Essays on Place and Punishment in America

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Abstract

This dissertation consists of three essays on the spatial and neighborhood dynamics of incarceration in the United States.

In the first essay, I apply theories of social control and urban inequality to study prison admission rates at the census tract level for the state of Massachusetts. Regression analysis yields three findings. First, incarceration is highly spatially concentrated. Census tracts covering 15 percent of the state's population account for half of all prison admissions. Second, across urban and non-urban areas, incarceration is strongly related to poverty, high school dropout, and minority population, even after controlling for crime. Third, an outlier analysis shows admission rates in small cities and suburbs are among the highest in the sample and far exceed model predictions. The main theoretical implication is that mass incarceration emerged not just to manage distinctively urban social problems but was characteristic of a broader mode of governance evident in communities often far-removed from deep inner-city poverty.

The second essay examines the pre-prison neighborhood environment of racial and ethnic subgroups within the Massachusetts prison population. From an analysis of over 13,000 prison admissions in Massachusetts, findings indicate that some of the most disadvantaged pre-prison neighborhoods come from places outside of Boston. Whites and Hispanics who enter prison from smaller city centers in Massachusetts lived in significantly more concentrated
disadvantage than their counterparts in Boston. However, black men and women coming from Boston lived in the greatest concentrated disadvantage among the black admission population. Taken together, the prison population is drawn from a diverse set of communities, and the highest levels of concentrated disadvantage in the state are composed of small cities and towns.

In the third essay, I investigate neighborhood attainment after a period of incarceration. Combining census data and prison records with a longitudinal survey of people leaving prison and returning to the Greater Boston area, this paper examines mechanisms explaining the disparities in neighborhood attainment upon release from prison. In the context of Greater Boston, black and Hispanic men and women leaving prison move into significantly more disadvantaged areas than their white counterparts, even after controlling for levels of pre-prison neighborhood disadvantage. Household dynamics are an important neighborhood sorting mechanism: living in concentrated disadvantage was more likely for those living in non-traditional households or group quarters. While 40 percent of respondents initially moved to only one of two neighborhoods in Boston, nearly 25 percent of respondents left prison and entered formal institutional settings, returned to prison, or lived in extreme social marginality throughout various locations in Greater Boston. Racial and ethnic differences in neighborhood sorting by household type—and the conditions of extreme marginality—are key mechanisms of neighborhood attainment during the precarious of period reentry.
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If policing in New York under Giuliani and Bloomberg was crime prevention tainted by racist presumptions, in other areas of the country ostensible crime prevention has mutated into little more than open pillage.

Ta-Nehisi Coates

1

Introduction

The picture of a hyper-incarcerated neighborhood has been static since scholars have been studying what is known as the prison boom. The neighborhood is racially segregated, with very high crime rates and extreme levels of poverty and other markers of socioeconomic disadvantage. The neighborhood
is typically part of a deep core of disadvantage in a major urban city, marred by
gang violence, drug addiction, and public social disorder. These neighborhoods
have been easy to point out on a map. In 1992, The New York Times cited a finding
from a study conducted in New York City, oft repeated by policymakers, prison
reform advocates, and scholars alike, used convey the spatial character of mass
imprisonment: “75 percent of the state’s entire prison population comes from
just seven neighborhoods in New York City” (Clines 1992, quoting Eddie Ellis).
Ten years later, Fagan (2002) cites this same statistic, identifying the seven
neighborhoods as: the Lower East Side, the South Bronx, Harlem, Brownsville,
Bedford-Stuyvesant, East New York, and South Jamaica (p. 1568, Footnote 87).

With few exceptions, this image has persisted twenty-five years later, echoed
through the entire theoretical program of research on the community-level
causes and effects of mass incarceration. Scholars may use the urban imagery as a
way to draw attention to the deleterious conditions of intense formal social
control in a small number of urban neighborhoods, and to bring into sharp focus
the micro-level conditions of punishment often obscured by a focus on national
States embarked on a new and highly punitive era in regard to poor communities
of color—signifying a profound change in how American society governs
segregated urban areas and those living within them” (p. 195). Wacquant (2001)
describes the historical trajectory of ghettos to prisons: “sweeping economic and
political forces have reshaped the structure and function of the urban ‘Black Belt’
of mid-century to make the ghetto more like a prison”, while the racial inequities
of postwar “inmate society” makes the prison more like a ghetto (p. 97). Michelle Alexander (2010) describes in great detail the transition from community policing to military policing as taking place in poor urban neighborhoods. She writes, “Drug arrests skyrocketed, as SWAT teams swept through urban housing projects, highway patrol agencies organized drug interdiction units on the freeways, and stop-and-frisk programs were set loose on the streets” (Alexander 2010, p. 77). The image is effective and powerful: urban neighborhoods have earned the largest scholarly and policy attention since the advent of the prison boom.

Research on race and urban poverty views incarceration as a new and important aspect of social disadvantage in inner-city neighborhoods. The National Research Council (NRC) consensus report, The Growth in Incarceration in the United States, finds that incarceration is concentrated in specific places, and the dramatic increases in incarceration are highly uneven, with some communities experiencing stable and disproportionately high rates and others seeing very few if any residents imprisoned (2014, p. 283). Despite research on the spatial distribution of social inequality across rural areas, suburbs, and large cities, few studies examine incarceration rates outside the urban core or model rates of incarceration in both urban and non-urban areas. The evaluation made by the NRC report has been based entirely on the results from cross-sectional analyses of single large-city case studies during the latter part of the prison boom. The report notes that insufficient attention has been paid to longitudinal trajectory of the prison boom as it relates to place and neighborhoods.
Indeed, the relationship between place and punishment has its own historical evolution. From findings presented in this dissertation, I conclude that the image of the hyper-incarcerated ghetto neighborhood is limiting, particularly in the current moment of the prison boom. In a set of empirical analyses, I expand this picture and evaluate the spatial lens through which we understand the population dynamics of those involved with formal penal institutions. In doing so, I include a variety of community areas on the incarceration map, finding so-called “million-dollar blocks” (Spatial Information Design Lab 2007) in a variety of community areas, from suburbs to isolated urban centers, far removed from large population centers. These cities have been involved with the prison boom since its nascent beginnings, and some communities within them have seen the largest increases in incarceration rates, particularly in recent years.

How does the image of the hyper-incarcerated urban neighborhood hold in contemporary trends? In what follows, I present a short analysis of the historical trends of prison admissions in Massachusetts and commitments to New York state prison. This analysis of historical trends serves as a motivation for the dissertation, which aims to present a full picture of incarceration across spatial units.

1.1 Historical Patterns of Place and Punishment

It is clear from the earliest points of the prison boom that incarceration was profoundly spatially concentrated in the largest metropolitan areas of Massachusetts and New York. In both absolute numbers and overall proportion
of individuals admitted, New York and Boston neighborhoods were the early battlegrounds of the “new penology” (Feeley and Simon 1992). However, by 2014, the spatial pattern of incarceration has changed dramatically.

Understanding these overall declines is a matter for future research, which I will pursue with additional data on arrests and sentencing in both New York and Massachusetts. The take-away from this initial analysis of the historical trends is that the spatial pattern, and thus the quintessential hyper-incarcerated neighborhood, has not been static, though our theorizing and analysis has.

The first figure (Figure 1.1.1) displays prison admissions, unadjusted for population, to Massachusetts state prison from 1973 to 2014. Over 400 men and women were admitted to state prison in 1973 from Boston, roughly the same number who were admitted in 2014. The steepest absolute growth in prison admissions unsurprisingly occurs outside of key cities, as this is where the largest population growth occurred in Massachusetts during this time period. Figure 1.1.2 shows how rates of prison admissions have changed over time. The steepest increases in rates of incarceration occur in the second and third largest cities in Massachusetts: Worcester and Springfield. Other satellite cities and towns have stabilized to the Boston rate, and other cities and towns have seen only minor increases in rates over time.

The third figure (Figure 1.1.3) reports the percentage of prison admissions attributable to each community area. In 1973, Boston accounted for nearly half of all admissions to prison despite only accounting for about 18 percent of the
Figure 1.1.1: Prison admissions by cities and regions in Massachusetts, 1973–2014.
Figure 1.1.2: Prison admissions rates by cities and regions in Massachusetts, 1973–2014.
state’s population. Today, about 20 percent of the prison population comes from Boston each year, but the population size of the city has remained the same since the 1970s, and in recent years, Boston accounted for less than 18 percent of prison admissions for new criminal offenses. How is it that during the height of the prison boom we see such precipitous declines in the proportion of admissions from Boston? The steep declines in prison admissions from Boston appear to start as early as the mid-1980s—the period of time often associated with the boom itself.

The next set of figures display data on criminal commitments to New York state prison from 1994 to 2014. I present this data from New York to show that Massachusetts’s spatial pattern is not unique. This additional data provides an important check on the Massachusetts data—allowing us to compare to cities of the North in their overall spatial pattern across time. Although a more narrow time horizon, this data tells a similar story of decarceration occurring entirely in the state’s largest metropolitan city. Figure 1.1.4 displays commitments to New York prisons in absolute numbers, demonstrating this swift decline in prison commitments from New York City after 2000.

Figure 1.1.5 displays this same information, but as a percentage of all commitments. In 1994, New York City accounted for nearly 70 percent of commitments to state prison. These data undoubtedly mapped onto the previously cited statistic of seven neighborhoods within New York producing the vast majority of these commitments. By 2014, the data tell quite a different story.
Figure 1.1.3: Prison admissions rates as a percentage of all prison admissions by cities and regions in Massachusetts, 1973–2014.
**Figure 1.1.4:** Prison commitments by region in New York, 1994–2014. No data for 1996.
This number is now less than 40 percent, roughly equivalent to the portion of the population of New York state residing in the city. The Brennan Center for Justice (2013) identified several reasons to be thrilled about this precocious decline in incarceration—namely that it maps onto the crime drop, an often cited concern about the reversal of mass incarceration as a potentially increasing crime. New York City has seen a marked decrease in misdemeanor arrests, especially since 2000. However, during this period of decarceration, areas in upstate New York—urban, suburban, and rural cities and towns—saw increases in both absolute and the proportion of men and women committed to state prison. What are the conditions of these areas? Why haven’t they also seen declines in the same way New York City has?

Research on the spatial pattern of mass incarceration argues that the pattern is extremely concentrated in areas of severe urban disadvantage (Sampson and Loeffler 2010; Sampson 2012; Spatial Information Design Lab 2007; Cadora et al. 2003; Clear 2007; Goffman 2014; Rios 2011; Wacquant 2000, 2001). The conditions of urban decline, racial segregation and social control efforts were inextricably linked at the advent of the prison boom. The rhetoric of the new penalty was etched in the streets of Dorchester and Harlem, cemented by new drug policies like the Rockefeller Drug Laws, which in no uncertain terms associated urban drug use and deep inner-city poverty causally with spikes in violent crime. I argue that in both New York and Massachusetts, decarceration began to accelerate in the 2000s and as early as the 1990s in the latter, but this happened in a spatially concentrated way—namely in the two largest cities of each
Figure 1.1.5: Prison commitments as a percentage of all prison commitments by region in New York, 1994–2014. No data for 1996.
state, New York City and Boston. Historically speaking, the result is that in both
New York and Massachusetts, we are witnessing the most spatially diffuse pattern
of incarceration in the context of the prison boom. My dissertation aims to
understand this spatially diffuse pattern of incarceration, and what implications it
has for disparities in incarceration, particularly for racial and ethnic groups, and
policy responses to remedy neighborhoods and communities with utterly
different social worlds from that of Boston and New York City.

Several recent studies and media coverage of fatal police encounters have
drawn attention to this issue of smaller cities and their police departments, both
in terms of discrimination and excessive use of force. Ferguson, Missouri, a
suburb with a population of roughly 21,000, received wide attention due to
protests against police violence. Few have begun to tackle the social contexts
producing such violence. Is police violence in these smaller cities an outlier or
highly common? Is there something unique about these contexts or are they
employing similar urban tactics as described by Alexander? What is the political
and social context of formal social control in these areas? Ta-Nehisi Coates
(2015) writes in his reflection on mass incarceration and the black family that
patterns of policing in places like Ferguson could be described as “open
pillage”—where police departments face little public scrutiny and have license to
conduct themselves with excessive force in discriminatory ways with impunity.
Another potential consideration is the dearth of resources in these cities to
combat and respond to problems of poverty and addiction. What might it mean
to return to Boston, where reentry services are concentrated in the state, versus a
smaller regional city with little to no social service infrastructure to speak of?

This dissertation is guided by a general question: what place does place have in the matter of mass incarceration in the United States? I seek to broaden the scope of analyzing social control in spatial confines of large urban metropolises. The main argument of this dissertation is that as state and federal policies were formed around a narrative of ghetto violence and drug use, new social control tactics and penal practices were not limited in application to those areas. I hypothesize that, as policies increased to promote alternatives to incarceration and professionalize police departments around concepts of community policing and diversity, this only happened in places like Boston and New York City, and other urban areas and small cities and suburbs continue to employ similar techniques of neighborhood sweeps, stop and frisk, and others.

Theoretically, I wish to bring in the concept of isolated urban centers to describe a new set spatial tools for analyzing punishment and place beyond the confines of a single city or spatial type. I make two critiques of the current treatment of place and punishment in the literature on mass incarceration in the United States. The first is that the scale and scope of the research program has simultaneously been far too aggregate (to understand micro-level trends in incarceration across time and space), and also far too limited in the sample of places we study (typically large urban centers). The second critique is the tools and assumptions used in urban sociology to measure certain outcomes among highly marginalized populations. In the third essay, I discuss the difficulties in measuring and analyzing the concept of neighborhood attainment as it applies to men and
women leaving prison.

Regional cities of the northeast have received increased attention for spikes in crime, violence, overdoses and addiction epidemics, and concentrated poverty. If the crime decline was most felt in Boston and New York City, these areas did not experience the benefits of the crime drop or decarceration in the same ways (Blumstein 2006). This is not to say that concentrated incarceration (Clear 2007) or hyperincarceration (Wacquant 2009) today is now found in suburban and rural areas. In fact, the durable inequality of urban cities continues to be the prominent narrative. But instead of Roxbury in Boston or Bedford-Stuyvesant in New York, the picture of mass incarceration today comes into focus in Fall River, Massachusetts—a town with a population of 90,000, that from 1972 to 2010 saw an increase in its incarceration rate by 522 percent. In Boston, the rate of incarceration changed between those two time points by only 21 percent. Or another city, Springfield, MA with population of about 150,000, marred by violence and poverty, surrounded by extremely poor suburbs, a census tract experienced an average prison admission rate of 500 per 100,000 for the past six years, nearly ten times the prison admission rate in the state. As Tim Black describes in his ethnography of Springfield MA, “Geographical isolation and plant closures deepened the [North End] neighborhood’s economic and social isolation and almost assured that it would become a magnet for criminal activity” (p. 28). Local Massachusetts politicians and policy analysts have pointed to these areas for years, but they have yet to make significant headlines or come under national view. In the social sciences, these smaller, isolated urban centers and
their contiguous suburbs are relegated to obscurity. Shedding light on the social control processes within these isolated urban centers is a central goal of the dissertation.

