström advocates using “space-time budgets” to study individuals’ interactions with varying environments. The fundamental point is that the testing of neighborhood effects requires proper measurement of neighborhood structures and mechanisms.

Third, there is a severe dearth of criminological research which has examined the dynamic nature of neighborhood social processes.⁶ There are few social science data repositories with neighborhood-level social process information across an adequate sample of neighborhoods, and most of these data repositories do not have multiple time points. One exception is the Project on Human Development in Chicago Neighborhoods (PHDCN), which conducted a repeated cross-sectional community survey of neighborhood residents in 1995 and another in 2002. While studies of changes in neighborhood social processes using the PHDCN data are still in development, early findings from the two waves of data collection suggest that neighborhood collective efficacy remained relatively stable from 1995 to 2002 (Sampson 2006a). To explore the association between neighborhood change and crime, it is vital to collect multiple time points of data on neighborhood social processes.

D. Selection Bias and Causality

⁶ In contrast to criminology, much has been written in the political science and sociological literatures about neighborhood change and social processes such as neighborhood activism and political mobilization (for recent discussions, see Pattillo 2007; Hyra 2008). As a penetrating example, Gould (1995) describes how urban transformations in mid-19th century Paris produced the foundations for neighborhood mobilization during the Paris Commune of 1871. With the advent of the Second Empire in 1852, Napoleon III enlisted Georges Haussmann to transform Paris into an imperial capital. The effect on the population was to disperse many residents, formerly residing in neighborhoods defined by occupation, to peripheral areas of the central city. Here, neighborhood communities formed and solidarity flourished, with these networks and ties ultimately proving to be the foundation of mobilization in 1870 and 1871.

One significant challenge in ecological research is to determine if observed differences in some outcome of interest across neighborhoods are in fact caused by contextual characteristics of neighborhoods. The question is whether neighborhood differences in crime result from emergent neighborhood-level factors, or are they simply due to the differential sorting of crime-prone individuals into certain neighborhoods? (see Farrington 1993). While individuals are often constrained in decisions of where they live (or where children go to school), they do have at least a minor influence on those decisions (Manski 1993). Selection bias occurs when an unobserved or unmeasured characteristic of an individual or family influences both where they live and the outcome under study, and may therefore account for any relation between neighborhood characteristics and outcomes. Because of these unmeasured characteristics, the effect of neighborhoods on the outcome can potentially be biased (upward or downward).

While it is out of scope of the present review to give full consideration of the issue of selection and various solutions, we do highlight a number of approaches social scientists use to address selection (see Manski 1993 and Sobel 2006 for relevant discussions). One common approach is to introduce individual and family characteristics as control variables in statistical models, which may account for differential sorting and the non-random process of neighborhood selection. A second approach to address selection is the use of instrumental variables. With an instrumental variables approach, a variable (or variables) that is unrelated to the outcome is used as an independent variable to predict neighborhood context, and then the outcome variable is regressed on the predicted neighborhood context. Conceptually, this approach removes the spurious correlation between neighborhood context and unobserved family or individual characteristics (see, e.g., Duncan, Connell, and Klebanov 1997; Kirk 2009a). A third method for accounting for selection is sibling models. Sibling models offer a solution by omitting the

selection bias due to omitted family or parent characteristics. 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 (e.g., neighborhood or school). If families move, then it is possible to determine how changing contexts influence one sibling at a given age relative to how a previous context influenced an older sibling (see, e.g., Duncan, Boisjoly, and Harris 2001). A fourth approach to selection is the use of propensity score matching (or stratification), coupled with sensitivity analysis. With this approach, control and treatment cases are matched according to a propensity score. In this case, the “treatment” refers to some kind of neighborhood condition (e.g., Harding 2003 used neighborhood poverty as a treatment in an analysis of school dropout and teen pregnancy). If control and treatment groups are equivalent prior to treatment, the difference between the two groups after treatment will be attributable to the treatment. Fifth, with longitudinal research, one can assess how neighborhood change is related to change in outcomes, or how change of residence leads to changes in outcomes. Finally, one of the more promising approaches to addressing the issues of causality and selection is experimentation.

E. Concluding Remarks

In conclusion, there are numerous conceptual and research design considerations to understand and address when conducting research on neighborhood change and when evaluating the literature on neighborhood change. These considerations include defining, operationalizing, and measuring neighborhoods, as well as the challenge of causally relating changes in neighborhoods to changes in crime. One reason for the relative lack of studies of neighborhood change and crime is that there are relatively few data repositories with combined measures of

neighborhood structures, processes, and crime rates across multiple time points. Despite the conceptual, definitional, and measurement challenges, the study of neighborhood change is beneficial for our understanding of the nature and distribution of criminal behavior.

II. Population Migration and Socio-Demographic Change

As we described in the introductory section of this essay, the 1980s were marked by a resurging interest in ecological explanations for crime. Two noteworthy studies during this period, by Bursik and Webb (1982) and Schuerman and Kobrin (1986), were at the forefront of the recent expansion of dynamic studies of neighborhoods and crime. These two studies explicitly address the relation between ecological change and the changing spatial distribution of delinquency in Chicago and Los Angeles respectively. In this section, we highlight prevailing research with respect to five different types of population changes: central city population loss, gentrification, the development and demolition of public housing, homeownership and foreclosure, and immigration. First, however, we briefly review the work of Bursik and Webb (1982) and Schuerman and Kobrin (1986) in order to provide a bridge between the early Chicago School work on the growth of the city (Burgess 1967 [1925]; Shaw and McKay 1942) and contemporary investigations of ecological change.

Bursik and Webb (1982) provide a critical test of Shaw and McKay's (1942) thesis about the stability of the relative distribution of delinquency. Shaw and McKay observed that the relative geographic concentration of delinquency persisted in the same geographic areas of Chicago from 1900 to 1940, and thus concluded that regardless of changes in the racial and ethnic composition of Chicago neighborhoods, the *relative* distribution of delinquency throughout the city would remain stable over time. Bursik and Webb confirm that temporal

changes in neighborhood composition (i.e., population size, percent foreign-born white, percent nonwhite, and household density) had little influence on changes in male delinquency rates during the 1940s. Yet, a number of ecological changes occurred in Chicago following World War II, including substantial demographic shifts in the population. Bursik and Webb find that these shifts in the population distribution were related to changes in the relative distribution of delinquency from 1950 to 1970, thus countering Shaw and McKay's arguments about the stability of the relative distribution of delinquency.

Schuerman and Kobrin (1986) examine how high crime neighborhoods in Los Angeles develop. To do so, they utilize a developmental model to investigate the 20 year histories of Los Angeles neighborhoods, and characterize three different stages in the development of neighborhood crime rates. First, "emerging" neighborhoods are those areas with lower levels of crime in 1950, but which became high crime by 1970. Second, "transitional" neighborhoods already had moderately high crime rates as of 1950, which became even higher by 1970. Third, "enduring" neighborhoods had high crime rates in 1950 that persisted at least until the last observation period of 1970. In describing the progression, or development, of crime changes, Schuerman and Kobrin find that initial crime changes are due to changes in land use (i.e., residential versus commercial or industrial) as well as demographic changes (i.e., population size, residential mobility, and divorce). Later changes in crime rates are due to social factors such as socioeconomic status and subcultural influences.

What we learn from Bursik and Webb (1982) as well as Schuerman and Kobrin (1986) is that neighborhoods are best treated as dynamic entities. In contrast to the early 20th century observations of Shaw and McKay (1942), Bursik and Webb and Schuerman and Kobrin show that the distribution of crime across space is not altogether stable, and does vary as a function of

ecological change. While these two studies examined the impacts of ecological changes prior to 1970, to follow we take stock of population migration and socio-demographic changes primarily occurring over the last four decades.

A. Central City Population Loss and Middle-Class Flight

Much has been written about the processes of suburbanization and middle-class flight among all races which fundamentally transformed U.S. metropolitan areas during the 20th century. While considerable media attention and popular discussion today has been directed toward trends in gentrification and suburb to city moves, it is still true today that city to suburban moves are most common. For instance, data from the 2008 Current Population Survey reveals that nearly 6.4 million households moved in the United States from 2007 to 2008 (U.S. Census Bureau 2009a). Of these households, 4.2 million moved within the same metropolitan area, 790,000 moved between metropolitan areas, and the remainder consisted of metro-to-nonmetro, nonmetro-to-metro, and nonmetro-to-nonmetro moves as well as movers from abroad. Of the 4.2 million moves within the same metropolitan area, 618,000 moved from the city to the suburbs while 259,000 moved from the suburbs to the city (the remainder consisted of within city or within suburb moves). Of the 790,000 households who moved between metropolitan areas, 238,000 moved from the city to the suburbs while 152,000 from the suburbs to the city. Thus, despite the allure of gentrifying cities, it is still far more common for households to move from the city to the suburbs than the converse.

Given these trends, we consider the relation between crime and central city population loss and out-migration flows. More specifically, we provide an overview of studies that implicate crime as a cause or consequence of central city population changes. We focus first on the study

of central city population loss during the middle of the 20th century in order to set the stage for more recent changes.

Frey (1979) addresses the causes of “white flight” to the suburbs during the middle part of the 20th century, and specifically examines two contrasting views: (a) that the exodus of white residents from central cities was racially motivated, or (b) that the declining economic and ecological conditions of central cities spurred white flight. Frey suggests that white flight during the 1940s and 1950s was relatively more racially motivated than in later decades, particularly in northern cities which saw an influx of southern black migrants during the 1940s (see also Taeuber and Taeuber 1965). In contrast, he hypothesizes that white flight from cities during the 1960s was due to deteriorating economic and environmental conditions within central cities (e.g., declining tax base and services from prior suburbanization, job migration to the suburbs, and crime).⁷ With respect to crime, Frey finds that central city crime rates affect both the decision to move somewhere *and* the choice of a particular destination (within the city or to the suburbs). However, the effect of crime is relatively greater on the choice of destination than on the decision to move. In other words, while high crime rates to some extent do “push” households out of their current places of residence, the salience of crime as a factor in residential migration decisions is most prevalent in choices of where specifically to live.

More recently, in an examination of the crime-population migration relation from 1970 to 1990, Cullen and Levitt (1999) find that for each additional reported index crime in a central city area, there is a net decline in population of approximately one resident. Moreover, findings

⁷ Taub, Taylor, and Dunham (1984) investigate a similar question in their case studies of neighborhood change in Chicago. They seek to identify the sources of the racial tipping of neighborhoods, and turn to crime as an explanation. Perceptions of the seriousness of the neighborhood crime problem influence residents’ intentions to move from a neighborhood. They suggest that the impact is variable by race, such that the black-white demand ratio for housing in a given neighborhood increases with increases in crime. In other words, neighborhood crime deflates white demand for housing in a given neighborhood, and the end result may appear to be the racial tipping of a neighborhood.

reveal that a 10 percent rise in crime corresponds to a 1 percent decline in central city population. They also find that more educated households and households with children are more sensitive to crime changes and are therefore more likely to move out of central cities should crime increase.

A number of studies have not only explored the impact of crime change on population flows, but also whether population out-migration due to crime is race-specific. In an analysis of crime changes and population migration from 1970 to 1980 in all 55 cities in the United States with a population size greater than 250,000, Sampson and Wooldredge (1986) find that crime had an adverse impact on net migration and population size. This was true for both white and nonwhite population groups. Thus, high crime rates encourage out-migration from central cities across a variety of racial groups.

Liska and Bellair (1995), using a sample of cities with over 50,000 population, find evidence of a reciprocal relation between the percent of nonwhite population of cities and robbery rates. Findings reveal that racial composition impacted robbery rates during the 1980s, and that robbery rates led to an increase in the percent of nonwhite city population in all decades investigated (1950-1990). Given that robbery leads to an increase in the percent of nonwhite residents in a city, Liska and Bellair examine whether this change is due to an increase in the absolute size of the nonwhite population, or a decline in the absolute size of the white population. They find support for a thesis of “white flight.” Robbery rates have no effect on the size of the nonwhite population, but do negatively affect the size of the white population.

A reciprocal finding of the relation between robbery and racial composition is not isolated to central city neighborhoods. In a longitudinal study of suburban dynamics, Liska, Logan, and Bellair (1998) find a significant reciprocal relation between robbery rates and the percent nonwhite population in a suburb, and that the relative size of the effect of robbery on

future increases in the percent of nonwhite population is greater than the effect of suburban racial composition on future rates of robbery. Moreover, they also find that of all predictors of racial change in their model, including a measure of the percent nonwhite population in the previous decade, robbery exerts the greatest influence.

While findings of the relation between crime and population change at the city- and suburban-level are relatively abundant, evidence of the impact of crime on population loss at the neighborhood-level is limited. Yet, it may be the case that increases in crime in urban neighborhoods leads to mobility to lower-crime urban neighborhoods *or* flight to the suburbs, and that out-migration to the suburbs occurs from select urban neighborhoods. Of the studies which have examined population loss at the neighborhood-level, Morenoff and Sampson (1997) find a significant negative relationship between neighborhood homicide rates at the beginning of a decade (i.e., initial homicide levels) and the change in neighborhood population over the ensuing decade (1970 to 1980 and 1980 to 1990)—i.e., high levels of homicide were followed by population loss. This relationship between homicide and population loss holds when disaggregated by both black and white populations. Interestingly, while *initial levels* of homicide predict similar population changes for blacks and whites, inter-decade *changes* in the neighborhood level of homicide had differing impacts on blacks and whites. Neighborhoods experiencing an increase in homicide over a decade had a decline in the absolute size of the white population yet an increase in the absolute size of the black population. Morenoff and Sampson suggest that forces of segregation (e.g., housing discrimination) constrain the mobility of the black population (see also Massey and Denton 1993). Thus, black residents flee core central city neighborhoods because of high levels of violence, yet they are less likely to move outside of the city than the white population. Rather, black residents move into peripheral

neighborhoods still within the city because of segregation. It is in these peripheral areas where homicide increased over the decade.⁸

One implication of the aforementioned findings is if increases in crime push residents, particularly white residents, out of central cities, do declines in crime in central cities pull them back? If so, then the substantial declines in crime and violence which characterized many central cities in the United States during the 1990s should be one explanation for the rise of in-migration and gentrification of central cities in the 1990s and 2000s.

B. Gentrification

Gentrification in many ways represents a reversal of trends associated with earlier periods of middle-class exodus from central cities. In fact, Hoover and Vernon's (1959) life-cycle model of neighborhood change predicts such a progression. In this model, neighborhoods undergo a process of change characterized by five stages: 1) development, 2) transition, 3) downgrading, 4) thinning out, and 5) renewal. During the first stage, single family homes are developed, which then leads to increasing density and higher socioeconomic status during the transition stage. Downgrading and thinning out (i.e., population loss) then occur for a variety reasons, such as the changing economic conditions or white flight mentioned in the previous subsection. Finally, renewal and gentrification occur, as middle-income residents are drawn to relatively cheaper housing prices.

⁸ In contrast, Katzman (1980) finds that crime does not so much influence out-migration from neighborhoods as it does the selection of particular neighborhoods for in-migration. While factors such as changes in jobs and transition to different stages of the life-cycle (e.g., parenthood) influence decisions to move, the choice of particular destination neighborhoods for *where* to move is a partly a function of their crime rates and other locational amenities such as quality schools (see also Rossi 1955). Moreover, Katzman finds that middle-income families are more sensitive to property crime than lower-income families are when deciding where to move, and families with children are more sensitive as well.

While middle-income residents may be drawn to gentrifying neighborhoods in central cities, it is worth reiterating that the modal migration pattern for U.S. residents is still to the suburbs, not a return to the city (Kennedy and Leonard 2001; U.S. Census Bureau 2009a). Some scholars even suggest that gentrification does not entail a return of middle-class residents from the suburbs to the central city; rather, gentrification marks a spatial redistribution of residents already residing in the central city (e.g., Covington and Taylor 1989). However, quantifiable evidence of the origin locations of gentrifiers is lacking.⁹

The origination of the term “gentrification” has often been credited to Ruth Glass (1964, pp. xviii-xix), who in her study of urban change in London observed the following:

working class quarters of London have been invaded by the middle classes...Shabby, modest mews and cottages—two rooms up and two down—have been taken over, when their leases have expired, and have become elegant, expensive residences. Larger Victorian houses, downgraded in an earlier or recent period—which were used as lodging houses or were otherwise in multiple occupation—have been upgraded once again...Once this process of ‘gentrification’ starts in a district, it goes on rapidly until all or most of the original working class occupiers are displaced, and the whole social character of the district is changed.

In this definition, we find three key dimensions of gentrification: first, a period of downgrading and disinvestment of central city neighborhoods; second, working class residents are displaced by middle-class residents; third, the housing stock is transformed and housing values rise. Recent theorists and researchers have employed definitions similar to the original usage coined by Glass.¹⁰ Smith (1996, p. 32) suggests,

⁹ Much of the discussion of residential mobility in the gentrification literature concerns the extent of displacement and out-migration of former residents. Much less attention has been given to the characteristics of in-movers (for an exception, see Freeman 2005).

¹⁰ However, not all scholars agree that gentrification is synonymous with the displacement of lower-income residents. Freeman and Braconi (2004) find little evidence of displacement following gentrification in New York City, and even show that impoverished residents and those without a college education are less likely to move out of gentrifying neighborhoods than non-gentrifying neighborhoods (see also Vigdor 2002). In response, Newman and Wyly (2006) note a number of methodological issues with the Freeman and Braconi study (2004), including the fact that Freeman and Braconi examined the prevalence of displacement well after gentrification had already begun, thereby suggesting that displacement had already occurred and their data (the New York City Housing and Vacancy

“Gentrification is the process...by which poor and working-class neighborhoods in the inner city are refurbished via an influx of private capital and middle-class homebuyers and renters — neighborhoods that had previously experienced disinvestment and a middle-class exodus.” Kennedy and Leonard (2001, p. 1) define gentrification as “the process of neighborhood change that results in the replacement of lower income residents with higher income ones.”¹¹ Kennedy and Leonard also emphasize that gentrification tends to occur in cities with tight housing markets, such that demand for housing by middle-income residents induces reinvestment into deteriorating neighborhoods. In all these definitions, the emphasis is upon class transformation of neighborhoods, not racial transformation. While many gentrifying areas have undergone changes in racial composition in addition to social class (Smith 1996; Kennedy and Leonard 2001), that is not always the case. For instance, Hyra (2008) observes that the revitalization and gentrification of two historic black communities during the 1990s and 2000s—Harlem in New York and Bronzeville in Chicago—was characterized by an influx of middle-class black residents, not middle-class whites or other races and ethnicities.

In a volume of *Crime and Justice* published more than two decades ago, McDonald (1986) suggests that there may be two contrasting consequences of gentrification for neighborhood crime. First, crime rates may increase with gentrification because of increased opportunity for property crimes and a disruption of social networks

Survey) was simply not capturing the multitude of displacements from past time points. Even so, Newman and Wyly do find substantially higher rates of displacement than Freeman and Braconi using the same data.

¹¹ Kennedy and Leonard (2001) draw a distinction between “gentrification” and “revitalization.” They define the latter as, “the process of enhancing the physical, commercial and social components of neighborhoods and the future prospects of its residents through private sector and /or public sector efforts. Physical components include upgrading of housing stock and streetscapes. Commercial components include the creation of viable businesses and services in the community. Social components include increasing employment and reductions in crime. Gentrification sometimes occurs in the midst of the revitalization process” (Kennedy and Leonard 2001, p. 6). The distinction lies in the fact that gentrification directly implies a displacement of lower-income residents, while revitalization does not necessarily result in such a displacement.

and social control processes. A second, alternative hypothesis offered by McDonald is that crime declines because relatively more crime prone individuals are displaced from gentrifying neighborhoods (i.e., a selective migration argument). Outside of these two suggestions by McDonald, a third plausible hypothesis is that gentrifying neighborhoods suffer a short-term rise in crime due to a rapid influx of population and subsequent social instability and population heterogeneity. Yet as neighborhoods stabilize in the long-term, crime should decline. What does the prevailing research reveal about these hypotheses?