1.2 Place and Punishment: An Overview

Because of the historically spatially diffuse nature of the current prison admissions trend, my data and analysis are structured to include all spatial areas. Taking a more catholic approach to place, I study the pattern of incarceration across an entire prison jurisdiction. The results of this broad approach to studying space and incarceration is that we can examine how incarceration rates in neighborhoods vary in different kinds of cities, and whether sub-groups within the population experience varying levels of incarceration by place. For parsimony, I often refer to four key regions in Massachusetts: Boston, Boston suburbs, urban cities in Massachusetts, and other suburban and rural areas. There are many ways to conceptualize urban, here I simply study all cities outside of Greater Boston that have a population of 50,000 or more by the 2010 census. There may be limitations of this definition—what we have is a set of places between 50,000 and 250,000 in central and western Massachusetts.

In what follows, I present three essays that examine aspects of place and punishment in the context of Massachusetts. I use prison records from the Massachusetts Department of Correction, crime data the Massachusetts State Crime Reporting Unit, survey data collected by the Boston Reentry Study, and social and demographic data collected by the U.S. Census and American
Community Surveys.

In the first empirical essay, I apply theories of social control and urban inequality to study prison admissions for the entire state of Massachusetts. Regression analysis yields three findings. First, incarceration is highly spatially concentrated. Census tracts covering 15 percent of the state’s population account for half of all prison admissions. Second, across urban and non-urban areas, incarceration is strongly related to poverty, high school dropout, and minority population, even after controlling for crime. Third, an outlier analysis shows admission rates in small cities and suburbs are among the highest in the sample and far exceed model predictions. The main theoretical implication is that mass incarceration emerged not just to manage distinctively urban social problems but was characteristic of a broader mode of governance evident in communities often far-removed from deep inner-city poverty.

The second essay examines the pre-prison neighborhood environment of racial and ethnic subgroups within the Massachusetts prison admission population. The data include over 13,000 prison records of individuals sentenced to state prison for a criminal offense between 2009 and 2014. Findings indicate that the most disadvantaged pre-prison neighborhoods exist in cities outside of Boston. Whites and Hispanics who enter prison from smaller city centers in Massachusetts lived in significantly more concentrated disadvantage than their counterparts in Boston. However, black men and women coming from Boston lived in the greatest concentrated disadvantage among the black admission population. Taken together, the prison population is drawn from a diverse set of
communities, and the highest levels of concentrated disadvantage in the state are composed of small cities and suburban towns. Understanding the differences in neighborhood context could influence how we understand community-level conditions of incarceration.

In the third essay, I investigate neighborhood attainment after a period of incarceration. Each year over 600,000 people leave prison and become residents of neighborhoods across the United States. Neighborhoods are spatial contexts to which people are socially connected, but imprisonment is fundamentally segregative. When this period of total institutionalization ends, people leaving prison have to forge new relationships to the labor market, with family and friends, the welfare system, the political system, as well as neighborhoods and communities. Due to challenges in observation and measurement, we do not fully understand how individuals establish relationships with place after prison. Combining census data and prison records with a longitudinal survey of people leaving prison and returning to the Greater Boston area, this paper examines mechanisms explaining the disparities in neighborhood attainment after a period of imprisonment. In the context of Greater Boston, black and Hispanic men and women leaving prison move into significantly more disadvantaged areas than their white counterparts, even after controlling for levels of pre-prison neighborhood disadvantage. Mitigating factors such as histories of employment and moving away from former neighborhoods improve neighborhood quality immediately after release from prison. Household dynamics are an important neighborhood sorting mechanism: living in concentrated disadvantage was more
likely for those living in non-traditional households or group quarters. While 40 percent of respondents initially moved to only one of two neighborhoods in Boston, nearly 25 percent of respondents left prison and entered formal institutional settings, returned to prison, or lived in extreme social marginality throughout various locations in Greater Boston. Racial and ethnic differences in neighborhood sorting by household type—and the conditions of extreme marginality—are key mechanisms of neighborhood attainment during the precarious period reentry.

I conclude the dissertation with a summary of the contributions to sociology and policy implications for criminal justice and prisoner reentry reform.
Under current conditions of historically high incarceration rates, researchers have observed that prison and jail inmates are drawn overwhelmingly...
from poor and minority urban neighborhoods (Cadora et al. 2003; Sampson and Loeffler 2010; Travis et al. 2014, Chapter 10). In this context, the U.S. penal system has come to be viewed as a distinctively urban institution, closely connected to the lives of poor young men in American inner cities.

Two main perspectives have emerged to explain the spatial distribution of incarceration. First, the urban inequality perspective observes that a small number of poor, contiguous neighborhoods in large urban cities experience very high incarceration rates, a pattern highly correlated with the spatial distribution of crime (Clear 2007; Sampson and Loeffler 2010; Travis et al. 2014, Chapter 10). A second, related, social control perspective also observes high rates of incarceration in poor neighborhoods in large American cities, but attributes this pattern to a process of social control and confinement of racial minorities who are residentially segregated and dislocated from mainstream social and economic opportunities (Alexander 2010; Garland 2001; Wacquant 2001). Two empirical assumptions follow from these theoretical perspectives. First, incarceration will be significantly associated with socioeconomic disadvantage in urban neighborhoods even after taking account of the spatial distribution of crime. Prior research often finds that poverty, race, crime, and incarceration are highly correlated, but few efforts have assessed the inequalities in incarceration after controlling for the spatial distribution of crime. Although largely overlooked in earlier research, inequalities in incarceration, controlling for crime, indicate a type of excess punishment that is not reducible to spatially concentrated violence. A second implication is that prison admissions largely originate from
poor and segregated urban neighborhoods within metropolitan areas.

The analysis provided in this article challenges this orthodox view, calling attention to rates of prison admissions in small cities and suburbs that have been largely overlooked by researchers. Earlier sociological work relies on single, large-city case studies and neglects incarceration outside central cities. Thus, the urban character of mass imprisonment has become a substantive assumption built into this research program. The picture that comes out of this research can mislead scholars and policymakers, who might be given the impression that mass incarceration is best understood through close examination of the conditions of disadvantaged neighborhoods of large American cities. My analysis of prison admissions for the state of Massachusetts suggests a need for shifting the focus on mass incarceration in America from deep inner-city poverty to a broader conceptualization of disadvantaged urban and suburban areas.

The paper is structured as follows. I present the first empirical test of the links between place and punishment by employing broad a demographic approach, estimating a regression model of the spatial context of mass imprisonment accounting for crime and socioeconomic disadvantage across an entire state. To do so, I analyze a rare dataset of prison admissions for the state of Massachusetts (2009–2010), providing a complete map of the spatial distribution of incarceration in a number of large cities, suburbs, satellite cities, and rural towns. Findings indicate that prison admissions are related to conditions of extreme socioeconomic disadvantage in urban places, but the analysis calls into question the hypothesis that concentrated imprisonment is solely experienced in the core
of disadvantage in large cities. Findings show the highest prison admission rates are located in small cities and suburbs with populations under 90,000, indicating important new sites for studying the local conditions of social control.

2.1 Explaining The Spatial Pattern of Prison Admissions

The spatial distribution of incarceration has attracted increasing attention of policy researchers and sociologists, though the main interest is how context affects recidivism (Morenoff and Harding 2014). Criminal justice mapping by Cadora and collaborators shows in several major cities that prison admissions are drawn from a small number of “million-dollar blocks,” or streets that account for millions of a given state's prison budget (Spatial Information Design Lab 2007). Other scholars have made similar observations, calling the handful of high-incarceration neighborhoods “prison places” from research on Tallahassee (Clear 2007, p. 68). Sampson and Loeffler (2010) describe this same phenomenon in Chicago, calling these neighborhoods “punishment’s place.” These case studies have demonstrated the extreme spatial inequality of urban incarceration rates.

In sociological research, two main perspectives have explained the spatial distribution of punishment in the American context. First, the urban inequality perspective observes that high rates of prison and jail admission are found in urban neighborhoods of concentrated disadvantage. In this perspective, incarceration became a facet of spatially concentrated disadvantage in urban neighborhoods marked by high rates of poverty, racial segregation, and violent crime. Sampson
(2012) provides the leading statement, showing how “things go together” in his study of neighborhood environments and socio-economic disadvantage in Chicago. The urban inequality perspective includes high imprisonment rates as one of many social disadvantages spatially clustering within urban areas. In this description of urban inequality, violent crime is one of the strongest predictors of neighborhood incarceration rates. In a recent examination of the association between incarceration and crime rates in Chicago community areas, the correlation between neighborhood crime and incarceration rates is near unity (0.96), implying that there are almost no high crime, low incarceration neighborhoods in Chicago (Travis et al. 2014, Chapter 10).

Students of urban inequality have widely found patterns of offending and arrest also to be highly concentrated in poor and segregated urban areas (Peterson and Krivo 2010; Sampson 2012; Shihadeh and Steffensmeier 1994; Shihadeh and Flynn 1996; Velez et al. 2003). In Sampson and Wilson's (1995) classic account, neighborhood poverty, racial segregation, and residential instability formed an urban ecology in which the informal bonds of work and family were weak, and crime was likely to flourish. The key empirical implication of the urban inequality perspective is that high rates of prison admission will be found in poor and minority neighborhoods, although much of this association should be explained by the spatial distribution of violent crime. Additionally, the ecological pattern of formal social control has been theorized to diffuse to surrounding neighborhoods, spilling over into contiguous areas and influencing patterns of criminal justice contact independent of the internal neighborhood.
context (Sampson 2012). This spatial diffusion suggests that prison admissions will be highly spatially correlated in contiguous areas.

The urban inequality perspective describes a multifaceted urban ecology in which rates of incarceration and violence are highest in neighborhoods of concentrated disadvantage. A more explicitly causal account of the association between incarceration and disadvantage is provided by the social control perspective. The social control perspective attributes the spatial concentration of incarceration to criminal justice authorities in their efforts to control an array of threats to social order—beyond violent crime—under the historical conditions of the jobless ghetto. The social control perspective proposes that mass imprisonment represents a new regime of racialized urban poverty created through a series of shifts in sentencing and police practices directed at social problems associated with the urban poor. Garland (1991) summarizes this perspective as analyzing “punishment not in the narrow terms of the ‘crime problem’ but instead as one of the mechanisms for managing the urban underclass” (p. 134).¹

The social control perspective explains the spatial inequality in incarceration by studying the spatial organization of urban policing and legal regulation that disproportionately affect poor, minority urban neighborhoods (Herbert 1997; ¹The social control perspective relies less on the specific ecological conditions of urban inequality to explain patterns of imprisonment, but scholars of this perspective tend to study patterns of imprisonment at population or aggregate levels (states or counties), which do not explore the deeply divided experience of imprisonment across neighborhoods. Key works in this area by Garland (1990) and Western (2006) do not restrict their analysis to urban areas, and some scholars explicitly test the relationship between imprisonment and urbanization using national samples of U.S. counties, but findings have been mixed (Bridges and Crutchfield 1988; Weidner 2003).
Kane 2002; Tonry 1995; Wacquant 2008). Contemporary policing that emphasizes order maintenance, sometimes with increased reliance on misdemeanor arrests, combines classic policing strategies with modern techniques of surveillance and spatial control of urban social contexts (Harcourt 2001, p. 8; Hinton 2013). Throughout the 1980s and 1990s police increased arrests for petty offending and urban disorder, which often relied on attributions of criminality and other stigma based on race and class in urban neighborhoods (Cohen 1999; Sampson 2012; Walker and Katz 2012). Strategies such as hot spots policing (see Braga et al. 2012 for a review) also created highly concentrated spatial patterns of arrest. Therefore, a model of neighborhood incarceration rates should account for the distribution of arrests, particularly for non-violent offenses such as drug violations, net of the pattern of violent crime.

The social control perspective also attributes the concentration of imprisonment in poor inner-city neighborhoods to the design of city ordinances and codes for addressing social disorder. The public character of urban disorder led to the proliferation of codes and ordinances that criminalize the activities of poor, especially poor minority, city residents (Anderson 1990; Cohen 1999; Dubber 2001; Duneier 1992; Mauer 2006; Tonry 1995). City and state lawmakers created new policies with spatial restrictions, which expanded police power to regulate homelessness, vagrancy, loitering, and public disorder within parks, downtown business districts, and other public areas—behaviors strongly associated with living in urban poverty (Beckett and Herbert 2010). For example, the development and expansion of criminal codes for drug and weapon
possession established a new precedent for threat elimination very similar to vagrancy laws (Dubber 2001). Through this pursuit of threat management, Dubber (2001) argues that culpability transforms into “nothing more than general, though cryptic, references to dangerousness” (p. 865). The experience of poverty and routine activities of drug dealing in urban neighborhoods lends to easier surveillance and sanction than in suburbs and rural areas (Cohen and Felson 1979; Tonry 1995, p. 105). The public quality of urban homelessness, possession, drug use, and vagrancy became framed in terms of security and criminality, expanding the purpose of penal sanctions to also govern urban social marginality as well as to regulate crime (Beckett and Western 2001; Goffman 2014). By design, these new codes target public activities associated with an urban population, linking the prison to urban neighborhoods by enforcing policies regulating the behavior of city dwellers. This perspective implicates urban cities with a heavy reliance on formal criminal justice systems, including policing and courts, to compensate for their deficiencies in informal social control as compared to suburban and rural towns (Weidner 2003). To test this hypothesis, a model of prison admission should show significantly higher rates in central cities than nonmetropolitan areas.

Empirical research on the spatial distribution of incarceration in neighborhoods, whether from the urban inequality or social control perspectives, has mostly provided case studies of individual cities and has been largely descriptive, such as mapping neighborhood incarceration rates (e.g. Cadora et al. 2003; Sampson and Loeffler 2010; Sampson 2012; Travis et al. 2014, Chapter
The approach taken in prior research has two main limitations. First, the urban focus of the research design promotes an unstated assumption that mapping prison admissions within large cities reflects most of the variation in the spatial distribution of penal confinement. Implicitly, contemporary incarceration is thus confined to urban areas. By limiting samples to large urban cities, scholars are truncating the distribution of concentrated disadvantage and obtaining potentially biased estimates of the social disadvantage-incarceration association. Second, a descriptive approach without a statistical model cannot assess whether the concentration of incarceration in poor and segregated neighborhoods can be explained entirely by the spatial distribution of crime. Incarceration associated with concentrated disadvantage, net of crime, offers evidence of spatially organized social control—policing, prosecution and sentencing—that responds punitively not just to threats to public safety, but also to the myriad social problems of poverty, residential segregation, and population turnover. Such evidence would support a social control perspective in which a variety of social problems associated with race and poverty have been subject to a punitive policy response.

Going beyond earlier research on the spatial distribution of incarceration relies on two innovations. First, I specify a model that writes spatial variation in incarceration as a function of crime, concentrated disadvantage, urbanicity, and spatial autocorrelation. Second, I estimate this model with spatial data at the neighborhood-level that includes urban and non-urban areas. In a statewide analysis, the urban inequality and social control perspectives would hypothesize
that the overwhelming majority of places marked by extreme levels of prison admissions should be not only in major cities, but be significantly limited to poor, segregated neighborhoods within them. I test these hypotheses by analyzing statewide prison admission data from Massachusetts.

2.1.1 The Spatial Distribution of Incarceration in Massachusetts

The incarceration rate in Massachusetts is low compared to the national average but, similar to the national trend, the rate of imprisonment has grown greatly over the last four decades. In 1978, the incarceration rate in Massachusetts was about 50 per 100,000 inhabitants. By 2012, the incarceration rate had risen to 150 per 100,000 (Bureau of Justice Statistics 2013). Despite the relatively low rate of incarceration, racial and ethnic disparities in Massachusetts are higher than the national average. In 2005, the black to white ratio of imprisonment rates in Massachusetts was 8.1 compared to a national black-white ratio of 5.6 (Bureau of Justice Statistics 2006). Massachusetts has the second highest Hispanic to white ratio of incarceration in the nation, 6.1, in comparison to a national ratio of 1.8 (Bureau of Justice Statistics 2006). The high racial disparities given the small black and Hispanic populations—6 percent and 9.6 percent respectively—are consistent with Bridges and Crutchfield’s (1988) findings that racial disparities are higher where the black population is predominantly urban and a small percentage of the total state population.

I study the spatial distribution of incarceration with data on all prison admissions to Massachusetts state prisons for 2009–2010. Figure 2.1.1 displays a
map of prison admissions counts in Massachusetts census tracts. Counts describe where the largest portions of the prison admission cohort are coming from. Admissions indeed cluster within the three largest cities: Boston, Worcester, and Springfield. These cities account for 14.5 percent of the state’s population (U.S. Bureau of the Census 2010) and 30.7 percent of the state’s prison admissions. Prison admissions also cluster along the northeastern border of Massachusetts, as well in the southeastern tracts of the state. This map describes a pattern of prison admissions within a wide range of local contexts, from large metropolitan cities, outward to suburbs and satellite cities. Moreover, it indicates the extreme spatial concentration of incarceration, where whole sections of the state contain little to no prison admissions.

How do incarceration rates vary across localities? Table 2.1.1 displays low, medium and high prison admission rates for census tracts throughout Massachusetts and the ten cities with the greatest number of prison admissions in 2009 and 2010. The admission rate is the number of people residing in a tract who were sentenced to state prison in 2009 or 2010 for a new criminal court commitment per 100,000 inhabitants. These cities account for 23 percent of the Massachusetts population but for 51 percent of prison admissions within the current study. Disaggregating further to the level of census tracts shows that neighborhoods containing just 15 percent of the state’s population account for half of all prison admissions.

Table 2.1.1 reveals high incarceration rates outside of large cities. Roughly ten
Figure 2.1.1: Prison admissions in Massachusetts census tracts, 2009–2010. Prison admissions vary from 0 to 46. Circles drawn in proportion to the number of prison admissions within each tract. Census tracts with no prison admissions for 2009–2010 have been left blank.
Table 2.1.1: Percentage distribution of prison admission rates for Massachusetts selected cities and towns, 2009–2010.

<table>
<thead>
<tr>
<th>Admission Rates (per 100,000)</th>
<th>Admission Count</th>
<th>N tracts</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–250</td>
<td>250–500</td>
<td>&gt;500</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>67.5</td>
<td>22.4</td>
</tr>
<tr>
<td>Boston</td>
<td>53.3</td>
<td>41.4</td>
</tr>
<tr>
<td>Worcester</td>
<td>35.6</td>
<td>41.9</td>
</tr>
<tr>
<td>Springfield</td>
<td>28.2</td>
<td>32.7</td>
</tr>
<tr>
<td>New Bedford</td>
<td>59.2</td>
<td>35.4</td>
</tr>
<tr>
<td>Lowell</td>
<td>79.3</td>
<td>20.7</td>
</tr>
<tr>
<td>Fall River</td>
<td>71.9</td>
<td>22.8</td>
</tr>
<tr>
<td>Lynn</td>
<td>37.7</td>
<td>43.4</td>
</tr>
<tr>
<td>Brockton</td>
<td>6.7</td>
<td>81.6</td>
</tr>
<tr>
<td>Lawrence</td>
<td>41.6</td>
<td>42.7</td>
</tr>
<tr>
<td>Haverhill</td>
<td>40.3</td>
<td>34.5</td>
</tr>
</tbody>
</table>

Note: There were 5,431 prison admissions in Massachusetts during the study period. The first three columns display the percentage distribution of tracts within each admission rate range. The fourth column is the total prison admission count for the given geographical area, and the fifth column is the number of census tracts in the geographic area.

percent of Massachusetts census tracts have a prison admission rate greater than 500 per 100,000 persons. About five percent of Boston census tracts experienced a high rate of prison admission. However, in several smaller cities, high-incarceration tracts are as prevalent, and in some cases two to four times more prevalent, than in Boston.

The cities with populations at or below 90,000 displayed in Table 2.1.1 (New Bedford, Lowell, Fall River, Lynn, Brockton, Lawrence, and Haverhill), experienced dramatic shifts in economic conditions since 1960, including rapid growth in poverty during that time period (Bacon and Chen 2013; Foreman et al. 2007). Compounding economic decline with consistently low educational attainment among residents and high rates of population turnover, these small
towns in many ways typify urban decline, and yet are geographically isolated, resource deprived, and demographically distinct from major metropolitan cities. The Massachusetts Executive Office of Housing and Economic Development named these places “gateway cities”—small to medium sized cities with lower than the state average median income and educational attainment, in an effort to draw policy attention to economic decline in these areas (Foreman et al. 2007). Note that nearly half of the state prison admissions (49 percent) came from places outside of the cities reported in Table 2.1.1. This initial descriptive account of the statewide pattern of prison admissions across a diverse set of municipalities shows the broad range of spatial contexts in which high incarceration rates may arise.

2.2 Methods and Data

To test hypotheses outlined in the social control and urban inequality perspectives, the analysis writes census tract-level prison admission rates as a function of local crime rates and other social and economic predictors. For census tract \( i \), I fit the following regression to the count of prison admissions, \( Y_i \),

\[
\log \hat{Y}_i = \log P_i + \beta_0 + \beta_1 \log \bar{y}_i + \beta_2 \log C_i + \beta_3 \log A_i + r_i' \beta_4 + e_i' \beta_5 + s_i' \beta_6,
\]

where the regression contains an offset term for the tract total population, \( P \), and thus the coefficients can be interpreted as the association of the predictors
with the log admission rate (e.g. McCullagh and Nelder 1989, p. 199). Predictors include a spatial lag, $y$, a measure of crime, $C$, a measure of arrests, $A$, a vector of race characteristics, $r$, a vector of economic characteristics, $e$, and a vector of spatial characteristics, $s$. Because prison admissions represents counts of individuals incarcerated in a given tract and are distributed with substantial over-dispersion, prison admissions were fit with negative binomial regressions (Long 1997). This over-dispersed model tends to increase standard errors as compared to the Poisson regression.

The spatial lag, $y$, records the average log admission rate in contiguous census tracts. I hypothesized that the spatial organization of formal social control, such as policing and sentencing, will induce a correlation among contiguous tracts net of other predictors. Similar to lagged dependent variables in time series analysis, the spatial lag coefficient indicates the correlation of neighboring prison admissions net of other predictors in the model.

In the urban inequality perspective, prison admissions are clustered in high-crime areas. The analysis estimates the effects of crime $C$, with two measures of violence. Detailed below, violent crime measures include data from the FBI’s Uniform Crime Reports and the National Incident-Based Reporting System. The analysis check sensitivity of estimates to alternative measures of violent crime and to different subsets of the data.

In the social control perspective, prison admissions are strongly related to a pattern of policing, beyond patterns of crime. The analysis estimates the effects of drug arrests, $A$, on rates of prison admissions, and these data were derived from
the National Incident-Based Reporting System drug offense records.

The predictors measuring economic disadvantage and racial minority concentration are motivated by prior research both in the urban inequality and social control perspectives, and test for the presence of excess punishment beyond that attributable to crime within a given neighborhood context. Measures of economic disadvantage, \( e \), include the proportion of families living below the poverty line and the proportion of adults with less than a high school education within a given tract. A set of racial, ethnic, and immigration characteristics, \( r \), allows us to understand the degree to which the presence of racial minorities and immigrants factor into the prison admission rate of a given tract. These include the proportion non-Hispanic black, Hispanic, Non-Hispanic Asian, and the proportion foreign born.

Finally, the spatial characteristics of tracts, \( s \), record two separate measures relating to urbanicity and residential instability. First, to test hypotheses relating to population turnover, I include the proportion of people in a tract who moved the year before the survey (ACS 2005–2009 estimates). Second, as derived from the theoretical discussion, the prison should draw overwhelmingly from urban tracts. The analysis includes a dummy variable to address this hypothesis, indicating which tracts fall within central cities.

Although this analysis is motivated by a causal account of the criminogenic and socioeconomic sources of incarceration, prison admissions are likely to influence the demography, economic disadvantage, and violent crime within census tracts. A causal interpretation of the regression estimates assumes that neighborhood
social conditions produce the observed spatial pattern of incarceration, but
predictors are likely to be partially endogenous to prison admission. In addition,
unobserved patterns of policing and arrests, court processing, and sentencing all
precede incarceration, each of which may be related to unobserved neighborhood
characteristics. Although much of the theoretical motivation is causal, the
regressions should thus be interpreted as describing the spatial structure of
prison admission and its relationship to crime and socioeconomic disadvantage.

Regression analysis of the spatial distribution of incarceration across urban
and non-urban places is based on a unique dataset constructed from
Massachusetts prison records. Corrections data provided by the Massachusetts
Department of Correction (DOC) include the last known street address for
anyone committed to the state prison system for a new criminal offense in 2009
and 2010 across the entire state. The corrections data required significant data
cleaning, and seven percent of the admissions address data were erroneous or
missing (426 out of 5,857 prison admission records). A portion of these missing
or incorrect addresses may be due to admitted persons who were homeless or
weakly tied to a single address; others may result from a refusal to report or data
entry error. Subtracting these missing addresses yields 5,431 persons admitted to
Massachusetts state prison in 2009 and 2010. Slightly more than one-quarter of
the sample was convicted of a drug crime as their governing offense, and 17
percent were convicted of a property crime. Over a third of the admissions were
for violent or sex offenses, and 18 percent committed some other type of crime.
Of those admitted, 70 percent were male, and 30 percent were female.² The data were geocoded using GIS software, and all results and maps reported here display the data aggregated to census tracts. For this study, the 2009 and 2010 admission cohorts are pooled to increase variation and improve precision of admission rates at the census tract level. The two-year count of adults committed to state prison forms the dependent variable for this analysis.

To estimate the relationship between crime and prison admissions, the analysis uses two sets of crime data. First, each census tract is assigned a municipal violent crime rate (complaints of violent crime per 100,000 of the resident population) from the 2008 Uniform Crime Reports (UCR).³ The UCR violent crime rate includes murder and non-negligent manslaughter, forcible rape, robbery and aggravated assault. Data are missing for 192, or 14 percent of all census tracts though the UCR data provides broadest coverage and includes all major municipalities and central cities in Massachusetts. Ideally crime would be measured at the level of the census tract, not the municipality; thus the city-level UCR crime rate measures crime in census tracts with error. On average there are 6.5 census tracts within a municipality, (SD = 14.3). Measurement error due to aggregation tends to attenuate the estimated effects, in our case—of crime.

A second measure of violent crime comes from the National Incident-Based Reporting System (NIBRS), provided by the Massachusetts State Crime Reporting Unit. As an incident-based reporting program, it includes all crimes

²The Massachusetts DOC houses women serving county sentences in state prisons, which accounts for the relatively large number of women in the study.
³This type of spatial joining is possible because all census tracts in Massachusetts fall within a municipality.
known to police agencies that participate in this data gathering effort. Because data were provided at the address level, they were geocoded to yield tract-level crime rates. To best mirror the UCR measure, the NIBRS measure includes only incidences of murder and non-negligent manslaughter, forcible rape, robbery and aggravated assault in 2008. The NIBRS crime variable is observed at the tract level for 81 percent of the state (5 percent less than the UCR coverage) but omits 252 census tracts, including all of Boston (Boston does not participate in NIBRS) and a few central cities. However, the second and third largest cities in Massachusetts are covered by the NIBRS data.

In addition to a measure of violent crime, the Massachusetts Crime Reporting Unit provided a measure of drug arrests, also at the address level, for the 302 agencies that participate in the NIBRS reporting program. These data, like the NIBRS violent crime measure, are observed at the census tract level for 81 percent of census tracts in Massachusetts, but exclude Boston.

The American Community Survey (ACS), 2005–2009, is used to measure the demographic and socioeconomic characteristics of census tracts (U.S. Bureau of the Census 2010). These data contain estimates of demographic characteristics of census tracts, which were linked to the crime and corrections data. In addition, I constructed a dummy variable indicating whether a tract fell within a “central city,” a designation of the largest places within metropolitan statistical areas by the U.S. Office of Management and Finance. This measure provides a broad definition of urbanized areas and includes Boston along with other smaller urban cities.
Table 2.2.1: Social and economic characteristics of Massachusetts census tracts used in regression analysis of prison admission rates, 2009-2010.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCR violent crime rate (per 100,000)</td>
<td>585.4</td>
<td>374.3</td>
<td>493.4</td>
</tr>
<tr>
<td>NIBRS violent crime rate (per 100,000)</td>
<td>332.0</td>
<td>152.6</td>
<td>529.8</td>
</tr>
<tr>
<td>NIBRS drug arrest rate (per 100,000)</td>
<td>293.2</td>
<td>144.5</td>
<td>555.0</td>
</tr>
<tr>
<td>Family poverty (%)</td>
<td>8.7</td>
<td>4.4</td>
<td>11.1</td>
</tr>
<tr>
<td>Adults with less than high school degree (%)</td>
<td>13.1</td>
<td>9.2</td>
<td>11.4</td>
</tr>
<tr>
<td>Foreign born (%)</td>
<td>14.7</td>
<td>11.4</td>
<td>11.5</td>
</tr>
<tr>
<td>Hispanic (%)</td>
<td>9.5</td>
<td>3.6</td>
<td>15.2</td>
</tr>
<tr>
<td>Non-Hispanic black (%)</td>
<td>6.4</td>
<td>1.9</td>
<td>12.6</td>
</tr>
<tr>
<td>Non-Hispanic Asian (%)</td>
<td>4.8</td>
<td>2.4</td>
<td>6.67</td>
</tr>
<tr>
<td>Persons moved last year (%)</td>
<td>14.6</td>
<td>12.2</td>
<td>9.35</td>
</tr>
<tr>
<td>Percentage of tracts in central city</td>
<td>36.8</td>
<td>.0</td>
<td>48.2</td>
</tr>
</tbody>
</table>

Note: Units are census tracts. \( N=1359 \).