McDonald (1986) provides a descriptive analysis of fourteen different gentrifying neighborhoods across Boston, New York City, San Francisco, Seattle, and Washington DC. In accordance with the second aforementioned hypothesis, McDonald finds a negative relation between gentrification and personal crimes (i.e., homicide, rape, robbery, and aggravated assault), though no effect of gentrification on property crime.

Taylor and Covington (1988) find support for the first hypothesis mentioned by McDonald (1986), that crime increases in gentrifying neighborhoods. Taylor and Covington (1988, p. 559) conceptualize gentrifying areas as those neighborhoods which experience “dramatic increases in relative house value” and “increasing managerial-professional work forces and increasing educational levels” among residents. They operationalize this conception by identifying those Baltimore neighborhoods which initially had low status (i.e., low education levels, low relative house values, high poverty rate, and vacant housing) and low levels of stability (i.e., low percentages of owner-occupied homes and married-couple households) in 1970, which transformed into high status and high stability neighborhoods over the course of the 1970s. They find that gentrifying neighborhoods had marked increases in murder and aggravated assault from 1970 to 1980. Taylor and Covington interpret this finding by drawing upon the

social disorganization tradition. Changing neighborhoods, whether downgrading *or* upgrading in status and stability, are characterized by population turnover and, at least initially, heterogeneity in resident characteristics. The repercussions of neighborhood downgrading and upgrading are perhaps best summarized by Bursik and Webb (1982, pp. 39-40), “[W]hen the existing community changes almost completely within a short period of time, the social institutions and social networks may disappear altogether, or existing institutions may persevere in the changed neighborhood but be very resistant to the inclusion of new residents.”

In a follow-up study, Covington and Taylor (1989) draw attention to the repercussions of rapid change in neighborhoods in contrast to steady change, and define gentrifying neighborhoods as those neighborhoods which demonstrated the most rapid rise in relative home values over the course of a decade (the 1970s). Covington and Taylor suggest that rapid neighborhood change is a destabilizing force, which undermines neighborhood social networks and informal social control to a much greater extent than in neighborhoods which change more slowly.¹² They find a positive association between gentrification and changes in crime, in this case robbery and larceny. Gentrifying neighborhoods, with rapidly appreciating home values, had relatively greater changes in robbery and larceny in comparison to slowly appreciating neighborhoods. Such a finding accords with Durkheim’s (1951) analysis of suicide. In describing the repercussions of sudden declines in societal regulation, Durkheim (1951, p. 252) argues, “when society is disturbed by some painful crisis or by beneficent but abrupt transitions, it is momentarily incapable of exercising this influence [regulation]; thence come the sudden rises in the curve of suicides we have pointed out.”

¹² Schuerman and Kobrin (1986) similarly argue that it is the “velocity” of neighborhood change that is consequential to subsequent increases in neighborhood crime rates rather than the mere presence of change.

A number of European studies have similarly found that residential turnover in gentrifying areas leads to increases in crime. For instance, in a qualitative investigation of gentrification and displacement in central London during the 1980s, Atkinson (2000, p. 321) finds evidence that gentrification leads to the breakdown of close-knit communities because of the turnover of neighborhood residents. This breakdown in community then results in rising crime.

In a study of neighborhood change and victimization in the Netherlands during the 1990s, Van Wilsem, Wittebrood, and De Graaf (2006) find that the likelihood of victimization (property or violence) is greater in neighborhoods characterized by socioeconomic improvements relative to neighborhoods with little change in socioeconomic status. Van Wilsem and colleagues also find that residential instability substantially mediates the association between neighborhood socioeconomic improvement and victimization. While they do not directly measure social control, they suggest that their findings reveal that the inflow of new residents into a neighborhood undermines cohesion among neighborhood residents and therefore hinders the process of informal social control.

Outside of the study by McDonald (1986), prevailing evidence suggests that gentrification leads to an increase in crime. Yet recall our third hypothesis, that gentrifying neighborhoods suffer a short-term rise in crime due to population turnover and subsequent social instability and population heterogeneity, but crime declines long-term as neighborhoods stabilize and informal social controls increase. A recent study by Kreager, Lyons, and Hays (2007) finds support for this hypothesis. In an investigation of the raw change in violent and property crime in Seattle from 1980 to 2000, Kreager et al. find a positive association between property crime and gentrification in the 1980s during the early stages of gentrification. In other words, in the short-

run gentrification leads to an increase in property crime (though they find no effect on violent crime). However, in the long-run, both property and violent crime decreased more in gentrifying neighborhoods relative to non-gentrifying neighborhoods.¹³

Kreager, Lyons, and Hays (2007, p. 25) interpret their findings as follows, “[O]ur study thus points to the importance of viewing gentrification as a temporal process with varying consequences for urban crime rates: early stages of incomplete gentrification may facilitate greater crime and disorganization whereas later stages, characterized by ‘corporatized’ urban renewal of the 90’s, may transform neighborhoods more completely into relatively organized areas capable of controlling criminal elements.” Such a nuanced view of the complexity of gentrification is instructive. Gentrification is not an event, but a process. The impacts of gentrification on crime depend upon the stage of the process. Early stages are often characterized by population turnover as well as income, racial, and ethnic heterogeneity. Later stages are more likely to be characterized by stability and social organization. Thus, just as Schuerman and Kobrin (1986) argued more than twenty years ago, it is best to think of neighborhood change as a temporal process of development (see also Berry 1985).

Thus far we have addressed the impact of gentrification on crime within the gentrifying neighborhood. A few key puzzles remain however. First, recall that one dimension of Glass’ (1964) definition of gentrification is *displacement*. Working class residents are displaced by middle-income residents (though see Freeman and Braconi 2004). Does this imply that crime is

¹³ To operationalize “gentrification,” Kreager and colleagues (2007) utilize a database developed by Wyly and Hammel (1999; see also Hammel and Wyly 1996) who classified census tracts in Seattle and other major U.S. cities as (a) gentrifying, (b) non-gentrifying poor, and (c) previously high-income or appreciating. This classification scheme is based upon an assortment of publicly available data and survey data. Based on median income indicators from the 1960 census, Wyly and Hammel (1999) identified areas of decay and disinvestment in central cities. To determine which of these decaying areas gentrified, Wyly and Hammel (1999, p. 727) conducted a “block-by-block field survey of tracts” in order to identify “visible evidence of housing reinvestment and class turnover.” To further refine their classification of gentrifying neighborhoods, Wyly and Hammel rely upon Home Mortgage Disclosure Act (HMDA) data to confirm the extent of housing investment in those neighborhoods they classified as gentrifying per the survey data.

displaced as well? Unfortunately, investigations of the displacement of crime from gentrification are sorely lacking, yet research by Curtis (1998; 2003) is instructive on this point. In these two studies, Curtis recounts ten years of ethnographic research in Brooklyn during the 1980s and 1990s, a period during which Puerto Rican, and then later Dominican, controlled drug markets quickly diminished. Curtis (2003) describes the evolution of the Williamsburg neighborhood of Brooklyn, from a mixed industrial-residential area with more than fifty operational breweries prior to the 1960s, to an area decimated by the decline in manufacturing which impacted so many central cities in the oldest sections of the United States during the last decades of the 20th century (see, e.g., Wilson 1987). Williamsburg is connected directly to lower Manhattan by the Williamsburg Bridge, and is easily accessible by public transportation. Such ecological advantages made it a prime location as a drug market in the 1960s, 1970s, and 1980s. Yet this accessibility contributed to gentrification in the 1980s. As Curtis (2003) observes, residents displaced from Manhattan in the mid-1980s because of rising rents flocked to nearby Williamsburg. Many boarded up buildings and abandoned industrial areas, some of which were used as “shooting galleries” and drug stashes, were transformed into lofts and condos for gentrifiers. With respect to the Williamsburg drug market, Curtis (1998) notes that the effect of gentrification as well as policing interventions was to displace the drug trade to Bushwick, an adjacent neighborhood located to the southeast of Williamsburg. In our view, the story of the relation between gentrification and crime is not complete without such an understanding of the potential for the displacement of crime.

With respect to a second remaining puzzle, neglected in the growing literature on gentrification is a consideration of the reverse causal story—that is, whether declines in property and violent crime during the 1990s spurred the revitalization of central city neighborhoods as

well as the movement of middle-class households into gentrifying neighborhoods? In other words, gentrification appears to lower crime, especially in the long-run, but did the drop in crime in the United States during the 1990s spur gentrification?¹⁴ We take up this issue in greater detail in Section III in a discussion of future research agendas, but we indirectly address such questions here by exploring the impact of crime on subsequent property values.¹⁵

In a metropolitan level analysis of the change in home values, Manning (1986) finds that the initial level of crime in a metropolitan area in 1970 as well as the change in crime from 1970 and 1980 had no bearing on the change in home prices over the same decade. In contrast, an assortment of longitudinal studies pitched at the neighborhood unit of analysis find an inverse relationship between crime and housing values. In an analysis of the residual change in housing values and vacancy rates across Baltimore neighborhoods from 1970 to 1980, Taylor (1995) finds that declines in aggravated assault and murder led to a rise in housing values. Similarly, using a hedonic model of home sales prices in Columbus, Ohio from 1995 to 1998, Tita, Petras, and Greenbaum (2006) find an inverse relationship between violent crime in a given year and home sales price the next year. However, they find no relation between increases in property crime and sales price. Hipp, Tita, and Greenbaum (2009) replicate this finding in an analysis of property values in Los Angeles for the years 1992 to 1997. They find that violent crime negatively affects subsequent property values, yet there is no relationship between property crime and property values. Schwartz, Susin, and Voicu (2003) examine whether the decline in

¹⁴ In a provocative case study of the gentrification of L.A.'s Skid Row, Harcourt (2005) questions whether eliminating disorder through order-maintenance policing and other strategies initiates urban renewal and gentrification, or whether high-end real estate development in decaying areas leads to reductions in crime and disorder. Interestingly, he observes that real estate developers and would-be gentrifiers actually seek to retain some of the crime, disorder, homelessness, and rampant drug use which characterize Skid Row. Harcourt (2005, p. 8) suggests, "[I]t is precisely that juxtaposition of high-end lofts and homeless beggars that gives L.A.'s Skid Row a trendy, urban, edgy, *noir* flavor that is so marketable." In other words, crime sells (within limits).

¹⁵ The relation between crime and housing values is a heavily researched topic across a variety of disciplines. We focus our discussion on dynamic studies that address the relation between *change* in crime and *change* in housing values.

crime in New York City in the early 1990s led to the real estate boom during the latter part of the decade. They find that property sales values increased an average of 17.5 percent from 1994 to 1998, and declines in crime account for one-third (i.e., 6 percent) of this increase. Similar to Tita and colleagues (2006), it is violent crime that impacted property values, though not property crime. Thus, dynamic research suggests that there is an inverse relation between crime and property values.¹⁶ Yet research generally reveals that the effect is limited to violent crime, not property crime. This suggests that residential and housing decisions are most responsive to changes in violence. While fear of violent victimization adversely impacts residents' attachment to their neighborhoods and decreases their willingness to collectively engage in informal social control (Skogan 1986; Skogan 1990; Taylor 1995), declines in violence may trigger a reduction in fear which then encourages residents to invest in neighborhoods formerly characterized by violence. Thus, one intervening mechanism between changes in violence and rising property values may be fear of violent victimization.

In sum, results suggest that gentrification initially leads to an increase in crime, as neighborhood change destabilizes processes of regulation and social control.¹⁷ Yet, in the long-run, gentrification leads to neighborhood reductions in crime, as social networks form and social control becomes more readily possible. Findings also suggest, particularly research by Schwartz,

¹⁶ While not focused on crime declines, Linden and Rockoff (2008) too find an inverse relation between crime and home sales price. They use longitudinal data on property sales in Mecklenburg County, North Carolina—which contains the city of Charlotte—to examine within-neighborhood variation in home values in the period just before to right after a sex offender moved to a given neighborhood. They find that the sale prices of homes fall considerably after a sex offender moves into a neighborhood, though only in close proximity to where the offender is living. Specifically, they find that home prices adjacent to sex offender residences declined 12 percent, but homes one-tenth of a mile away or more did not have an appreciable change in value.

¹⁷ Studies of “boomtowns” and areas of rapid population growth in rural and semi-rural areas have similarly shown immediate increases in crime following ecological change (see Freudenberg and Jones 1991 for a review). Thus, this Durkheimian dynamic of declining informal social control in the face of rapid social change is not isolated to urban neighborhoods.

Susin, and Voicu (2003), that declines in crime likely spurred gentrification through the appearance of safer central city neighborhoods.

C. Public Housing

The effects of public housing in the United States on neighborhood crime rates have received scant attention in the criminological literature, though more consideration has been given in the urban studies and housing policy literature. Yet few researchers in any discipline have systematically explored the impact of the initial development of public housing in the United States on crime, and even less have examined the repercussions of recent changes in public housing policies for crime.¹⁸ Yet, changes which lead to a redistribution of the population, such as the demolition of public housing, may alter the spatial distribution of motivated offenders *and* may undermine neighborhood informal social control because of residential instability.

The development of public housing in the United States began on a large scale with the U.S. Housing Act of 1937 (Holzman 1996).¹⁹ Much of the early use of public housing was to temporally shelter families following the Depression and World War II, not as permanent residences. In particular, many war veterans resided in public housing for short periods following World War II, before moving onto other accommodations (Holzman 1996). It was not until the 1950s when public housing came to be a more enduring form of subsidized residence for low-

¹⁸ Most research of public housing and crime in the United States has gravitated toward tests of the propositions of Oscar Newman's (1972) *Defensible Space* thesis. What we know about the association between public housing and crime in the United States is largely related to the architectural characteristics of housing structures, not the siting of those structures in particular neighborhoods. In the interest of scope, we focus our attention on the implications of public housing on neighborhood rates of crime (a *meso*-level perspective) as opposed to a focus on which design features of public housing influence why crime occurs in one place rather than another (a *micro*-level perspective).

¹⁹ The main focus of this section is upon public housing in the United States. For an examination of the link between public housing and crime in Great Britain, see Bottoms and Wiles (1986) and Foster and Hope (1993); for the investigation of public housing and crime in Australia and Canada respectively, see DeKeseredy et al. (2003) and Weatherburn, Lind, and Ku (1999).

income families. Much of the public housing stock in the United States was built during this mid-century time period (Fagan et al. 1998). Federal policies enacted during this time period, as well as local decision-making, led to the concentration of public housing developments in areas generally characterized by disadvantage, disorganization, and large proportions of minority residents (Hyra 2008).

One of the most significant changes in recent decades to impoverished urban neighborhoods has been the razing of many high density public housing developments. Along with these demolitions has come a shift in federal and local strategies from providing housing assistance through high-rise public housing to low-density scattered-site housing and vouchers (i.e., Section 8 vouchers) which can be used to subsidize housing found in the private rental market.²⁰ The impetus for these changes has been the well documented consequences of the concentration of poverty and the concentration of public housing into select central city neighborhoods (Wilson 1987; Galster and Zobel 1998). Thus, scattered-site housing as well as the use of housing vouchers is designed to de-concentrate impoverished public housing residents, to integrate public housing residents into middle-class neighborhoods, and to provide residents with increased employment and educational opportunities (Galster and Zobel 1998).

Trends in the allocation of housing vouchers provide clear evidence of the marked shift in housing assistance strategies. In 1996, 1.34 million housing vouchers were issued to households in the United States and approximately 1.32 million public housing units were available, 90 percent of which were occupied (U.S. Department of Housing and Urban Development 1996). In

²⁰ Scattered-site public housing are small-scale rental developments typically built or purchased with the help of federal funds and managed by local public housing authorities (Galster and Zobel 1998). Developments generally range in size from single family homes to apartment complexes. Section 8 vouchers are a form of rent subsidy for low-income households provided by the U.S. Department of Housing and Urban Development through local public housing authorities. Subsidies are distributed to landlords directly, with tenants covering the remaining rent. Per the Section 8 program, tenants must contribute at least 30 percent of their monthly adjusted family income to the rent.

contrast, by the year 2000, 1.82 million households were issued vouchers while 1.28 million public housing units were available in the United States, 93 percent of which were occupied (U.S. Department of Housing and Urban Development 2000). By 2005, 1.9 million households were receiving housing assistance through vouchers while 1.1 million households were residing in public housing units (Haley 2005). Thus the ratio of households living in public housing units versus private housing subsidized through vouchers has declined dramatically over time.

As noted, one key shift in assisted housing dynamics has been the demolition of a substantial number of distressed public housing units over the past two decades in the United States. In 1989, the U.S. Congress established the National Commission on Severely Distressed Public Housing, which was tasked with identifying severely distressed public housing and with crafting an action plan for remedying the problem (Popkin et al. 2004). This commission ultimately identified 86,000 public housing units (out of the 1.3 million nationwide) as severely distressed, and Congress enacted the Housing Opportunities for People Everywhere (HOPE VI) program in 1992 to fund the replacement and renovation of distressed units. To date, \$6 billion has been spent through HOPE VI, with over 78,100 public housing units demolished and another 10,400 units to be redeveloped (Turner et al. 2007).

Another related legislative mandate leading to the recent decline in public housing units is the Omnibus Consolidated Rescissions and Appropriations Act of 1996 (Section 202). This legislation requires public housing authorities to assess the condition of their public housing developments, and the viability of rehabilitating distressed units (Jacob 2004, p. 233). If the cost to rehabilitate and maintain a given distressed housing unit is greater than the estimated cost to provide the residents a housing voucher for use in the private housing market for a period of 20 years, then the housing authority must vacate the unit and remove the unit from its stock of

housing. Jacob (2004) reports that roughly 91,000 units across 35 different public housing authorities are scheduled to be demolished because the cost of rehabilitation exceeds that of housing vouchers.

With the changing neighborhood context of public housing in mind, in this subsection of the essay, we ask two related questions: 1) how does the siting of a public housing development in a given neighborhood influence crime rates in that neighborhood as well as proximate neighborhoods? and 2) how has the demolition of public housing units over the past two decades affected neighborhood crime rates?²¹ Public housing, and the demolition thereof, may impact neighborhood crime by a number of mechanisms. First, the development of public housing in a given neighborhood may instigate a process of selective migration. That is, different types of families may migrate to a given neighborhood (e.g., more impoverished) relative to current residents. Second, both the development and demolition of public housing may undermine informal social control because of residential turnover and instability.

Question 1, The Impact of Public Housing Development on Crime. There is a long history of resident resentment and opposition to the siting of public housing in their neighborhood (see, e.g., Meyerson and Banfield 1964; Cuomo 1974; Hirsch 1983). Much of this history of opposition is based on the contention that the placement of public housing in a given neighborhood adversely affects property values and increases crime (Freeman and Botein 2002).

²¹ A third line of inquiry would be to assess the impact of the residential mobility of former residents of razed housing on their criminal behavior. As noted in *Section I*, “neighborhood effects” can be categorized as either: (a) the effect of moving individuals to different neighborhoods, or (b) changing neighborhoods. Generally, our interest in this review is the latter. Given our focus on neighborhood change as opposed to residential mobility, we exclude discussion of this third line of inquiry. For readers interested in such investigations of mobility effects from public housing shifts, see Galster and Zobel (1998) and Goetz (2003) for reviews of research. Additionally, see Jacob (2004) for a novel approach (i.e., natural experiment) for examining the impact of forced migration from public housing demolitions on youth outcomes.