Table 2.2.1 reports descriptive statistics of the variables used in the regression analyses of prison admission rates and describes the social and economic characteristics of Massachusetts census tracts. The average UCR violent crime rate for each municipality is 585 per 100,000 persons. The NIBRS violent crime rate in census tracts averages 332 per 100,000 persons, and the NIBRS drug arrest rate in census tracts is 293 per 100,000 inhabitants. The non-Hispanic black population averages 6.4 percent in the sample and is lower than the national percentage, which is 12.6 percent (U.S. Bureau of the Census 2010). Similarly, the average Hispanic population within census tracts is 9.5 percent, which is 6.7 percentage points less than the national average (U.S. Bureau of the Census 2010). Over a third of all tracts in the study fall within a central city.
2.3 **Regression Analysis**

Table 2.3.1 shows the results of the negative binomial regression models of prison admissions on measures of social disadvantage, racial segregation, arrests, and crime. The results of each of the four models show that socioeconomic characteristics of tracts such as poverty, low schooling among adults, and the proportion of blacks are associated with higher rates of prison admissions, net of various measures of crime. These results offer some support for the presence of excess punishment and hypotheses linking formal social control efforts to the spatial concentration of social and economic disadvantage.

In the broadest sample, Model 1 indicates the close association between incarceration, crime, race, and poverty. The crime coefficient indicates a one percent change in the log violent crime rate in a city is associated with a .07 percent increase in the expected admission rate, showing that high crime areas have higher rates of prison admission. Because crime is measured in this model at the municipal level, we interpret this finding to suggest cities and towns with the highest rates of violent crime in 2008 are predicted to produce the highest rate of prison admissions. Model 1 is the only model in which Boston tracts are present because of the city’s non-participation in the NIBRS reporting program.

Model 1 also indicates the positive association between prison admissions and racial and ethnic composition of tracts, net of other controls. The proportion of Hispanics living in a tract is positively associated with prison admissions, and this association is also significant in the full model using NIBRS violent crime data.
The data offer even stronger evidence of the link between race and incarceration. In Model 1, two hypothetical census tracts that differ by 20 percentage points in the share of the black population differ on average by 15 percent in prison admissions. The positive association between these racial characteristics of neighborhoods and imprisonment supports the social control hypothesis that the presence of racial minorities is associated with greater prison admissions, controlling for multiple measures of crime, poverty, and spatial dependence.

Beyond the patterns of crime and socioeconomic disadvantage, the results also show that imprisonment is spatially clustered. The spatial autocorrelation for Model 1 indicates a one percent increase in the log average prison admission rate of contiguous tracts is associated with a .44 percent increase in a given tract’s expected admission rate. All four models indicate significant spatial autocorrelation net of crime, socioeconomic and racial characteristics of tracts, and urbanicity. These results offer evidence for the diffusion of punishment, suggested by the urban inequality perspective, an ecological condition of social control that cannot be fully explained by the internal characteristics of a given census tract.

As expected, the models using the municipal-level measure of crime show smaller effects of crime on prison admissions than the tract level measures, likely due to the bias introduced by aggregation. Model 2 displays results using tract-level NIBRS crime data and covers 80 percent of the state, but excludes Boston and some other cities. In Model 2, using the full sample of NIBRS violent crime data at the tract level, a one percent change in log violent crime rate in a
Table 2.3.1: Negative binomial regression analysis of log prison admission rates in Massachusetts census tracts, 2009–2010.

<table>
<thead>
<tr>
<th></th>
<th>Whole Sample</th>
<th></th>
<th>UCR-NIBRS Sample</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>Log UCR crime rate</td>
<td>0.07**</td>
<td></td>
<td>0.10**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.89)</td>
<td></td>
<td>(3.27)</td>
<td></td>
</tr>
<tr>
<td>Log NIBRS crime rate</td>
<td></td>
<td>0.18***</td>
<td></td>
<td>0.16***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(6.94)</td>
<td></td>
<td>(5.65)</td>
</tr>
<tr>
<td>Log NIBRS drug arrest rate</td>
<td></td>
<td>0.04*</td>
<td>0.10***</td>
<td>0.05*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2.31)</td>
<td>(5.34)</td>
<td>(2.56)</td>
</tr>
<tr>
<td>Family poverty</td>
<td>1.16***</td>
<td>1.08**</td>
<td>1.37***</td>
<td>1.10**</td>
</tr>
<tr>
<td></td>
<td>(3.99)</td>
<td>(2.99)</td>
<td>(3.68)</td>
<td>(3.01)</td>
</tr>
<tr>
<td>Adults less than HS degree</td>
<td>1.33***</td>
<td>0.74*</td>
<td>0.76*</td>
<td>0.64†</td>
</tr>
<tr>
<td></td>
<td>(4.30)</td>
<td>(2.09)</td>
<td>(2.05)</td>
<td>(1.75)</td>
</tr>
<tr>
<td>Foreign born</td>
<td>-0.40</td>
<td>-0.39</td>
<td>-0.24</td>
<td>-0.47</td>
</tr>
<tr>
<td></td>
<td>(1.51)</td>
<td>(1.24)</td>
<td>(0.75)</td>
<td>(1.47)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.45*</td>
<td>0.44*</td>
<td>0.30</td>
<td>0.43*</td>
</tr>
<tr>
<td></td>
<td>(2.52)</td>
<td>(2.03)</td>
<td>(1.34)</td>
<td>(1.90)</td>
</tr>
<tr>
<td>Non-Hispanic black</td>
<td>0.73***</td>
<td>1.09***</td>
<td>1.11***</td>
<td>1.08***</td>
</tr>
<tr>
<td></td>
<td>(4.43)</td>
<td>(3.75)</td>
<td>(3.72)</td>
<td>(3.73)</td>
</tr>
<tr>
<td>Non-Hispanic Asian</td>
<td>0.02</td>
<td>0.13</td>
<td>0.10</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
<td>(0.31)</td>
<td>(0.22)</td>
<td>(0.44)</td>
</tr>
<tr>
<td>Persons moved last year</td>
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<td>0.22</td>
<td>0.29</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>(0.38)</td>
<td>(0.68)</td>
<td>(0.85)</td>
<td>(0.38)</td>
</tr>
<tr>
<td>Central city</td>
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<td>0.10</td>
<td>0.06</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>(0.41)</td>
<td>(1.70)</td>
<td>(0.96)</td>
<td>(1.28)</td>
</tr>
<tr>
<td>Log 𝑦</td>
<td>0.44***</td>
<td>0.34***</td>
<td>0.38***</td>
<td>0.37***</td>
</tr>
<tr>
<td></td>
<td>(15.86)</td>
<td>(11.91)</td>
<td>(12.24)</td>
<td>(12.05)</td>
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<tr>
<td>Constant</td>
<td>-9.62***</td>
<td>-10.02***</td>
<td>-10.04***</td>
<td>-9.97***</td>
</tr>
<tr>
<td></td>
<td>(63.83)</td>
<td>(79.05)</td>
<td>(56.85)</td>
<td>(73.29)</td>
</tr>
</tbody>
</table>

Note: Absolute z-statistics in parentheses. Significance codes: ***p < 0.001 **p < 0.01 *p < .05 †p < .10.
census tract is associated with a .18 percent increase in the expected rate of prison admissions, net of spatial autocorrelation in the dependent variable and other socio-economic characteristics. As in the first specification, economic disadvantage (poverty and low educational attainment) and racial minority population are significantly associated with higher prison admissions. Model 2 also examines the relationship between drug arrest rates and prison admissions—a test of the way patterns of social control influence rates of incarceration. This model shows a one percent increase in the log NIBRS drug arrest rate indicates a .04 increase in the expected prison admission rate, net of violent crime and other social and economic predictors.

To eliminate the possibility of the effects of sample differences, I report additional estimates confining the analysis to tracts in which both UCR and NIBRS data are available—about two-thirds of the state. Analyzing the joint coverage of tracts with UCR crime data (Model 3) yields a significant relationship between crime and incarceration in both models, closely resembling that of Model 1. Poverty, low education, drug arrest rates, and the black population in tracts are all positively and significantly associated with prison admissions in Models 3 and 4. There is also significant spatial autocorrelation outside of Boston, indicating that spatial concentration of prison admissions is not restricted to the large urban city in Massachusetts but all types of places in the state.

In sum, the regression results show that incarceration in a statewide context spatially concentrates in high poverty, minority tracts and within high-crime
municipalities and neighborhoods. There is substantial spatial structure in all models, net of socioeconomic characteristics, crime, urbanicity, and residential instability. Tract-level poverty and low educational attainment have a significant association with prison admissions, even after controlling for crime. Places with high crime and drug arrest rates tend to have higher prison admissions rates. The most consistent predictor of prison admissions across all four models—the proportion non-Hispanic black—shows that in all spatial contexts within a state, the presence of African Americans strongly predicts the spatial pattern of prison admissions. Finally, contrary to the urban and social control perspectives on the spatial distribution of incarceration, central cities do not have net systematically higher rates of prison admission than other areas.

2.4 Outlier Analysis: High Incarceration Rates Outside of Larger Cities

Although regression estimates show incarceration is closely associated with race and poverty, we can learn more about the utility of the theory across geographic space by studying outliers. Outlier analysis allows us to study the goodness of fit in a qualitative way. Here, I examine the regression residuals from Model 1, the model with the broadest population coverage. Figure 2.4.1 displays a plot of observed and predicted prison admission rates with each unit (census tract) indicated by circles drawn in proportion to the size of the city population in which the tract resides.
**Figure 2.4.1:** Observed prison admission rates against fitted prison admission rates from Model 1 regression results of log prison admissions in Massachusetts census tracts, 2009–2010. Circles drawn in proportion to the population size of the city where the tract resides.
The residual plot shows that tracts with the largest positive residuals (and observed admission rates) are all drawn from small cities. Notably, negative residuals, where imprisonment is over-predicted, tend to cluster in the three largest cities in Massachusetts, particularly Boston. Many of the tracts with social conditions associated with incarceration—crime, large minority populations, and poverty—have prison admission rates much lower than expected. However, if we only considered Boston tracts, this study would not observe the highest rates of incarceration in the state.⁴ From initial observations in the residual analysis, it appears “punishment’s place” is comprised of diverse settings, many of which have not been studied by researchers.

Two outlier tracts in Model 1 with large positive residuals—where the model grossly under predicts the prison admission rate—are located in regional cities (Haverhill and Fall River, populations 60,879 and 88,857) where 81 to 86 percent of the population is non-Hispanic white. In fact, the tract with the highest observed incarceration rate in the study is a 100 percent white neighborhood. The majority-white racial composition may explain why these tracts are not fit well by the model. As distant satellites to urban centers, these cities have relatively low poverty rates (between 8 and 17 percent poor families), but nevertheless sustained significant economic collapse after World War II and have since not recovered (Bacon and Chen 2013; Foreman et al. 2007). High rates of incarceration in majority white cities might be explained by recent research observing a significant rise in imprisonment for whites compared to blacks since

⁴The same outliers exist in all four models.
2000 (Mauer 2013). One potential explanation for this is the enforcement of drug laws in small towns with significant methamphetamine and opiate use (Dobkin and Nicosia 2009). Methamphetamine use and production has been found to be greatest in rural areas⁵ and small cities with high numbers of young, low-income whites (Garriott 2011; Gruenewald et al. 2010; Mauer 2013). While substantial racial disparities remain in incarceration, white towns experiencing significant poverty, low education, and drug use may be important contexts of concentrated incarceration outside of the urban core.

A group of outlier tracts within very poor small cities and suburbs (Brockton and Holyoke, populations 93,810 and 39,880) experienced significant in-migration of minorities and in particular, new immigrants of Latino and African descent. In 1980, these cities were over 90 percent non-Hispanic white; by 2010, roughly a quarter of the population of these now majority-minority cities is foreign born (U.S. Bureau of the Census 1980, 2010). These outliers suggest the significance of increasing racial and ethnic diversity of many poor neighborhoods, which is emerging as an important feature of residential space in smaller central cities, suburbs, towns, and rural areas (Alba et al. 1999; Crowder et al. 2012; Lichter et al. 2007; Marrow 2011). High rates of incarceration in these places could be understood as a punitive response to the perceived threat new minorities pose to the dominant economic and social position of whites in these small towns (see Light et al. 2014). Small cities and suburbs with a high

⁵Recent research on rural areas and mass imprisonment (Eason 2012) has shown in other states, particularly in the South, the importance of studying nonmetropolitan imprisonment rates. This analysis does not find evidence of high rates of incarceration in rural areas, which may indicate regional variation in local patterns of social control.
percentage of owner-occupied housing are more likely to introduce exclusionary immigration policies, such as deputizing local police officers to check the immigration status and initiate deportation proceedings (Walker and Leitner 2011). Rapid shifts in the ethnic and racial compositions of historically white working-class cities (Barber 2013), suggests new sites for criminalization and social conflict outside of the context of inner-city disadvantage.

2.5 Discussion

Research on the spatial pattern of incarceration has focused on poor inner-city neighborhoods, analysis has been largely descriptive, and few studies have strayed beyond case studies of large cities. A statewide analysis of the spatial distribution of prison admissions extends earlier research in three ways. First, I find evidence that prison admissions are profoundly spatially concentrated—far beyond what a single analysis of Boston neighborhoods would indicate. Ten cities account for over half of prison admissions during the study period though less than a quarter of the total state population, and the regression analyses show significant, localized spatial structure of prison admissions across Massachusetts. Indeed, over half of all prison admissions were drawn from tracts accounting for just 15 percent of the state’s population.

Second, the analysis indicates prison admissions are concentrated in communities characterized by poverty, low educational attainment among adult residents, and the presence of racial minorities, particularly blacks, even after controlling for different measures of crime, drug arrest, and spatial
autocorrelation. The main empirical expectations that incarceration clusters in poor minority communities are largely supported. Neighborhood crime and incarceration were consistently associated after controlling for arrest rates, race, socioeconomic, and spatial factors. The analysis offers strong evidence of excess punishment in which a small number of poor, minority neighborhoods experience very high rates of imprisonment across the state that are not fully explained by the level of crime.

Third, an outlier analysis provides evidence of high prison admission rates in a number of small cities and suburbs. The current theoretical model presented by urban and social control scholars does not account for patterns of incarceration in these areas, and over-predicts incarceration rates in many other areas. Smaller cities may be experiencing concentrated disadvantage like their large urban counterparts or, in some cases, experiencing entirely different social conditions, including largely white or new immigrant populations and relatively low poverty rates. By contrast, several of the largest cities in Massachusetts include areas with prison admission rates much lower than the model predicts. The outlier analysis suggests that in order to account for the highest incarceration areas in this state, which are found in spatially isolated suburbs and regional cities, a theory of the spatial context of incarceration must be broadened from one of deep inner-city poverty to one of disadvantaged urban and suburban areas.