It is assumed that public housing influences neighborhood crime because of the migration of relatively more crime-prone residents into the neighborhood, and through increased concentration of poverty, social disorganization, and criminal opportunities (McNulty and Holloway 2000; Freeman and Botein 2002; Santiago, Galster, and Pettit 2003). Despite numerous presumed pathways by which public housing is said to lead to increased crime, little research has actually tested these notions, particularly through dynamic research designs.

Of the static studies of U.S. public housing, Roncek and colleagues (1981) examine the relation between subsidized housing and neighborhood crime in Cleveland, and find a significant, though substantively small, positive association between proximity to subsidized housing and violent crime. Ultimately they conclude that adjacency to public housing sites is one of the least important predictors of violent crime relative to socio-economic factors. McNulty and Holloway (2000) find that proximity to public housing developments has a positive effect on neighborhood crime rates, though a substantial amount of the association is mediated by neighborhood disadvantage. Fagan and Davies (2000) find evidence of a diffusion process in that violence within public housing is significantly associated with violence in the surrounding census tract. They explain the diffusion process by suggesting that motivated offenders from within public housing commit violent crimes in the surrounding area because of opportunities or a lack of informal social controls. In contrast, Griffiths and Tita (2009) find no evidence that public housing is a generator of violence in the surrounding geographic area. Rather than spilling over into adjacent areas, homicide involving public housing residents is local. When public housing residents engage in lethal violence, it tends to occur within the public housing development and the immediate neighborhood.

Yet the limitation of these four studies and others of public housing is the failure to establish causal directionality for the relation between public housing and crime (Santiago, Galster, and Pettit 2003). We still do not know if the development of public housing in a given neighborhood causally leads to an increase in crime (whether in the immediate neighborhood or adjacent neighborhoods), or whether public housing units are simply developed in areas with already high crime rates. To sort out the directionality, dynamic research on neighborhood change is essential. Here, we draw upon two illustrative dynamic studies to address causal directionality. First, Bursik (1989) examines whether the change in male delinquency in particular community areas of Chicago from 1970 to 1980 was influenced by the development of new public housing constructions. He finds that the presence of new public housing has no direct effect on the residual change in delinquency, yet public housing development does indirectly impact delinquency through residential instability. Bursik also finds that public housing in Chicago has typically been sited in those neighborhoods which offered the least resistance to the placement of public housing in the neighborhood. In other words, public housing was developed in certain geographic areas because such areas were least able to engage in collective opposition. As we discuss in greater detail at the conclusion of this subsection, this point about community opposition becomes relevant when addressing the potential for selection bias.

As a second example of a dynamic research design, Santiago, Galster, and Pettit (2003) examine whether proximity to 38 new scattered-site public housing developments in Denver is associated with an increase in neighborhood crime. To do so, these authors compare the actual post-development neighborhood crime rate in a given area with a hypothetical rate based on the pre-development crime trend in the neighborhood as well as an adjustment for metro-wide crime trends. In other words, they setup a counterfactual scenario which represents the hypothetical

rate of neighborhood crime if a scattered-site public housing development had never been built in the neighborhood. Santiago et al. find that proximity to scattered-site public housing is not associated with any post-development increase in crime (whether the total crime rate or violent, property, disorderly conduct, or criminal mischief rates). In fact, in their analysis of the total crime rate, Santiago et al. actually find that neighborhood crime decreased after development of scattered-site housing.

In sum, results, whether from static or dynamic research designs, suggest that the effect of the siting of public housing in given area on neighborhood crime rates is minimal at most (after accounting for pre-existing neighborhood conditions). Longitudinal designs, which are better suited for establishing causal directionality, reveal that there is little to no direct effect of public housing on neighborhood crime. What effect there is of public housing is likely indirect, through residential instability and neighborhood disadvantage. As Bursik (1989) illustrates, the co-occurrence of public housing sites and high crime in a given geographic area may simply be explained by the fact that neighborhood residents are not organized to effectively resist the siting of public housing or to control crime.

Question 2, The Impact of the Recent Shift in Housing Assistance in the United States.

As noted, U.S. housing authorities in recent decades have shifted strategies away from high-density housing and toward scattered-site housing as well as the increased use of housing vouchers. Thus, it is pertinent to assess the repercussions for neighborhood crime from the demolition of high-density housing as well as the development of scattered-site housing.

One means to uncover the implications of trends away from high-rise public housing is to compare crime rates in neighborhoods characterized by high-rise developments versus otherwise

similar neighborhoods characterized by scattered-site or other lower density housing configurations. However, as Holzman (1996) observes, most criminological research on public housing in the United States has been limited to a focus on high-rise, high-density public housing developments typically located in older cities in the Midwest and Northeast. Of the very few comparative undertakings, a study by Holzman, Kudrick, and Voytek (1996) is suggestive of possible changes to neighborhood crime from shifts from high-rise to scattered-site housing developments. These scholars compare crime and disorder outcomes across a range of public housing types (high-rise, low-rise, town homes, and scattered-site) and number of units. They find, similar to Newman (1972), that building size is positively related to crime. As for building type, burglary is more likely in scattered-site housing than others and least likely in high-rises. Holzman et al. suggest that scattered-site units are more accessible than units in other building types, and therefore provide more opportunities for burglary. Fear of crime is less likely in scattered-site housing relative to other types, as are gunshots and drug dealing. Thus, outside of burglary, this research suggests that trends toward scattered-site housing may lead to a decrease in crime.

While informative, the Holzman, Kudrick, and Voytek (1996) study does not directly address the impacts of public housing demolitions. Up to this point, one may conclude that the siting of high-rise public housing developments may contribute to a slight increase in neighborhood crime, because of an impact on social disorganization and related factors (Roncek, Bell, and Francik 1981; Bursik 1989; McNulty and Holloway 2000). Thus, we may see an increase in social organization and a relative decline in neighborhood crime in neighborhoods where high-density housing has been recently demolished. Findings presented by Suresh and Vito (2007) provide some partial support for such an assertion. These authors find that hot spots

of aggravated assault shifted abruptly in Louisville in the mid-1990s, from the Park DuValle neighborhood to nearby areas. They implicate public housing demolition as an explanation. The Cotter Homes and Lang Homes public housing developments in Park DuValle were both demolished during 1996 and 1997, and former residents were dispersed to a number of developments in different neighborhoods throughout the city. While speculative, Suresh and Vito suggest that the substantial decline in assaults in the Park DuValle neighborhood, as well as the rise in assaults in nearby neighborhoods, could be attributed to the demolition of the two housing projects and the dispersal of residents to other sections of the city.²²

Declines in crime following public housing demolition may not be immediate, and may result in the displacement of crime instead of a net reduction. In a comparison of homicide trends in Chicago, New York, and Los Angeles, Hagedorn and Rauch (2007) implicate variation in housing policy as an explanation for why homicide rates declined much less dramatically in Chicago than in the other two cities, particularly New York. These authors note that housing policies in South Bronx resulted in much less displacement of residents than which occurred on the south side of Chicago. Based on a set of qualitative interviews with gang members in Chicago who were either displaced from public housing, or who resided in receiving neighborhoods of displaced public housing residents, Hagedorn and Rauch assert that the demolition of public housing forced gang members to relocate to new geographic areas, many of which were already controlled by rival gangs. The result was an escalation of gang conflict over the control of turf and drug markets. Popkin and colleagues (1999) observe the same repercussions of displacement in Chicago following the demolition of buildings in the Henry

²² Suresh and Vito (2007) examine the decline in the *number* of aggravated assaults in Park DuValle, but it is unclear whether the *rate* also declined. There is no discussion of how many residents resided in the two public housing complexes, nor discussion of how much the population count changed in the neighborhood. Thus, the aggravated assault *rate* may have remained the same following demolition even as the *number* declined.

Horner Homes and the Robert Taylor Homes. They conclude that in the short-run, public housing closings and demolitions may escalate violence in adjacent buildings or nearby public housing developments because of the disruption of existing gang territories.

At this point, there is limited research which has explicitly investigated the impacts of public housing demolitions for neighborhood crime. A pre-/post- research design, particularly an interrupted time-series, of neighborhoods where public housing has been demolished is certainly warranted. Likewise, further investigation of receiving neighborhoods of displaced populations is necessary. Initial evidence from the United States suggests that resident displacement because of demolitions may displace crime, and may lead to an escalation of violence in the short-run as gang territories morph into contested spaces.

It is pertinent to note that the issue of selection plagues much of the aforementioned research of public housing. The question is whether neighborhood crime is higher in neighborhoods where public housing is located *because* of the presence of these housing facilities, or is public housing simply built in those areas with already high crime rates? While previous authors have recognized this issue (e.g., Roncek, Bell, and Francik 1981), few have directly addressed it. As noted, Bursik (1989) observes that public housing in Chicago has typically been located in neighborhoods lacking in social organization, and consequently offered the least opposition to the siting of public housing. Factors such as cheaper rents and real estate prices as well as minimal public resistance weigh heavily on the placement of housing sites (Freeman and Botein 2002). Thus, in order to make valid inferences about the impacts of public housing, accounting for such selection processes is necessary.

D. Homeownership and Home Foreclosure

Homeownership is a ubiquitous goal in the United States, and is symbolic of the path to upward mobility for many Americans. Some have even likened homeownership to citizenship, and characterized it as a political right (Perin, 1977; Shlay, 2006). Homeownership rates in the United States presently stand at approximately 68 percent of households (Joint Center for Housing Studies 2009). Over the past century, there have been two substantial increases in the rate of homeownership, from 1940 to 1960 and from the mid-1990s to 2004 (Shiller 2007; Joint Center for Housing Studies 2008). In the former time period, rates increased from 44 percent to 62 percent, largely due to government efforts to spur homeownership following the Great Depression (U.S. Census Bureau 2004; Shiller 2007; Shiller 2008).²³ In the latter period, from 1994 to 2004, homeownership increased from 64 percent to 69 percent, due in part to low interest rates, flat home prices following the economic recession of 1990-1991, and adoption of automated underwriting tools (Joint Center for Housing Studies 2008). Importantly, this increase in homeownership was not substantially fueled by the rise of subprime mortgage loans, as homeownership rates had already peaked by the time subprime financial products had become widespread (Joint Center for Housing Studies 2008).