While the results demonstrate a strong empirical association between prison admissions and neighborhood disadvantage, future research could usefully address limitations of measurement. Researchers could study intermediate stages
of criminal processing such as arraignments and sentencing that are more causally proximate to crime. The spatial pattern of offending and its relationship to neighborhood residence may also be poorly measured by census tracts. The urban focus of previous research is driven in large part by a dearth of available prison or crime data at the geographic granularity of zip codes, tracts, or neighborhoods for all jurisdictions. Making data of this sort available to researchers could greatly expand the scope of analysis in studies of place and punishment.

The current study contributes to a growing body of research that analyzes social disadvantage and social control with geographic variation, previously limited to large city case studies (Eason 2012; Marrow 2011; Murphy 2007; Murphy and Wallace 2010; Lichter et al. 2007; Sharkey 2014). Extensions of this analysis could consider the historical changes in demography, economy, and policy that might explain the emergence of high-incarceration tracts in the small cities identified as outliers. A more complete explanation of the outliers may involve detailed analysis of regional deindustrialization, the suburbanization of poverty, the availability of treatment services, and the migration of minority and highly-surveilled immigrant groups to non-urban areas. More generally, 97 percent of cities in the U.S. have a population of fewer than 50,000 residents (Brennan et al. 2005), but they have largely been absent from theory and research on urban inequality and criminal punishment.

The results of this analysis suggest mass incarceration has broad effects on community life that extend beyond poor inner-city neighborhoods of large metro
areas. If the concentration of incarceration among the most marginal members of society represents a type of social exclusion from full membership in American community life (Alexander 2010; Goffman 2014; Uggen and Manza 2002; Wacquant 2001; Weaver 2007; Western 2006), analyzing various forms of social disadvantage and formal social control entirely within metropolitan areas underestimates the inequalities associated with incarceration. An urban bias mistakenly suggests that deep social inequalities emerge only in inner cities, and that it is only within cities that incarceration has its effects. In the perspective of the current analysis, imprisonment closely follows the contours of race, poverty, and other forms of disadvantage both in large cities and in the regional towns that have become centers of regional economic decline, untreated health and social problems, and a punitive policy response.
The Ecology of Race and Punishment

Research on the neighborhood conditions of mass incarceration has identified in urban contexts the intimate link between incarceration rates and poverty-related conditions of neighborhood disadvantage (Cadora et al. 2003; Clear 2007; Sampson and Loeffler 2010; Sampson 2012; Travis et al. 2014).
Chapter 10). Although this research has been important in describing neighborhood inequality and punishment, by focusing attention on individual neighborhoods or cities, this literature presents a picture of neighborhoods or cities as isolated from each other and detached from the broader state and federal penal landscape cross-cutting them. This perspective is at odds with prominent arguments on the relationships between poverty, racial/ethnic inequality and social control, which focus on the degree of demographic concentration across different geographic segments of the United States.

One potential consequence of this limited spatial view is that we do not fully understand the degree to which pre-incarceration neighborhoods vary across racial and ethnic groups involved in the criminal justice system. In particular, we know little about how pre-incarceration neighborhoods differ for subgroups across spatial units. Despite evidence that the spatial pattern of incarceration has changed dramatically since the start of the prison boom, scholars have restricted analyses to this framework. It is possible that, by truncating the spatial distribution of incarceration, we attenuate the large gaps in neighborhood life immediately preceding a prison term.

In this analysis, I provide one of the first models of concentrated disadvantage in pre-incarceration neighborhoods for a sample of men and women admitted to state prison for a new criminal offense in 2009–2014 who, prior to their imprisonment, resided in Massachusetts. Using the entire state as the sample of neighborhoods in which an individual can be living prior to incarceration, I examine the pre-prison neighborhood environment of racial and ethnic
subgroups within the prison population. Understanding the differences in neighborhood context could influence how we understand the community-level conditions of mass incarceration.

Findings presented in this essay show that some of the most disadvantaged pre-prison neighborhoods come from places outside of Boston—the largest and most densely populated city in Massachusetts. Whites and Hispanics who enter prison from smaller city centers in Massachusetts lived in significantly more concentrated disadvantage than their counterparts in Boston. However, black men and women coming from Boston lived in the greatest concentrated disadvantage among the black admission population. Taken together, the prison population is drawn from a diverse set of communities, and the highest levels of concentrated disadvantage in the state are composed of small cities and suburban towns.

3.1 Neighborhood Disadvantage, Race and Punishment

Over the past decade, racial and ethnic disparities in imprisonment have provoked intense scholarly and policy concern. An extensive research program has uncovered the vast ways these racial disparities map onto disparities in other realms of life—from political participation (Uggen and Manza 2002) to employment (Pager 2003) to the fundamental ways we measure and understand economic and social inequality in America (Western 2006; Beckett and Western 2001). Little is known, however, about how these racial disparities relate to disparities in neighborhood context. Although it is clear that blacks reside in the
poorest neighborhoods after prison (Hipp, Turner, and Jannetta 2010; Morenoff and Harding (2014), we do not know whether these patterns reflect existing residential inequalities by race. Do inmates of different racial and ethnic groups come from starkly different neighborhood contexts?

There are several possible mechanisms to consider when thinking about why racial differences may exist in pre-prison neighborhood environment. First, conditions of neighborhood disadvantage may be more prevalent among blacks and Hispanics entering prison because of broader population dynamics of racial and ethnic disparities in place and neighborhood attainment. Racial minorities, particularly blacks but also Hispanics, are most likely to live in neighborhoods of extreme residential segregation, and these neighborhoods tend to be where prison admissions and incarceration rates are most concentrated (Sampson 2012).

Another possible explanation for the relationship between place and racial disparities in incarceration is that one’s neighborhood background may influence court decisions to incarcerate or not. An individual’s community context plays a role in sentencing outcomes independent of the characteristics of the offender. Extreme racial segregation and social isolation in urban locales profoundly impacts the spatial pattern of arrests and offending, as well as implicit biases about race and criminality (Quillian and Pager 2001; Shihadeh and Steffensmeier 1994; Sampson and Wilson 1995; Velez et al. 2003; Peterson and Krivo 2010). Sentencing research has found that neighborhood disadvantage was a strong predictor of whether or not to charge, prosecute, and imprison an individual
(Wooldredge and Thistlethwaite 2004; Wooldredge 2007, 2012). These findings provide partial explanation for racial and ethnic disparities in neighborhood context for those entering prison.

A third explanation for racial disparities in neighborhood context is the targeting of disadvantaged neighborhoods by law enforcement. The routine activities of urban drug dealing, for example, tend to occur in public, outdoor locations making arrests and drug enforcement easier than in middle class neighborhoods, suburbs, or rural areas where drug activities tend to happen indoors and away from public view (Cohen and Felson 1979; Tonry 1995, p. 105). In a study of Massachusetts prisoners incarcerated for drug crimes between 1994 and 1996, Brownsberger (2000) finds a pattern of minority neighborhood targeting for drug offenders, but the racial and ethnic disproportionalities within disadvantaged neighborhood selections are far wider than the neighborhood disproportionalities within racial/ethnic categories. We thus hypothesize that black and Hispanic men and women entering prison will come from greater neighborhood disadvantage than whites. Second, individuals sentenced for drug crimes will come from greater disadvantage than other types of offenders. Third, we hypothesize that urban blacks will come from the most disadvantage compared to blacks living outside of metro areas.

Gender and age differences in neighborhood context prior to incarceration has received limited attention. Leverentz (2014) argues that women are drawn from the same neighborhoods as male prisoners, and their lives and offending patterns are shaped by those same neighborhood dynamics. Recent research on the
neighborhood context of returning citizens finds that older incarcerated individuals come from more disadvantaged neighborhoods (see Chapter 3). This leads to the next hypothesis, *there will be no significant differences between men and women entering state prison in pre-incarceration neighborhood disadvantage, but older people entering prison will come from greater neighborhood disadvantage.*

The research question for this essay is, *how does the level of concentrated disadvantage vary by race and ethnicity for those entering prison, and how does this relate to other characteristics and spatial differences in where the neighborhood is located?* This essay presents one of the first analyses of pre-prison neighborhood context for an entire prison jurisdiction. In the following section, I describe the context of Massachusetts and a brief history of race and imprisonment in a historically progressive northern state.

### 3.2 Race, Place and Incarceration in Massachusetts

The current analysis examines individual address data on prison admissions from the Massachusetts Department of Correction. Historically, Massachusetts was a harbinger for progressive penal policy and reform. For example, the Norfolk Prison Colony, which was established in 1927, addressed overcrowding in a Boston prison, where reformers sought to apply social, medical, psychological, and educational techniques in its charter, and allowed inmates to participate democratically in policy at the prison (Rotman 1998, p. 160). The progressive nature of early Massachusetts prisons are reflected in contemporary institutions. For example, people sentenced to prison for less than three years typically serve
these sentences in a local county House of Corrections rather than state prison, and today the Massachusetts incarceration rate is less than half (about 200 per 100,000) of the national rate (492 per 100,000) (Bureau of Justice Statistics 2013).

Massachusetts’s racial disparities in minority versus white incarceration are higher than national levels. In 2005, the black to white ratio of imprisonment rates in Massachusetts was 8.1, while in the nation it was 5.6 (Bureau of Justice Statistics 2006). Massachusetts has the second highest Hispanic to white ratio of incarceration in the nation, 6.1, in comparison of a national ratio of 1.8 (Bureau of Justice Statistics 2006). If we broaden to all types of correctional facilities, while only seven percent of the Massachusetts population is non-Hispanic black, they represent about 24 percent of the incarcerated population (Prison Policy Initiative 2014). Hispanics encompass ten percent of the state’s population but 26 percent of its incarcerated population (Prison Policy Initiative 2014). While the incarceration rate in Massachusetts is low compared to the national average, the rate of imprisonment nevertheless grew considerably over the last four decades. Since the 1980s, Massachusetts has tripled its prison and jail population. Half of the increase was attributable to growth in inmates with governing offenses for drug crimes (MassINC 2015). Although racial disparities are higher where the black population is predominantly urban and a small percentage of the total state population (Bridges and Crutchfield 1988), the curious paradox of progressive penal practice and intense disproportionality across racial and ethnic groups provides an important context for understanding potential sources of
these disparities.

Another paradoxical history in Massachusetts is its opposition to school segregation in the late 19th and early 20th centuries, but the intense racial segregation and backlash against integration that ensued in the 1960s and 70s. In the summer of 1974, District Court Judge Arthur Garrity ruled that the Boston School Committee had deliberately engaged in school segregation, exposing an undercurrent of racial tension and discrimination in a city heralded for its educational and scientific excellence and cultural institutions (Formisano 1991). To achieve racial balance in the schools, Garrity ordered that students be bused to schools in surrounding neighborhoods, though focused primarily on South Boston and Roxbury, to alter the racial makeup of those schools. The conditions of segregation, income inequality, housing insecurity, and poverty persists in Boston and now, in other regions in the state (Bacon and Chen 2013).

Similarly to New York state, Massachusetts policymakers have begun to focus on smaller urban cities, which have seen a precipitous rise in poverty, crime, and unemployment in the last two decades. The Massachusetts Department of Housing and Economic Development initiated a task force called the Gateway Cities Program to address these issues befalling smaller cities in the state suffering from economic decline and depopulation. Places like Fall River in the southeastern portion of the state, or Holyoke in the west, where the median household income in 2010 hovered around $30,000, less than half of the state’s median (U.S. Bureau of the Census 2011). These areas contribute significantly to prison populations, and on average are far more disadvantaged than Boston most
neighborhoods. In many respects, Massachusetts’s penal history and urban inequality typifies northern and midwestern states (Bacon and Chen 2013; Muller 2012; Jacobs 1977; Rothman 2002).

### 3.3 Data and Methods

Data were collected on state prison admissions in Massachusetts from January 1, 2009 to December 31, 2014. The Massachusetts Department of Correction (DOC) provided intake prison record data, which includes an individual’s race, ethnicity, age, gender, and governing offense that led to this imprisonment. This analysis is restricted to anyone who was convicted of a new offense and sentenced from court to state prison. From the offense data, I coded individuals as having committed a crime against a person, as well as drug, property, sex, and other offenses.

In addition to the demographic and criminal record information, the Massachusetts DOC also collects data on an individual’s address immediately prior to this incarceration. These addresses were geocoded for the purposes of understanding the relationship between neighborhood ecology and the characteristics of the prison admission population. Six percent of individuals either did not provide an address at intake or it could not be geocoded.

Table 3.3.1 displays descriptive statistics on the characteristics of men and women who entered Massachusetts state prison to serve a criminal sentence between 2009 and 2014. In the six year period, 38 percent of admissions were non-Hispanic whites, while 27 percent were non-Hispanic black, and 30 percent
were Hispanic. About 17 percent of individuals were under the age of 24 at the time of admission, though a quarter of black admissions were of this age group. Older people entering prison tended to be white; nearly sixty percent of people admitted to prison for a new criminal offense over the age of 55 were non-Hispanic white. Over 40 percent of admissions were for violent, sex, or other crimes against persons, while a quarter were for drug crimes and 18 percent for property crimes. Forty-two percent of Hispanics admissions were for drug crimes as the governing offense, but only 9 percent of Hispanic admissions were for property crimes. Statewide, black and Hispanic men and women constituted 77 percent of prison admissions for drug offenses.

Addresses were geocoded to census tracts, which were matched to city and region-level indicators. For parsimony, I display four regions in the data: the city of Boston, Boston suburbs, urban cities outside of Boston, and other suburbs and rural towns. Greater Boston accounts for 30 percent of admissions during the six year period (2009–2014). Seventy-percent of prison admissions come from places outside of Greater Boston. Whites are overwhelming coming from places outside of the city of Boston–91 percent of white admissions came from outside the city. This is quite the opposite for blacks admitted to prison: over a third came from Boston census tracts. Nearly 80 percent of Hispanic men and women entering prison came from neighborhoods and towns outside of Boston.

Data were also collected on neighborhood characteristics from the American Community Survey five year estimates (2006–2010). For this analysis, I focus on five conditions that, taken together at high rates, would be defined as
Table 3.3.1: Descriptive statistics of person observations by race and ethnicity for all prison admissions, 2009–2014

<table>
<thead>
<tr>
<th></th>
<th>All Admissions</th>
<th>White</th>
<th>Black</th>
<th>Hispanic</th>
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<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Concentrated Disadvantage</td>
<td>.89</td>
<td>1.26</td>
<td>.28</td>
<td>.99</td>
</tr>
<tr>
<td>prop. children in poverty</td>
<td>.29</td>
<td>.21</td>
<td>.20</td>
<td>.19</td>
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<tr>
<td>prop. unemployed</td>
<td>.13</td>
<td>.07</td>
<td>.11</td>
<td>.05</td>
</tr>
<tr>
<td>prop. female-headed families</td>
<td>.20</td>
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<td>prop. adults less than HS degree</td>
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<td>.13</td>
<td>.15</td>
<td>.11</td>
</tr>
<tr>
<td>prop. households on public</td>
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<td>.13</td>
<td>.11</td>
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<td>20 years old or younger</td>
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<td>.11</td>
<td>.01</td>
<td>.07</td>
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<td>20 to 24 years old</td>
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<td>.37</td>
<td>.12</td>
<td>.33</td>
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<td>.25</td>
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<tr>
<td>Boston</td>
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<td>.09</td>
<td>.28</td>
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<td>Suburbs and Rural Towns</td>
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<td>5,486</td>
<td>3,878</td>
<td>4,228</td>
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</table>

Note: SD is standard deviation. 267 admissions were of individuals identified as Asian/Pacific Islander or some other race or ethnicity, and for 460 people, no race or ethnicity was recorded.
concentrated disadvantage (Sampson 2012; Sampson, Raudenbush, and Earls 1997). These measures include the proportion of children living in poverty, the proportion of individuals age 16 and over who are unemployed, the proportion of female-headed family households, the proportion of individuals over the age of 25 without a high school degree, and the proportion of households receiving cash public assistance, food stamps, or assistance from the Supplemental Nutrition Assistance Program (SNAP).