Homeownership has numerous social benefits. Regarding individual impacts, evidence suggests that homeowners have greater life satisfaction and self-esteem, and that there are health benefits to homeownership, at least for individuals not in default on their loans (see Rohe, Van Zandt, and McCarthy 2000 for a discussion). With respect to social impacts, homeowners tend to be more committed to their neighborhoods and are more active in civic and community organizations relative to renters (DiPasquale and Glaeser 1999; Rohe, Van Zandt, and McCarthy 2000; Squires and Kubrin 2006). As for crime, because homeownership furthers neighborhood

²³ For instance, the Federal Housing Administration (FHA) and Fannie Mae were created in the 1930s along with the Federal Deposit Insurance Corporation (FDIC) and the Securities and Exchange Commission (SEC).

participation as well as residential stability, it may also be a key determinant of neighborhood informal social control and therefore crime (Squires and Kubrin 2006). Residential instability hinders the development of cohesive and efficacious neighborhood social networks and thereby undermines a neighborhood's capacity for informal social control (Bursik and Grasmick 1993; Sampson, Raudenbush, and Earls 1997). In accord with these arguments with respect to homeownership and crime, Alba, Logan, and Bellair (1994) find that homeowners tend to reside in neighborhoods with significantly lower violent crime rates than renters. This finding holds across a variety of racial and ethnic groups. Thus, policies directed at furthering homeownership bear upon neighborhood social control and crime.

One central stimulus to increase homeownership is access to mortgages. Squires and Kubrin (2006) find that the extent of mortgage lending in a neighborhood, as measured by the average loan amount per home buyer, is negatively related to neighborhood rates of violence. This finding holds net of neighborhood disadvantage, residential mobility, and a host of other neighborhood correlates of crime.

Squires and Kubrin (2006, p. 115) note, however, that homeownership “. . . is not a universal elixir for urban ills. . . Families trapped in a high-priced predatory loan from which they cannot escape or in a declining neighborhood where they are unable to sell their home do not benefit.” Per this observation, one timely topic vitally important to neighborhood change is home foreclosure. Foreclosure rates in the United States have risen dramatically since the 1970s. For instance, data reported by the Mortgage Bankers Association reveal that the percent of all mortgages (conventional, non-conventional, prime, and subprime) entering foreclosure increased from roughly 0.2 percent in 1980 to 0.3 percent in 1990, and then to 0.4 percent by 2000. Foreclosure rates rose to 0.5 percent by 2006, to 0.6 percent by 2007, and to 1.37 percent by the

first quarter of 2009 (U.S. Government Accountability Office 2007; Mortgage Bankers Association 2009).²⁴ In 2008 alone, roughly 2.2 million residential properties entered foreclosure (Mortgage Bankers Association 2008).

The root causes of this recent epidemic in home foreclosures are many. Common explanations include rising unemployment, consumer debt, an oversupply of new home constructions, falling home values, limited home refinancing options, and the growth of the secondary mortgage market where individual mortgages are packaged and sold as securities.²⁵ In addition to these causes, much has been made of the rise and subsequent collapse of the subprime mortgage market for both the rise of home foreclosures and the global recession more generally.

Subprime loans are typically directed toward individuals with weak or limited credit histories, low incomes, and high levels of debt relative to income and savings. That said, it is certainly true that many borrowers that could qualify for prime mortgage loans nonetheless took out subprime loans or were steered toward such loans (Schloemer et al. 2006). Relative to prime loans, subprime mortgages have higher interest rates and fees, and are more likely to include prepayment penalties. In a short period of time, subprime mortgages grew from non-existence to one-quarter of the mortgage market. In the mid-1990s, subprime loans accounted for 0 to 1

²⁴ Definitions of “foreclosure rates” vary across data sources. The foreclosure process begins when a borrower defaults on a loan and the lender initiates legal action. There are two stages of the process. Stage 1 entails the initiation of legal action against the borrower, but the borrower is still the owner of the property. During this stage, a borrower may still avert foreclosure of the property by paying past due payments or making other arrangements with the lender. During Stage 2 of the foreclosure process, the property is repossessed and sold. Of the leading industry groups and information services, RealtyTrac.com reports foreclosure rates based on the number of properties entering Stage 1 *or* 2 of the process during a given time period. The Mortgage Bankers Association of America reports foreclosure rates based on the number of properties entering Stage 1 *only*. Foreclosures.com reports rates based on the number of properties entering Stage 2 *only* (Chen 2008). Thus, foreclosure rates are not comparable across these sources. We report data from the Mortgage Bankers Association of America in this review.

²⁵ One common critique of the secondary mortgage market is that loan originators have less incentive to assess the capacity of a potential homeowner to make payments when that mortgage can be bundled with other mortgages and subsequently sold as securities (Shiller 2008). In theory, the bundling of loans spreads risk, but not if this bundling of mortgages promotes ill-advised lending practices (e.g., failure to check or verify borrowers’ income).

percent of loan originations (Schloemer et al. 2006). In 2003 subprime loans accounted for 10 percent of the market, and then ballooned to nearly a quarter of the market just three years later.

Subprime loans account for a substantial share of the loans in default. The foreclosure rate (i.e., homes at any point in the foreclosure process) on subprime loans equaled 4.5 percent in the 4th quarter of 2006, but 8.7 percent by the 4th quarter of 2007 (Joint Center for Housing Studies 2008). In contrast, the foreclosure rate on prime loans was less than one percent in 2007. The Center for Responsible Lending estimates that 1.5 million subprime loans have already been foreclosed, and another 2 million subprime loans are presently at least sixty days delinquent on payments and therefore at risk of foreclosure (Garrison, Rogers, and Moore 2009).

Despite the current mortgage crisis in the United States, few scholars have investigated the impact of subprime lending practices or foreclosures on neighborhood rates of crime, and none have done so with a dynamic, longitudinal design. Yet there are several reasons to expect that foreclosures will adversely affect neighborhood crime rates, especially if there is a concentration of foreclosures in a given neighborhood. First, foreclosures may adversely affect neighborhood crime rates by increasing the supply of available targets for a property crime and available locations for prostitutes and drug users to congregate (Spelman 1993). Unoccupied properties are particularly ripe for vandalism and burglary. Second, the repossession of a property leads to residential turnover and potentially the fragmentation of neighborhood social networks. Per the systemic model of social disorganization, social ties among neighborhood residents facilitate the informal social control of crime (Bursik and Grasmick 1993; Sampson, Raudenbush, and Earls 1997). While the exit of a few members of a neighborhood social network because of foreclosure may not undermine social control to a great extent, home foreclosures can easily snowball in a given neighborhood and lead to substantial turnover of the

population. Research has shown that home foreclosures depress housing values in the vicinity of the foreclosed property (Immergluck and Smith 2006a), particularly if there is a concentration of foreclosures (Schuetz, Been, and Ellen 2008). Declining property values then lead to an increased risk of mortgage default for the remaining homeowners. Thus, a given neighborhood may reach a tipping point of foreclosures whereby early home repossessions create a tidal wave of subsequent foreclosures, and devastate neighborhood social networks.

Of the limited cross-sectional research examining the effect of home foreclosures on crime, Immergluck and Smith (2006b) find that the rate of foreclosures in a given census tract in Chicago in 2001 was significantly predictive of violent crime in the same year, though not property crime. A one percentage point increase in the foreclosure rate corresponds to a 2.33 percent increase in violent crime. While these authors lack data to test intervening mechanisms, they suggest that foreclosures lead to more vacant and abandoned properties, which create opportunities for crime and may weaken resident commitment to the neighborhood.

Of course, it may be the case that rising neighborhood crime rates adversely impact foreclosure rates. In other words, the causal relation between crime and foreclosure may be reciprocal. Given the inverse relation between crime and property values (Taylor 1995; Schwartz, Susin, and Voicu 2003; Tita, Petras, and Greenbaum 2006; Hipp, Tita, and Greenbaum 2009) and that declining property values make mortgage default more likely, it is likely that rising crime at least indirectly leads to higher foreclosure rates. We are unaware of any studies to test this relationship at the neighborhood-level, though in a state-level analysis Feinberg and Nickerson (2002) find that prior crime rates, particularly violent crime, significantly increase the likelihood of mortgage default.

In sum, research on homeownership, mortgages, foreclosures, and crime, while very limited, suggests that homeownership leads to reductions in crime while foreclosures lead to increases in crime. The causal relation is likely reciprocal, such that increases in crime subsequently lead to greater foreclosure rates and declines in homeownership.

E. Immigration

From 2000 to 2008, the U.S. population grew by over 22 million individuals, 8.1 million of which is accounted for by international migration (U.S. Census Bureau 2008). Over this same period, the foreign born population in the United States increased by over 22 percent while the native born population increased 5.3 percent (Pew Hispanic Center 2009). At the time of the 2000 census, the foreign born population equaled 11 percent of the total U.S. population. By 2007, this share had increased to nearly 13 percent.

While New Jersey, Illinois, Florida, Texas, New York, and especially California had the most sizable foreign born populations in 2000, which have continued to grow, the largest percent increases in the size of foreign born population from 2000 to 2007 occurred in Alabama, Arizona, Arkansas, Nevada, South Carolina, and Tennessee. The foreign born population increased by over 50 percent in each of these states in just an eight year span (Pew Hispanic Center 2009). We illustrate these recent trends in immigration and the foreign born population to motivate a discussion of neighborhood change and immigration. Immigration represents one significant factor in neighborhood population change. Are there any repercussions for neighborhood rates of crime?

Before proceeding, it is important to make a distinction between two research questions: (a) whether immigrants are any more or less criminal than native born population groups?; and

(b) whether the *process* of immigration to metropolitan areas and neighborhoods affects rates of crime for both immigrant and native born groups? With respect to the former, Thomas and Znaniecki's (1918) theorizing with respect to social disorganization followed from their examination of Polish immigrants in the United States at the beginning of the 20th century. Thomas and Znaniecki viewed social disorganization as the consequence of the breakdown of the isolation of peasant communities. Immigrants to the United States had to manage the change associated with moving to a foreign, industrializing urban environment, and adapt to a new language and a new set of customs that were very different from where they had come from. Thomas and Znaniecki argued that the older immigrants were more effective at coping with change, whereas the children of immigrants were more likely to fall into crime and deviance. The youth were still in the process of being socialized, and more susceptible to the influence of new attitudes and value systems.

With respect to answering the question of whether immigrants are any more or less criminal than natives, research from the early part of the 20th century found that immigrants were *less* criminally involved than native born individuals and that immigration had little impact on the volume of crime in the United States (U.S. Immigration Commission 1911; Wickersham Commission 1931). Successive generations displayed higher rates of criminality than their immigrant parents or grand-parents, though still generally lower than native born groups (U.S. Immigration Commission 1911; Wickersham Commission 1931; Sutherland 1934). Recent studies, in an era characterized by immigration from Latin America, Asia, and the Caribbean (as opposed to European), have uncovered similar findings. For example, Sampson, Morenoff, and Raudenbush (2005) find that first- and second-generation immigrants are far less likely to

commit acts of violence than third-generation.²⁶ This is true for Latino immigrant groups as well as non-Latino white and black immigrants (see also Morenoff and Astor 2006; Sampson 2008b). Similarly, Kirk (2008) finds that first- and second-generation immigrants are significantly less likely to be arrested for a crime than third-generation. Such findings counter the assertions of classic assimilation theory (Warner and Srole 1945; Gordon 1964), which assumes that full assimilation into American society is integral for upward mobility. Rather, in accordance with the findings presented above, some scholars suggest that because assimilation and acculturation have apparent negative consequences for some immigrants, it may be advantageous for immigrants to avoid assimilation into those “segments” of American society characterized by a subculture of crime and violence (Gans 1992; Portes and Zhou 1993; Portes and Rumbaut 1996).

While answers to the question of whether immigrants are any more or less criminal than natives are integral for understanding the immigration-crime nexus, for the purposes of this review our interest is primarily with the effects of the *process* of immigration.²⁷ Specifically, we are interested in whether neighborhood population changes due to immigration impact neighborhood crime rates. Since the pioneering work of Shaw and McKay, much attention has been focused on the impact of the concentration of immigration into certain neighborhoods. In contrast to Shaw and McKay’s early 20th century observation that delinquency rates and the percent of foreign population correlate positively, an assortment of studies have found that immigrant concentration and violence are either not related or negatively related (e.g., Butcher and Piehl 1998; Hagan and Palloni 1998; Lee, Martinez, and Rosenfeld 2001; Krueger et al.

²⁶ First-generation refers to individuals born outside of the United States, second-generation refers to individuals with at least one parent born abroad, and third-generation refers to individuals with at least one grandparent born abroad.

²⁷ While our emphasis is on immigration and neighborhood changes in crime, interested readers are encouraged to consult the following references for a broader treatment of the nexus between immigration and crime: Tonry (1997); Hagan and Palloni (1998); and Martinez and Valenzuela (2006).

2004; Nielsen, Lee, and Martinez 2005; Sampson, Morenoff, and Raudenbush 2005; Stowell and Martinez 2007). A variety of explanations have been used to explain such findings. First, while immigrants often reside in disadvantaged neighborhoods, such areas may not be characterized by the social isolation and disorganization common to so many central city neighborhoods (see Wilson 1987). Rather, immigrants frequently concentrate into ethnic enclaves characterized by familiar cultural traditions and supportive social networks.²⁸ These social networks, and the social capital derived from them, facilitate the control of crime as well as aid the process of assimilation for new arrivals (Portes and Rumbaut 2001). Second, immigration may have spurred the growth and revitalization of many U.S. cities previously depopulated through deindustrialization and suburbanization, thereby indirectly leading to lower levels of central city violence (Waldinger 1989). Third, Sampson (2008b, p. 33) provocatively asserts that the “American culture [of violence] is being diluted” through immigration. The penetration of immigrants from less violent societies into the United States may be diluting the American culture of many central city neighborhoods which stresses the use of violence to display dominance and social status.

Much of this recent work on immigration and crime is static, correlating neighborhood composition with neighborhood rates of crime at a single time point. Recall, however, that Shaw and McKay were especially interested in the growth of the city – a dynamic process. One source of growth is immigration, and one potential outcome of growth is ethnic heterogeneity. In the

²⁸ Of course, ethnic enclaves are not merely a recent phenomenon (see, e.g., Lieberman 1980). One hundred years ago, Chicago School sociologists too observed areas characterized by ethnic enclaves. In the process of the growth of the city, neighborhoods undergo periods of both social organization and social disorganization (Burgess 1967 [1925]). The excess of actual city growth (in terms of population) over natural growth disturbs neighborhood equilibrium and leads to social disorganization. Yet disorganization does eventually lead to reorganization through a natural process of adjustment (Burgess 1967 [1925]). With respect to immigration, ethnic enclaves often became destabilized as U.S. cities grew through successive waves of immigration. New immigrant groups, from different countries and regions of Europe, invaded the residential spaces of older groups, and older groups eventually moved to outer-lying areas. These periods of social disorganization were marked by ethnic heterogeneity, and led to elevated crime levels.

social disorganization explanation for crime, ethnic heterogeneity impedes communication and interaction among neighborhood residents, thereby undermining processes of informal social control and increasing the likelihood of crime (Shaw and McKay 1942; Sampson and Groves 1989; Bursik and Grasmick 1993). The core argument is not so much that a concentration of immigrants leads to higher crime, rather that a heterogeneity of population does. This implies a dynamic process. As the population composition of a neighborhood becomes relatively more heterogeneous than in previous time periods, then crime should rise relative to those previous time periods. Yet if immigrants move to ethnic enclaves characterized by homogenous population groups, then informal social control should be unaffected and crime rates should be stable. Additionally, if a previously heterogeneous neighborhood becomes more homogenous through a rapid influx of one ethnic group, then social control processes may be enhanced. Does research support such views?

In a city-level analysis of the impact of growth in immigrant population, Butcher and Piehl (1998) find in a cross-sectional analysis that immigration and crime rates are positively correlated; yet the association disappears once accounting for city-wide demographic and socioeconomic characteristics. Additionally, in a longitudinal analysis Butcher and Piehl find that increases in recent immigration, defined as the fraction of the metropolitan area that had been living abroad one year prior, have no significant effect on changes in crime. That is, immigrant inflows have no consequence for metropolitan area crime rates. This is true for a combined measure of violent and property crime, as well as separately for violent crime.

Using U.S. Census data and homicide records from the Chicago Police Department, Chavez and Griffiths (2009) examine the association between homicide trends from 1980 to 1995 and neighborhood changes in the proportion of recent immigrants. They find that

neighborhoods with low and temporally stable rates of homicide were the ones most likely to be destination neighborhoods of recent immigrants. Neighborhoods with moderate rates of homicide and those with high, fluctuating rates had declining proportions of recent immigrants over the course of the 1970s and 1980s. These descriptive results suggest that the growth of recent immigrants in a neighborhood is not associated with increases in lethal violence.

MacDonald, Hipp, and Gill (2009) examine whether increases in the concentration of immigrants in Los Angeles neighborhoods during the 1990s led to changes in neighborhood crime counts. Using an instrumental variables framework to minimize the endogeneity between immigrant residential patterns and crime, MacDonald and colleagues find that neighborhoods undergoing a rise in immigrant concentration had greater than expected reductions in total crime and violence, net of the effects of neighborhood poverty, residential stability, population density, and the age structure of the neighborhood. In particular, they find that a one standard deviation increase in the concentration of immigrants leads to a 27 percent reduction in total neighborhood crime and a 50 percent reduction in violent crime.

Much scholarly attention during the early part of the 20th century was given to the implications of immigration for neighborhood change and crime. Yet for a variety of reasons, including the drastic decline in immigration following passage of the 1924 Immigration Act as well as the paradigmatic shift in criminology to a focus on individual-level explanations for criminal behavior, research on the nexus of immigration and crime has not figured anywhere near as prominently since World War II as it did during the early part of the 20th century. Even since the passage of the 1965 Immigration Act, which has prompted massive influxes of Latin American and Asian immigrants into the United States, there has been relatively little criminological attention given to the issue of immigration. While important research advances

have been made in the past decade for understanding the implications of concentrated immigration for crime, it is still true that very few studies have taken a dynamic approach to the topic. Additionally, sorely under-explored is the potential for contrasting effects of legal versus illegal immigration on neighborhood change and crime. In an era marked by drastic population shifts to urban areas because of immigration, the dearth of criminological research on *change* is puzzling. From the limited research available, it appears that the concentration of immigration indirectly promotes reductions in crime and violence. While speculative, the intervening mechanism underlying this association may be that the concentration of immigrants facilitates shared goals and values among neighborhood residents, and therefore promotes informal social control. An examination of intervening mechanisms is needed.