Table 3.3.1 displays these measures for the sample and across subgroups. For all entering Massachusetts state prison, the average neighborhood experiences a 30 percent rate of children living in poverty, 13 percent of adults unemployed, and one-fifth of households on public assistance and female-headed. Additionally, 20 percent of adults have less than a high school degree. In other words, beyond subgroup delineation, the prison population is coming from disadvantaged areas—the highest portions of the distribution for the state.

Significant racial and ethnic disparities exist even within this population. Whites admitted to prison tend to come from less impoverished areas than their black and Latino counterparts. The average neighborhood a Hispanic person comes from when entering prison has a child poverty rate of nearly 40 percent, while non-Hispanic whites experience about half this level.

In order to study neighborhood differences in poverty and socio-economic disadvantage, the five measures reported in Table 3.3.1 were used to create a measure of concentrated disadvantage. Consistent with prior research, these poverty-related variables are highly correlated and load on the same factor (see
Table 3.3.2: Orthogonal rotated factor pattern of concentrated disadvantage in 1,476 Massachusetts census tracts

<table>
<thead>
<tr>
<th>Variable</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>children in poverty</td>
<td>0.81</td>
</tr>
<tr>
<td>adults unemployed</td>
<td>0.75</td>
</tr>
<tr>
<td>female-headed families</td>
<td>0.87</td>
</tr>
<tr>
<td>adults less than HS degree</td>
<td>0.81</td>
</tr>
<tr>
<td>households on public assistance</td>
<td>0.95</td>
</tr>
</tbody>
</table>

Note: Reported loadings ≥ 0.60. Data are from the 2006–2010 American Community Survey.

Table 3.3.2). With an eigenvalue greater than 3, the first factor is dominated by high loadings (>0.80) for child poverty, female-headed households, low educational attainment, and public assistance income. I calculate a factor regression score that weights each variable by its factor loading, and joined this measure to the associated census tract from a given individual’s prison record geocoded address. This value, the regression factor score of concentrated disadvantage, is the dependent variable of the analysis to follow.

Figure 3.3.1 displays a map of this factor regression score in terciles. The lowest tercile of disadvantage tends to concentrate in suburban and rural towns between large population centers. Inner-ring suburbs tend to contain census tracts at the median of the range of concentrated disadvantage, and Boston and other urban areas compose the largest portion of tracts with the greatest concentrated disadvantage.

Figure 3.3.2 provides a graphical display of the distribution of the factor regression score of concentrated disadvantage but also demonstrates this
Figure 3.3.1: Concentrated disadvantage terciles in Massachusetts census tracts. Data are from the 2006–2010 American Community Survey.

distribution by race and ethnicity. The gray area represents the distribution for all Massachusetts census tracts. For the most part, non-Hispanic white men and women entering prison during this time period have a somewhat similar distribution of concentrated disadvantage to that of the entire state. Black and Hispanic people entering prison have entirely different distributions than whites, and Hispanics tend to have the greatest number of tracts at the highest end of the distribution.

To provide more detail derived from Figure 3.3.2, I study what portion of prison admissions came from the top quartile of tract-level concentrated disadvantage in the state of Massachusetts. The density plot in Figure 3.3.2 can be summarized in the following way: 72.4 percent of non-Hispanic blacks and 77.1
Figure 3.3.2: Densities of concentrated disadvantage by race and ethnicity.
percent of Hispanics entering prison came from the top quartile (75th percentile or higher) of concentrated disadvantage in Massachusetts. Slightly more than one-third (37 percent) of whites entering prison came from such a level of concentrated disadvantage.

To understand how prisoner demographics and spatial conditions predict pre-incarceration neighborhood disadvantage, I fit a linear model to the factor regression score of neighborhood disadvantage, where \( Y_i \),

\[
\hat{Y}_i = \beta_0 + d_i' \beta_i + \beta_z O_i + \beta_R R_i,
\]

where \( d \) is a vector of person-level demographics, \( O \) is a set of categorical variables defining the governing offense, and \( R \) is a set of categorical variables indicating the region in which the individual resided prior to incarceration. In the presence of heteroscedasticity in a large sample, a sensible way to estimate variance in the linear coefficient estimates is to use sandwich estimator. For the models reported in the results, I include standard errors estimated using sandwich estimates (Long 2000).

Because it is hypothesized that there are significantly different dynamics of neighborhood disadvantage for those entering prison by race, I will estimate four models: a full model where race and ethnicity are included, and three models stratified by race and ethnicity.

This paper is motivated by an interest in understanding the clustering of poverty-related neighborhood disadvantages for those entering prison for a state criminal offense. An explicitly causal interpretation of these results would not be
possible; in the current framework I cannot identify any sorting mechanisms producing incarceration in some places and not others. The main goal is to understand and describe the pre-incarceration neighborhood, and identify important associations and clusters in the sample of prison admissions. Understanding the selection into incarceration from disadvantaged neighborhoods would require additional data on individuals who were not incarcerated for similar crimes, for example. This remains outside of the current analysis.

3.4 Results

Table 3.4.1 reports the results from OLS regression analyses of concentrated disadvantage in a sample of prison admissions in Massachusetts, 2009–2014. Four models are included. The first model includes the entire sample of men and women who entered prison during this time period to serve a state criminal sentence. The second model restricts the sample to non-Hispanic whites, the second model restricts the sample to non-Hispanic blacks, and Model 4 restricts the sample to Hispanics.

In Model 1, we examine how black and Hispanic people entering prison compare to whites in terms of pre-incarceration neighborhood disadvantage. As our hypotheses suggested, black and Hispanic men and women were more likely than their white counterparts to come from neighborhoods of higher levels of concentrated disadvantage. Age was negatively associated with pre-incarceration
Table 3.4.1: Regression analysis of concentrated disadvantage in prison admission population, 2009–2014

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Neighborhood Disadvantage</th>
<th>All</th>
<th>White</th>
<th>Black</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td>-0.058</td>
<td>-0.071</td>
<td>-0.186</td>
<td>0.254</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.044)</td>
<td>(0.059)</td>
<td>(0.116)</td>
<td>(0.156)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>-0.009</td>
<td>0.005</td>
<td>-0.004</td>
<td>-0.031</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.005)</td>
<td>(0.005)</td>
<td>(0.009)</td>
<td>(0.014)</td>
</tr>
<tr>
<td>Age²</td>
<td></td>
<td>0.0001</td>
<td>-0.0001</td>
<td>-0.0002</td>
<td>0.0003</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0001)</td>
<td>(0.0001)</td>
<td>(0.0001)</td>
<td>(0.0001)</td>
</tr>
<tr>
<td>Drug offense</td>
<td></td>
<td>0.097</td>
<td>0.083</td>
<td>0.038</td>
<td>0.212</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.024)</td>
<td>(0.037)</td>
<td>(0.038)</td>
<td>(0.048)</td>
</tr>
<tr>
<td>Property offense</td>
<td></td>
<td>0.045</td>
<td>-0.004</td>
<td>-0.033</td>
<td>0.315</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.029)</td>
<td>(0.032)</td>
<td>(0.072)</td>
<td>(0.077)</td>
</tr>
<tr>
<td>Other offense</td>
<td></td>
<td>0.126</td>
<td>0.015</td>
<td>0.065</td>
<td>0.297</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.031)</td>
<td>(0.047)</td>
<td>(0.043)</td>
<td>(0.077)</td>
</tr>
<tr>
<td>Boston suburbs</td>
<td></td>
<td>-0.882</td>
<td>-0.453</td>
<td>-1.439</td>
<td>-0.667</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.028)</td>
<td>(0.049)</td>
<td>(0.038)</td>
<td>(0.067)</td>
</tr>
<tr>
<td>Urban cities</td>
<td></td>
<td>0.277</td>
<td>0.573</td>
<td>0.029</td>
<td>0.584</td>
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<tr>
<td></td>
<td></td>
<td>(0.026)</td>
<td>(0.052)</td>
<td>(0.038)</td>
<td>(0.051)</td>
</tr>
<tr>
<td>Suburbs and rural towns</td>
<td></td>
<td>-0.687</td>
<td>-0.563</td>
<td>-1.144</td>
<td>0.061</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.030)</td>
<td>(0.048)</td>
<td>(0.049)</td>
<td>(0.075)</td>
</tr>
<tr>
<td>Non-Hispanic black</td>
<td></td>
<td>0.568</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.023)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td></td>
<td>0.851</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.027)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic other race</td>
<td></td>
<td>0.336</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.060)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>0.914</td>
<td>0.430</td>
<td>1.770</td>
<td>1.449</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.104)</td>
<td>(0.131)</td>
<td>(0.199)</td>
<td>(0.310)</td>
</tr>
<tr>
<td>Observations</td>
<td></td>
<td>13,820</td>
<td>5,478</td>
<td>3,867</td>
<td>4,210</td>
</tr>
<tr>
<td>R²</td>
<td></td>
<td>0.30</td>
<td>0.27</td>
<td>0.26</td>
<td>0.29</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td></td>
<td>0.30</td>
<td>0.27</td>
<td>0.26</td>
<td>0.28</td>
</tr>
</tbody>
</table>

Note: *p<0.1; **p<0.05; ***p<0.01

Sandwich estimate standard errors in parentheses.
neighborhood disadvantage in the full model.

With crimes against persons as the reference category for offense type, in the full model, individuals convicted of drug crimes or other crimes as their governing offense were more likely than violent offenders to come from concentrated disadvantage. The modal offenses categorized as “other” were related to gun possession and prostitution. Men were not significantly more or less likely than women to come from concentrated disadvantage.

In reference to Boston, suburbs in the Greater Boston area, as well as suburbs and rural towns outside of the Boston area, were less associated with admissions from neighborhoods of concentrated disadvantage. However, individuals who came from urban cities outside of Boston had higher levels of concentrated disadvantage than their Boston counterparts.

Next, Model 2 restricts the analysis to non-Hispanic white men and women admitted to state prison for a criminal sentence. In this model, white women were significantly more likely to come from neighborhoods of concentrated disadvantage than white men, and this is the only model where we see this significant relationship. This finding is significant given a recent finding that between 2000 and 2009, white women nationally saw a 47 percent increase in their incarceration rate, compared to a 8.5 percent increase among white men and a 31 percent decrease among black women (Mauer 2013). Mauer finds that, for white women, almost half of the increase in incarceration is a function of an increased number of property offenders, with the remainder of the increase divided between incarceration for violent and drug offenses (Mauer 2013, p. 13).
Model 2 indicates that whites drug offenders were more likely to come from concentrated disadvantage as compared to those convicted of violent offenses. Similarly to Model 1, whites who came from smaller urban cities in Massachusetts came from higher levels of concentrated disadvantage than whites in Boston.

Model 3 is restricted to non-Hispanic black admissions. For this model, blacks are significantly more likely to enter prison having lived in the greatest concentrated disadvantage having previously lived in Boston rather than any other region in the state. This provides support for our hypothesis that large urban cities are still the locus for black incarceration.

Finally, Model 4 is restricted to Hispanic admissions. In this model, older age is significantly related to a pre-prison neighborhood of concentrated disadvantage. All non-violent offenses, including drug, property, and other crimes, indicate a significant relationship to neighborhood disadvantage as compared to violent offenses. Similarly to whites entering prison, Hispanics coming from urban cities outside of Boston tended to come from neighborhoods of greater concentrated disadvantage than those that came from Boston.

Figure 3.4.1 displays a simple bivariate generalized additive model of neighborhood disadvantage and age by racial and ethnic groups. The most striking part of of this graph is the difference in intercept. At no point throughout the age distribution do whites ever experience the same level of disadvantage as black or Hispanic people entering prison. This is an indication of fundamentally different social worlds for these subgroups. Interestingly, Hispanics have higher levels of concentrated disadvantage than blacks throughout the vast majority of
Figure 3.4.1: Generalized additive model plot of neighborhood disadvantage and age by race.
the life course in the full state sample.

Figure 3.4.2 displays this same model presented in Figure 3.4.1, except it is restricted to Boston census tracts only. Here we see the attenuating effects of racial disparities within this truncated spatial distribution. In this case, the disparities in racial and ethnic pre-prison neighborhood disadvantage are attenuated by only considering Boston tracts. Furthermore, Hispanics experience less disadvantage in Boston.

In sum, there are significant racial disparities in pre-incarceration context. Our hypothesis about men and women coming from equally disadvantaged places was confirmed, except for the case of whites, where a slight difference indicated white women were actually drawn from more disadvantaged neighborhoods than white males. Whites and Hispanics who lived in urban cities outside of Boston tend to come from greater disadvantage than their Boston counterparts, but the same is not true for non-Hispanic blacks. Hispanic admissions for drug and property crimes were particularly concentrated in areas of disadvantage compared to Hispanic violent offenders. Indeed, including all individuals in this analysis uncovers the greatest divides in the disparities in neighborhood context.

3.5 Discussion

The goal of this essay is to take a demographic approach to understanding the pre-prison neighborhood context for those sentenced to state prison. Without restricting the analysis spatially, several findings arise. First, racial differences in
Figure 3.4.2: Generalized additive model plot of neighborhood disadvantage and age by race in Boston neighborhoods only.
neighborhood context are profound, shown most dramatically in a statewide context. Although a large portion of whites come from disadvantaged urban areas, they nevertheless come from entirely different neighborhoods than blacks or Hispanics. Roughly three-quarters of the black and Hispanic prison admission cohort came from the 75th percentile or higher of concentrated disadvantage in Massachusetts, whereas only 37 percent of whites did.

Second, important differences within racial groups shed light on the varied relationship that space has to punishment. For whites, women are particularly disadvantaged prior to incarceration. For blacks Bostonians, the conditions of neighborhood disadvantage are far worse than for blacks come from outside the city. Hispanics who are sentenced for drug and property crimes in urban and suburban areas outside of Boston have some of the greatest neighborhood disadvantage in the sample.

Understanding the differences in neighborhood context for people entering prison has a variety of implications for how we understand social inequality broadly and how we may wish to respond to the crisis of concentrated disadvantage and its intimate link with patterns of social control. In a progressive state like Massachusetts, racial disparities in incarceration are particularly high, and it is possible that deep social inequality in neighborhood life may be partially to blame for these disparities. Future research should consider just how great the disproportionality in incarceration is due to the conditions of neighborhoods prior to incarceration. Indeed, if a large portion of individuals return to communities after a period of incarceration (as the average length of stay in
Massachusetts is about five years), it is reasonable to assume that a significant portion will return to these same disadvantaged neighborhoods. This is not to limit our discussion of policy implications to the need to respond to the crisis of recidivism caused by these neighborhood contexts. Rather, it implies a deeply divided social world in which a pattern of offending, arrest, incarceration and reentry has become cyclical—these individuals are embedded in a social fabric of poverty and inequality. Whites may have greater opportunities to avoid negative neighborhoods than blacks or Hispanics who are returning to areas of severe socio-economic disadvantage.

One limitation of this analysis is it doesn’t take into consideration rates of violence across neighborhoods of the offending population entering prison. The reason for this is difficulty of measurement—there is no statewide measure of violent crime at the tract level collected by any agency for Massachusetts available to researchers. In such an analysis, I would hypothesize that the differences across racial groups would be even more stark for rates of violence than for neighborhood disadvantage. Similar models to those reported here regressed the prison admission rate on levels of segregation using the same set of covariates and the outcomes were quite similar.

This paper offers one of the first statewide analyses of pre-prison neighborhood context for people entering state prison. From an evaluation of over 13,000 prison admission records over the span of six years, this paper concludes that significant racial disparities exist in pre-prison environment, and this does not seem to be fully explained by the broader distribution of race and
poverty in the state. However, the spatial disparities seem to be less powerful in determining concentrated disadvantage than the differences between racial groups, beyond space. Indeed, racial disparities are resilient across spatial units, but how and to what degree disadvantage is experienced comes into focus from using a spatial lens.
Neighborhood Attainment After Prison

In an era of mass incarceration and the persistence of racial inequality, neighborhoods are implicated in the transmission of deep social inequality. While segregation, poverty, and other social dislocations have been widely understood to take on significant spatial structure within neighborhoods
of urban disadvantage, no marker of social disadvantage spatially patterns at such extreme levels as incarceration (Clear 2007; Spatial Information Design Lab 2007; Sampson 2012). Several scholars contend that “concentrated incarceration”—be it prison admissions or releases—poses significant challenges to residential stability, trust in the law, social cohesion, and indeed, recidivism among those formerly incarcerated (Kubrin and Stewart 2006; Clear 2007; Chamberlain and Wallace 2015).

Place is inherited, much like social class, and one’s surrounding community is thought to be highly influential over a variety of individual life chances. Nevertheless, neighborhoods are spatial contexts to which people are socially connected and derive support and resources. Imprisonment is a fundamentally segregative experience that removes individuals from those places. When a period of incarceration ends, former prisoners must reimagine their relationships to neighborhoods and communities, often weighing the implications of returning to former neighborhoods or entering new ones. For many who only have transitional or emergency housing available to them, neighborhood attainment hardly involves a choice, but is rather determined by the locations of housing programs throughout the city. Furthermore, it is not clear whether moving away from former neighborhoods or returning to a familiar community—often where family and friends live—presents a greater challenge to stable return from prison. Indeed, many within the Boston Reentry Study were faced with a myriad of unique limitations and choices that governed their decision to move to a particular neighborhood.
How individuals become neighborhood residents after a period of incarceration is not well understood. A focus in prior literature on aggregate prisoner reentry data obscures the varied experience of returning from prison to neighborhoods, and in particular, the ways households, relationships, employment and other individual characteristics influence neighborhood attainment. It is often reported that prisoner reentry is highly spatially patterned, but this paper demonstrates why this neighborhood concentration takes place, and what mechanisms produce disparities in neighborhood neighborhood attainment for a variety of subgroups within a release cohort.

Using data from a longitudinal survey of 122 men and women released from state prison to the Boston area, this essay presents three key findings. First, in a representative sample of 122 people returning from prison, neighborhood residence is highly spatially concentrated. Forty percent of respondents in the study moved to one of two neighborhoods in Boston upon their initial departure from prison. Second, holding constant respondents’ pre-prison level of neighborhood disadvantage, black and Hispanic respondents were significantly more likely to return to severely disadvantaged neighborhoods than their white counterparts. Third, living in non-traditional households and group quarters significantly increased the chance of living in highly disadvantaged neighborhoods than those who obtained their own housing, but important patterns in the data, such as returning to or moving away from former neighborhoods, show complex relationships between neighborhood attainment and these household dynamics.
4.1 Neighborhood Attainment and Prisoner Reentry

In 2014, 636,346 people were released to communities from federal and state prison (Bureau of Justice Statistics 2015). High rates of prison release, now contributing to a steady decline in the total U.S. prison population, compels a deeper examination of the subsequent transition from prison. Individuals leaving prison experience significant obstacles to finding gainful employment or a means of subsistence (Pager 2003; Western et al. 2015) and securing safe and stable housing (Richie 2001; Roman and Travis 2006; Huebner and Pleggenkuhle 2013; Sirois 2015). While the stratifying effects of incarceration have been extensively examined, how a prison stay—and the length of that stay—impacts the types of communities and neighborhoods former prisoners reside in has received far less attention, save a small number of recent studies (Clear 2007; Kirk 2009; Hipp et al. 2010; Massoglia et al. 2012). Scholarly interest in the consequences of mass incarceration for communities has grown considerably in the last decade, with an increased focus on research on prisoner reentry, residential mobility, and neighborhood context (Visher and Travis 2003; Morenoff and Harding 2014; Travis et al. 2014, Chapter 10). A small number of poor urban communities experience an intense churning of men and women in and out of prison (LaVigne and Parthasarathy 2005; Clear 2007). Studies have found that returning to disadvantaged neighborhood contexts increases the probability of reoffending (Kubrin and Stewart 2006; Mears et al. 2008; Makarios et al. 2010; Hipp et al. 2010; Chamberlain and Wallace 2015).
The sorting of individuals into neighborhoods is a fundamental part of the dynamics of social inequality. For this analysis, I use the term “neighborhood attainment,” following Sampson and Sharkey’s (2008) extension of the locational attainment model (Alba et al. 1993). A longstanding research program seeks to understand the process of neighborhood sorting and residential mobility as a key mechanism perpetuating racial disparities in life chances (Logan et al. 1996; Charles 2003; Bruch and Mare 2006; Crowder et al. 2012; Sampson 2012; Sharkey 2013). Racial disparities are a defining feature of the American system of incarceration, but how do the disparities of incarceration map onto neighborhood life, particularly after a period of incarceration ends? Massoglia et al. (2012) found that the effect of incarceration on neighborhood attainment was strongest for whites after controlling for pre-prison neighborhood context, largely because because blacks and Latinos already lived in concentrated disadvantage prior to incarceration. From this important study, one of the first of its kind, I derive the first hypothesis: racial and ethnic disparities in neighborhood attainment exist but will be largely explained by differences in prior neighborhood contexts.

A key part of neighborhood attainment is one’s relationship to former neighborhood contexts prior to incarceration. On one hand, residential instability negatively affects individual outcomes and increases potential risk for crime and delinquency (Haney and South 2005), but on the other hand, if individuals remain in extremely distressed neighborhoods, “stickiness” may be more damaging than instability for individuals and communities (Sharkey and Sampson 2010; Sharkey 2013). Through a natural experiment, Kirk (2009) finds
that moving away from former geographic areas significantly reduces a parolee’s likelihood of reincarceration. One study uses parole records to examine the neighborhood trajectories of individuals leaving prison in Michigan (Harding et al. 2013), finding low returns to pre-prison neighborhoods. A feature of the data is the ability to test whether individuals who move away or return to former neighborhoods have different neighborhood outcomes. The current analysis will seek to understand the relationship between pre-prison environment and neighborhood attainment after leaving prison generally. This leads to our second hypothesis: “returners,” or those that move back to the neighborhood they were living in immediately prior to arrest, will move to more disadvantaged neighborhoods than those who move away.

Thinking more analytically about why someone would move away versus return to former neighborhoods leads to another important mechanism of neighborhood attainment: household and living conditions. Observational studies have shown that housing insecurity is among the foremost obstacles to successful integration for individuals leaving prison, and significant variation by race and age exist in these patterns (Richie 2001; Metraux and Culhane 2004; LaVigne and Parthasarathy 2005; Roman and Travis 2006; Visher and Courtney 2007; Leverentz 2014). Sirois (2015) finds that living in a stable household with working household members just after prison release is associated with reduced risks of arrest and unemployment six to 12 months later. However, access to specific types of housing may ensure greater neighborhood disadvantage. From this, I propose the following hypothesis: individuals who live in non-traditional
households and group quarters will live in greater concentrated disadvantage than their counterparts.

Deep marginalization may affect neighborhood attainment. Western et al. (2015) find that older respondents, particularly those with histories of mental illness and addiction, were the least socially integrated, the least connected to family, and the most likely to struggle with finding a means of subsistence. I hypothesize that: **having a history of employment and working after release will improve neighborhood attainment outcomes, but older respondents will be more likely to enter highly disadvantaged areas.**

Finally, length of time spent in prison may explain disparities in neighborhood attainment. It is plausible that individuals serving longer prison sentences will face greater stigmatization (Pager 2003) or have deepened their detachment with social and economic institutions (Western 2006) and thus have limited options for neighborhoods. Hipp et al. (2010) find modest effects of time served on neighborhood outcomes, but find no evidence that the seriousness of a previous crime (i.e. violent versus property) impacts neighborhood attainment. Thus, I hypothesis: **individuals who spent more time in prison will be more likely to enter neighborhoods with more concentrated disadvantage.**

### 4.2 Mechanisms of Reentry Neighborhood Concentration

Several scholars note that prisoner reentry spatially concentrates in poor and disadvantaged neighborhoods. But how is the neighborhood choice set determined? In the Boston Reentry Study, respondents returned home to a very
few number of neighborhoods. Figure 4.2.1 displays a map of Boston neighborhoods. Each neighborhood is shaded to indicate the number of respondents who returned to that neighborhood one week after release from Massachusetts state prison.¹

One week after release from prison, about 40 percent of respondents moved to Roxbury or Dorchester, the two neighborhoods with the darkest shading on the map. These areas are historical in Boston's enduring neighborhood inequality and high levels of racial segregation. Beginning in the 1950s, large portions of these neighborhoods were redlined by banks, government mortgage programs, and insurance companies, propelling white flight and economic decline (Medoff and Sklar 1994). As two of Boston's most impoverished and segregated neighborhoods, these two areas account for over a third of the total Boston population living in poverty, but only about a quarter of city's residents (Boston Redevelopment Authority 2014). Looking specifically at children in poverty, Roxbury and Dorchester's child residents account for 51 percent of children living in poverty in the city, but about a third of the population under 18 (Boston Redevelopment Authority 2014).

From studying the neighborhood and housing data collected by the Boston Reentry Study, I identify two key mechanisms producing this concentration. First, Boston's significantly high rate of segregation likely produces intense differences in neighborhood attainment across racial and ethnic groups leaving

¹Sixteen respondents (13%) moved to areas outside of the city of Boston one week after release. One respondent was living in jail by the first interview.
Figure 4.2.1: Neighborhoods of Boston Reentry Study respondents during the first week out. Two neighborhoods account for nearly 40 percent of respondent neighborhoods.
prison. Of the 47 people returning to the two Boston neighborhoods of Roxbury and Dorchester, 85 percent are non-white.

Second, the type of housing one accesses will significantly determine the neighborhood attainment. If you are accessing housing through family or friends, this may mean that you are living in residential settings in disadvantaged areas—likely ones a respondent have previously lived in. If you are moving into group quarters, you are not really engaging in neighborhood choice, but neighborhood attainment is structured by the availability of such housing throughout the city. Living in two forms of disadvantaged households—non-traditional households and group quarters housing—should lead to disadvantaged neighborhood attainment compared to those able to obtain other housing.

People involved in the criminal justice system experience unique and significant constraints on neighborhood attainment. For many, public housing is inaccessible, depleted kin and family ties limit immediate housing options, and overcrowded institutional settings such as shelters and treatment centers leave many with few options for residence. Up to this point, I have only discussed the patterns of neighborhood attainment for those actually in living within a neighborhood context. A nontrivial number of BRS participants did not move into neighborhoods, or failed to have enough of a relationship to a single residence or non-institutionalized setting to establish neighborhood ties of any kind. This particular trajectory—non-neighborhood attainment—will be discussed as an important part of the disparities experienced by the returning
population. This is motivated by a need to understand the highly marginalized subset of the poor who lack social integration and have a limited relationship to place—a set of often unspecified conditions we must account for to estimate neighborhood attainment, and more broadly, social inequality. For those that lack consistent exposure to neighborhoods, how might we estimate neighborhood attainment? An important task for criminal justice scholars and policymakers is to include the most marginalized individuals—the invisible and difficult to identify residentially (Beckett and Western 2001; Pettit 2012)—as an integral part of a study of neighborhood quality. This is the task of the current analysis.

4.3 Data and Methods

To study residential and neighborhood attainment in the period immediately after leaving prison, I analyze data from the Boston Reentry Study (BRS). The study is a longitudinal data collection of a sample of 122 men and women who were incarcerated in Massachusetts state prison and planned to return to the Boston area (Western et al. 2015). Through a series of in-depth survey interviews over a period of 12 months, the study collects information on the employment, housing, kin, and health—among other topics—of men and women recently released from Massachusetts prisons. These data provide information on the structure and dynamics of respondents’ households, housing type, housing tenure, and participation in temporary or transitional residential programs. In addition, we collected the address of each respondent, when available, at each wave. These longitudinal address data were geocoded using GIS software and
spatially matched to census tracts. I constructed a panel, which includes pre-prison addresses and the address reported at each interview wave.

While previous studies such as The Urban Institute’s *Returning Home* project have significantly contributed to our understanding of neighborhood attainment and residential mobility, many surveys suffered significant attrition (LaVigne and Parthasarathy 2005; Visher and Courtney 2007). The BRS adopted several innovative strategies to minimize study attrition given the challenge of maintaining contact with such a highly marginalized population. For each wave of the BRS, the response rate exceeds 90 percent. Respondents participate in a baseline interview conducted one week before leaving prison, and then one week after release, and then at two months, six months, and one year for a total of five interviews. For many respondents, a proxy interview with a family member was conducted. For a complete discussion of the sampling strategy and methodology for the Boston Reentry Study, see Western et al. (2014). Despite the high rate of study participation, it was not always possible to record an address during an interview. About 16 percent of respondents did not have any address (even an institutional one) at some point during the survey period. While some lived unhoused either on the streets or among several different households, others returned to jail or prison by the exit interview.

To obtain information about the neighborhood context of respondents immediately prior to their most period of incarceration, the BRS data was matched to records collected by the Massachusetts DOC at prison intake, which included their “last known address.” Based on the year of admission, this address
was spatially matched with the appropriate census data. Two respondents did not have a pre-prison address recorded in their Department of Correction intake data.