F. Concluding Remarks

Research reveals that neighborhoods follow a developmental or life-cycle model, and undergo patterns of deterioration and revitalization over time. Many central city areas, which deteriorated in the 1960s, 1970s, and 1980s from population loss and economic restructuring, have been revitalized in recent decades. Interestingly, while within-neighborhood poverty rates and concentrated disadvantage changed over this period, the between-neighborhood distribution of poverty and disadvantage was remarkably stable in many U.S. cities (Sampson 2009). In other words, neighborhoods may change internally while at the same time the economic stratification of neighborhoods within a metropolitan area stays the exact same.²⁹

²⁹ For instance, Sampson and Morenoff (2006) report a correlation of 0.87 between neighborhood poverty rates in Chicago in 1970 and rates for 1990, thus implying considerable between-neighborhood stability. Yet, the average neighborhood poverty rate increased during this period from 11 percent to 20 percent, and the number of neighborhoods characterized by extreme poverty (over 40 percent poor) increased from 2 percent of neighborhoods in 1970 to over 12 percent by 1990. Thus, poverty became increasingly concentrated, yet the spatial distribution remained durable over time.

With gentrification, crime declines are not immediate, but research does suggest long-run declines in crime result as neighborhood social networks coalesce to control crime. Yet, relatively unexplored is whether there is a net reduction in crime throughout a metropolitan area from gentrification, or just a shift in the relative spatial distribution of crime across neighborhoods as some neighborhoods gentrify while others do not. Similarly, there is some evidence that recent demolitions of high-rise public housing developments have led to reductions in crime in focal neighborhoods, yet they have also produced increases in violence in nearby neighborhoods because resident displacement has disrupted existing gang territories. As for immigration, results reveal that the increasing concentration of immigration in central city neighborhoods has led to reductions in crime. A variety of theoretical rationales have been proposed to explain this finding, yet tests of intervening mechanisms are largely missing from the research literature.

Of course, neighborhoods which have experienced reductions in crime due to gentrification, public housing demolitions, increasing concentrations of immigration, and other forms of migration are not irreversible. One recent trend that will surely impact the vitality of central city neighborhoods as well as crime rates is the rise in home foreclosures. Moreover, to the extent that foreclosures are spatially concentrated into certain neighborhoods, socio-economic deterioration and rising crime may also concentrate.

In addition to the cyclical nature of neighborhood development, what has also become clear from the prevailing research is that crime is both a cause and a consequence of population migration and socio-demographic change. For instance, in the long-run gentrification appears to lead to declines in neighborhood crime, which then feeds back into neighborhood change by reducing fear and making neighborhoods a more attractive place for residence and investment.

III. Directions for Future Research

In this essay, we examined five specific facets of neighborhood change related to population migration—population loss, gentrification, public housing development and demolition, homeownership and foreclosure, and immigration. Although there is a developing body of research on neighborhood change and crime, it is plainly obvious that there is much that is not known. Here we offer a research agenda organized around targeted themes that we believe are most promising for the field to pursue.³⁰ We see these five themes—causal mechanisms, velocity of change, spatial dependence and political economy, displacement, and crime trends and forecasting—as applicable not only for the particular facets of neighborhood change we reviewed herein, but also as central to a broader array of neighborhood changes such as economic development, physical changes to neighborhoods, and criminal justice interventions.

A. Future Research

Causal Mechanisms. Wikström and Sampson (2006, p. 2) suggest that a mechanism explains “. . . *why* a putative cause brings about an effect” (emphasis in original). Additionally, Sampson (2006b, p. 32) argues that a social mechanism is “. . . a theoretically plausible (albeit typically unobservable) contextual process that accounts for or explains a given phenomenon.” We know that neighborhoods change and that this change is correlated with changes to both the temporal trend in crime rates within neighborhoods and the relative distribution of crime between neighborhoods. Yet the key question is *why*? For instance, while we know that

³⁰ We conclude that it is premature to discuss any policy implications from our review given the limited base of dynamic longitudinal research to draw on. Moreover, questions about what is a neighborhood, how is it measured, how are neighborhood structure and process measured, and the effects of selection on causality, to name but a few key issues, loom large in any research on neighborhoods and crime.

population turnover from gentrification is positively correlated with changes in neighborhood crime (in the short-term) and that the concentration of immigration is negatively correlated with crime, we have less understanding as to *why* this is the case. Prevailing research suggests that one answer is informal social control; instability in neighborhood social networks due to gentrification can undermine informal social control while homogenous ethnic enclaves of immigrant groups can facilitate social control. Therefore, informal social control is one intervening mechanism which may explain why neighborhood change affects crime. Yet without repeated measures of informal social control, this causal path remains an untested hypothesis. Examination of the mechanisms which explain why population migration, and other neighborhood changes, is associated with neighborhood crime needs to be a focus of future research.

The Velocity of Change. Early 20th century Chicago School of Sociology researchers argued that social change is a natural, continuous process which involves both adaptation and disruption (Thomas and Znaniecki 1918). In this process, social organization is followed by disorganization, but this eventually gives way to reorganization (Burgess 1967 [1925]). In this sense, Burgess argued that neighborhoods metabolize social change. Decades later, Schurman and Kobrin (1986) argued that it is the “velocity” of neighborhood change that is consequential to subsequent increases in neighborhood crime rates rather than the mere presence of change. Gradual neighborhood change may have little influence on neighborhood crime, yet rapid change may be difficult to metabolize, thus leading to escalations in crime. Our review uncovered evidence of this pattern. In their study of gentrification, Covington and Taylor (1989) found that gentrifying neighborhoods with rapidly appreciating home values had relatively greater increases in robbery and larceny relative to slowly appreciating neighborhoods. Despite the apparent

influence of the velocity of neighborhood change on behavior, virtually no studies of neighborhoods and crime have examined the importance of the pace of change. While conceptualizing and measuring the velocity of neighborhood change will not be easy, we believe this is an important topic for future research.

Spatial Dependence and Political Economy. Neighborhoods are interdependent ecological units, such that the conditions in one neighborhood are influenced by the conditions of spatially proximate neighborhoods as well as the larger urban and global environment. We need a better understanding of how city-level (and county) political and economic decision-making influences neighborhood crime (e.g., zoning, tax incentives to businesses, and tax incentives to homeowners, to name a few). Recall that Bursik (1989) found that public housing in Chicago has typically been sited in those neighborhoods which offered the least resistance to the placement of public housing in the neighborhood. To the extent that the siting of public housing and neighborhood crime are associated, this means that explanations for neighborhood crime require an understanding of city-level political processes as well as the social relations between neighborhood residents and political decision-makers. Empirically, prior research suggests that ignoring spatial dependence may lead to biased parameter estimates and erroneous conclusions about the causes of crime (e.g., Messner et al. 1999; Baller et al. 2001). Yet this issue is not merely methodological, which can be circumvented through spatial regression models. Rather, the substantive reasons for the spatial dependence of crime, such as political economy, need to be a focus of future research (see Logan and Molotch 1987).

Displacement. Many argue that gentrification necessarily results in the displacement of low-income groups from central city neighborhoods by middle- and upper-income groups (but see Freeman and Braconi 2004). Similarly, the demolition of public housing units leads to

displacement. Yet the repercussions of resident displacement on the crime rates of sending and receiving neighborhoods are largely unexplored.³¹ The challenges are two-fold: first, to collect multiple time points of crime data on sending and receiving neighborhoods, and second, to track the movement of displaced individuals. Addressing these challenges is necessary to determine whether (and to what extent) displacement of residents influences neighborhood crime rates, and to assessing the impact of urban policies designed to de-concentrate poverty.

Crime Trends and Forecasting. Explaining the facts of crime is fundamental to criminological research. A bevy of explanations have been offered to explain the crime drop in the 1990s, including economic prosperity, demographic shifts, mass incarceration, and the decline in the crack cocaine market (see, e.g., Rosenfeld 2004; Blumstein and Wallman 2005). Under-explored are the implications of neighborhood change. Fagan (2008) asks what proportion of the change in crime rates is attributable to neighborhood factors, relative to secular trends and unobserved exogenous factors. Additionally, is it possible to anticipate future crime trends from current metropolitan changes? For instance, what does the dramatic increase in home foreclosures in recent years (2007-2009) spell for neighborhood crime rates and overall crime trends? What is the effect of the relatively large inflow of returning ex-prisoners on neighborhood crime rates? The U.S. Census Bureau (2009b) recently reported that just 11.9 percent of U.S. households moved in 2008, the lowest rate since the bureau began tracking such figures in 1948. Given that residential stability is conducive to the informal social control of crime, do these trends in mobility foretell stability or even a reduction in neighborhood crime?

³¹ The media has offered speculative accounts of the repercussions of displacement. For instance a recent article in *The Atlantic* (Rosin 2008) suggests that violence migrates with those residents displaced from demolished public housing. However, Rosin conflates correlation with causation. While violent crime and displaced residents may be located in the same area, the capacity to make a causal connection depends upon having multiple time points of data (i.e., what was the extent of neighborhood crime prior to the arrival of displaced residents?) and some idea about whether it was actually the new residents that were engaging in violent crime. Rosin's journalistic account of displacement and mobility fails to meet this burden of proof (see Briggs and Dreier 2008 for a discussion), but nonetheless underscores several important research questions regarding the effects of closing public housing units.

To these questions about the sources of crime trends, we add an interest in the opposite causal direction: what proportion of changes in neighborhood population and socio-demographics are attributable to crime? Did the crime drop in the 1990s spur gentrification?

B. Concluding Remarks

Despite over a century of ecological studies of neighborhoods and crime, knowledge is limited about the underlying mechanisms of stability and change at the neighborhood level. Indeed, in spite of massive social changes in cities and beyond throughout the 20th century, the field of criminology has not kept pace and, as a result, neighborhood change and crime has not been a primary focus of empirical research. In part this is due to the data requirements needed to study neighborhood change and its subsequent effects on crime and vice versa. Years ago, Albert Reiss (1986) bemoaned the lack of longitudinal data on communities and crime. The situation today remains woeful. Important research questions abound yet few studies contain the requisite repeated observations over time that allows answers to these questions, particularly with respect to the dynamics of change in neighborhood social processes. Thus, building better data sets remains a number one priority, as is greater attention to the conceptual and methodological challenges to conducting research on neighborhood change. Drawing on our review of the extant literature on population migration at the neighborhood level, we have put forth a research agenda focused on five themes designed to enhance our understanding of neighborhood change and crime in the modern metropolis.

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