For the demographic and socioeconomic characteristics of census tracts before and after prison release, this study uses the 2007–2011 American Community Survey (ACS) (U.S. Bureau of the Census 2012). While the vast majority entered prison between 2007 and 2011, four study participants entered prison prior to 2005. For their pre-prison neighborhood, census tract data from the Geolytics Neighborhood Change Database were linked to their address at admission to prison. These data contain estimates of demographic and economic characteristics of census tracts, which were linked to the BRS survey and corrections data. Four neighborhood conditions were used to study disadvantage within neighborhoods: child poverty,² unemployment, female-headed households, and households receiving public assistance income.

Descriptive statistics for all measures used to create the dependent variable are reported in Table 4.3.1. To study the socio-economic conditions in neighborhoods from ACS data, I calculated an index of neighborhood disadvantage by averaging the Z-score of each respondent’s tract proportion of children living in poverty, proportion households with public assistance income, proportion of population over 16 unemployed, and proportion female-headed families. Figure 4.3.1 describes the distributions of these four neighborhood characteristics against a backdrop of the overall distribution of each in Greater Boston.

²Because of the large student population in Boston, using a measure of poverty that excludes
Figure 4.3.1: Distributions of neighborhood disadvantage. Dashed lines indicate the distribution of the average neighborhood disadvantage across all waves of the Boston Reentry Study. Solid lines represent the distribution of neighborhood disadvantage for all Greater Boston residents.
The neighborhoods BRS respondents returned to are more disadvantaged than the average Greater Boston tract. The average rate of child poverty in the BRS sample neighborhoods is 30 percent, whereas the mean child poverty rate is 15 percent in Greater Boston and 7.6 percent in the state (U.S. Bureau of the Census 2012). In general, BRS respondents returned to neighborhoods with twice as many female-headed families, households receiving public assistance income, and twice the unemployment rate of Greater Boston. On average, a respondent’s neighborhood after prison was 31 percent non-Hispanic black, compared to the Massachusetts state average of 6.6 percent and 13 percent in Greater Boston. The summary statistics in Table 4.3.1 show there are significant differences by race and ethnicity. Black and Hispanic respondents have higher levels of neighborhood disadvantage compared to whites.

Table 4.3.1 also displays summary statistics for the independent variables. Models include the following independent variables: (1) respondent demographics including race, ethnicity and age; (2) household variables indicating if a respondent lives in a non-traditional household or in group quarters; (3) employment status during the interview period and prior to the most recent incarceration; (4) pre-prison neighborhood indicators, including the level of neighborhood disadvantage before the most recent prison stay, and a dummy variable for whether or not the respondent returned to the same neighborhood they reported living in prior to this prison stay.

The respondents are representative of the Massachusetts Department of college-aged residents provides a more accurate account of neighborhood disadvantage.
Table 4.3.1: Descriptive statistics of person observations by race and ethnicity

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Full Sample</th>
<th>Whites</th>
<th>Blacks</th>
<th>Hispanics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
</tbody>
</table>
| Neighborhood
disadvantage (z-scores) | .09   | .79   | -.35  | .62   | .31   | .78   | .21   | .80   |
| prop. children in poverty | .30   | .21   | .23   | .20   | .32   | .20   | .34   | .22   |
| prop. unemployed | .13   | .08   | .09   | .05   | .16   | .08   | .14   | .08   |
| prop. households on public assistance | .06   | .05   | .04   | .04   | .08   | .23   | .07   | .05   |

| Control Variables |
|--------------------|--------|--------|--------|--------|
| Age (years)        | 36.48  | 10.36  | 41.00  | 10.27  | 33.38  | 9.64  | 33.87  | 7.87  |
| Employed           | .46    | .50    | .47    | .50    | .45    | .50    | .48    | .50    |
| Employed prior to incarceration | .59 | .49 | .60 | .49 | .58 | .49 | .59 | .49 |
| Time served (months) | 32.42 | 29.03 | 32.94 | 25.40 | 27.58 | 22.26 | 34.70 | 29.60 |
| Living in group quarters | .25 | .43 | .31 | .46 | .22 | .41 | .18 | .39 |
| Living in non-traditional households | .48 | .50 | .36 | .48 | .55 | .50 | .48 | .50 |
| Pre-prison neighborhood disadvantage | .09 | .78 | -.32 | .53 | .32 | .84 | .20 | .78 |
| Returned to pre-prison neighborhood | .25 | .43 | .19 | .40 | .29 | .46 | .22 | .41 |
| Person observations | 122   | 36     | 55     | 23     |

*Note:* SD is standard deviation. Eight respondents identified as some other race or ethnicity.
Correction Boston-area release population. Like Massachusetts prison releasees in general, the sample is mostly male; 15 of the 122 respondents were women. About half of the sample are non-Hispanic black, and roughly 30 percent are non-Hispanic white. The average age of non-Hispanic Black respondents in the BRS sample is 33, for non-Hispanic whites it is 41, and for Hispanic respondents, the average age is about 34. Throughout the study period, on average 46 percent of respondents were working for pay, and 59 percent reported being employed immediately prior to the arrest leading up to this recent prison term. On average, respondents served nearly 3 years (32 months) in state prison before being released to the community.

Across all interview waves, on average, 25 percent of respondents were living in group quarters, and nearly half (48 percent) were living in non-traditional households. Across all racial and ethnic groups, pre-prison neighborhood disadvantage looks very similar to the average neighborhood disadvantage during the study period, and twenty-five percent (N=30) of respondents returned to the same neighborhood they reported living in before entering prison. Of the respondents that returned to their pre-prison neighborhood, 43 percent remained in the same neighborhood for the entire year after release. By the end of the 12-month period, 30 percent of those who returned home were living in state or county custody. Seven respondents moved from their original neighborhood after the first week of reentry, and one respondent became homeless.

The analysis to follow focuses on two kinds of neighborhood attainment disparities: differences by race and ethnicity, and differences by household type.
Figure 4.3.2 displays a time-series of respondents living in the top quartile of the neighborhood disadvantage index, typically used to indicate concentrated disadvantage.

From this descriptive account, it appears the greatest disparities in neighborhood attainment across white, black and Hispanic respondents occurred during the initial period of reentry. Over 55 percent of Hispanic respondents lived in concentrated disadvantage during the first week of reentry, whereas only 9 percent of white respondents moved immediately into neighborhoods of concentrated disadvantage. Whites generally experienced the same level of concentrated disadvantage across the one-year reentry period, while Hispanics tended to improve neighborhood quality by the six month interview. At the 12 month exit interview, about 35 percent of black respondents lived in concentrated disadvantage, while 30 percent of Hispanic respondents did.

A second mechanism for disparities in neighborhood attainment may come from the type of household you live in after prison. Figure 4.3.3 displays a time series of the distribution of respondents living in concentrated disadvantage by household type at each wave. Twenty-two percent of respondents moving immediately into non-traditional households live in concentrated disadvantage—nearly five percentage points higher than the average across respondents. By the twelve month interview, this percentage rises to over forty percent. Individuals moving directly into non-institutionalized group quarters are slightly more likely to live in concentrated disadvantage throughout the
Figure 4.3.2: BRS respondents living in concentrated disadvantage at one week, two month, six month and one year after release by race.
Figure 4.3.3: BRS respondents living in concentrated disadvantage at one week, two month, six month and one year after release by household type.
reentry period, which may mean that quasi-public housing and group homes for
men and women with mental illness, addiction or other issues are located in less
disadvantaged areas than their counterparts.

4.3.1 Modeling

To model neighborhood attainment in a sample of 122 men and women leaving state prison and returning to the Greater Boston area, I write census tract-level neighborhood disadvantage after prison release as a function of respondent demographic, economic, and household characteristics, time served in prison, and relationship to pre-prison neighborhood. For census tract $i$ at wave $t$, I fit the following regression to neighborhood disadvantage, $Y_{it}$

$$
\hat{Y}_{it} = \beta_0 + d_i'\beta_1 + e_i'\beta_2 + \beta_3 P_i + h_i'\beta_4 + \beta_5 R_i + \beta_5 N_i + \delta_i,
$$

where predictors include a a vector of demographic characteristics, $d$, a vector of employment characteristics, $e$, a measure of time served in prison, $P$, a vector of housing characteristics, $h$, a dummy measure indicating that a person returned to the same neighborhood they lived in immediately prior to incarceration, $R$, a measure of the level of neighborhood disadvantage associated with their pre-prison address, $N$, and a set of time effects, $\delta$.

Because it is hypothesized that there are significantly different dynamics of neighborhood attainment for those returning to former neighborhoods versus those that moved away, I will estimate three models: a full model, and two models stratified by the whether or not the respondent returned to their former
neighborhood.

This paper estimates variation in neighborhood disadvantage for a group of individuals leaving prison and entering the Greater Boston area. However, observing individuals who are extremely disadvantaged and marginalized proved challenging, and like previous observational studies, missing data and lost interviews pose significant but not insurmountable challenges to inference. The empirical and theoretical complexities involved in studying residential mobility and neighborhood selection have been extensively discussed (Sampson and Sharkey 2008; Sampson 2008, 2012). In addition to missing data and challenges to causal inference, a significant portion of the sample returned to custody by the 6 and 12 month interview, or did not have an address associated with a neighborhood. In the following section, this missing data is discussed substantively as a potential source of bias in the estimates, but also as an important feature of neighborhood attainment disparities among returning citizens.

4.4 Results

Table 4.4.1 reports the results from OLS regression analyses of neighborhood attainment in the Boston Reentry Study. Three models are included. The first model includes the entire sample of respondents living in a neighborhood at a given interview wave. The second model restricts the sample to those that returned to the neighborhood they reported living in prior to incarceration, and the third model restricts the sample to those that moved away from their former
neighborhoods. Model 1 has an additional control for pre-prison neighborhood disadvantage.

Taking the models together, across all interview waves, black respondents lived in significantly higher conditions of neighborhood disadvantage. This is also true for Hispanic respondents, particularly for those that moved away from their former neighborhoods. One key test of the racial disparities hypothesis requires us to know more about the respondents’ residential histories. In Model 1, where we control for pre-prison neighborhood disadvantage, racial and ethnic minority respondents are still attaining worse neighborhood outcomes than whites. Of course, pre-prison neighborhood disadvantage is strongly predictive of future neighborhood disadvantage, providing evidence for the hypothesis that individuals involved in criminal justice institutions face durable neighborhood inequality throughout their life course.

Older respondents tend to live in greater neighborhood disadvantage than their younger counterparts, particularly for those that moved away to new neighborhoods after the most recent incarceration. Because older respondents were found to have greater difficulties of obtaining a means of subsistence in previous BRS studies (Western et al. 2015), this provides further evidence that older people experiencing reentry face not only great challenges to their health and employment outcomes, but their neighborhood context is also more disadvantaged than their younger counterparts.

Employment throughout the reentry period did not show a significant net effect on neighborhood attainment, but reporting work for pay prior to arrest
Table 4.4.1: Regression analysis of neighborhood disadvantage in Boston Reentry Study, all interview waves

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Neighborhood Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Whole Sample</td>
</tr>
<tr>
<td>Black</td>
<td>0.364***</td>
</tr>
<tr>
<td></td>
<td>(0.087)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.361***</td>
</tr>
<tr>
<td></td>
<td>(0.105)</td>
</tr>
<tr>
<td>Age</td>
<td>-0.077***</td>
</tr>
<tr>
<td></td>
<td>(0.028)</td>
</tr>
<tr>
<td>Age²</td>
<td>0.001***</td>
</tr>
<tr>
<td></td>
<td>(0.0004)</td>
</tr>
<tr>
<td>Employed</td>
<td>0.051</td>
</tr>
<tr>
<td></td>
<td>(0.079)</td>
</tr>
<tr>
<td>Employed prior to arrest</td>
<td>-0.193***</td>
</tr>
<tr>
<td></td>
<td>(0.072)</td>
</tr>
<tr>
<td>Time served (months)</td>
<td>0.002*</td>
</tr>
<tr>
<td></td>
<td>(0.001)</td>
</tr>
<tr>
<td>Group quarters</td>
<td>0.395***</td>
</tr>
<tr>
<td></td>
<td>(0.117)</td>
</tr>
<tr>
<td>Non-Traditional HH</td>
<td>0.189**</td>
</tr>
<tr>
<td></td>
<td>(0.093)</td>
</tr>
<tr>
<td>Returned Home</td>
<td>0.355***</td>
</tr>
<tr>
<td></td>
<td>(0.083)</td>
</tr>
<tr>
<td>Pre-Prison NH Disadvantage</td>
<td>0.376***</td>
</tr>
<tr>
<td></td>
<td>(0.048)</td>
</tr>
<tr>
<td>One week</td>
<td>-0.460***</td>
</tr>
<tr>
<td></td>
<td>(0.106)</td>
</tr>
<tr>
<td>Two month</td>
<td>-0.452***</td>
</tr>
<tr>
<td></td>
<td>(0.101)</td>
</tr>
<tr>
<td>Six month</td>
<td>-0.436***</td>
</tr>
<tr>
<td></td>
<td>(0.100)</td>
</tr>
<tr>
<td>Constant</td>
<td>1.173**</td>
</tr>
<tr>
<td></td>
<td>(0.527)</td>
</tr>
<tr>
<td>Observations</td>
<td>352</td>
</tr>
<tr>
<td>R²</td>
<td>0.366</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.339</td>
</tr>
</tbody>
</table>

Note: *p<0.1; **p<0.05; ***p<0.01
leading to this prison bid significantly lowers one's predicted neighborhood disadvantage, particularly for those that returned home to their former neighborhoods.

Spending a longer time in prison proved important for neighborhood attainment outcomes, particularly for those that moved away from former neighborhoods. In the BRS full sample, a longer time in prison increased neighborhood disadvantage significantly—but not for those that returned to former neighborhoods. This may mean that time served also predicts a higher chance you’ll not return to former neighborhoods.

A second important mechanism producing disparities in neighborhood attainment is one’s housing type. The conditions of one’s household relates to neighborhood attainment. First, living in group quarters significantly increased neighborhood disadvantage, but this is only true for people who moved away from former neighborhoods. This is likely because access to group quarters housing may not be possible in former neighborhoods, so this relationship is particularly felt among those who left their former neighborhoods. It may be important to understand how housing dynamics ultimately affect neighborhood attainment; it might not be enough to move away from a former neighborhood, particularly if the set of alternatives are limited to a small subset of housing in disadvantaged areas for those returning home from prison.

Conversely, living in a non-traditional household (such as the home of a parent, sibling or friend) showed significantly higher levels of neighborhood disadvantage in the full model and the model restricted to those that returned
home. A way to interpret this finding is that people who returned home largely rely on kin and friend networks to obtain housing, and the respondent’s social network is embedded in areas with high levels of concentrated disadvantage. However, living in a non-traditional household (as opposed to group quarters or institutional settings) strongly predicts better employment and desistance outcomes (Sirois 2015). Thus, stable housing among family and friends may be a double-edged sword when considering neighborhood attainment.

4.5 WHEN A NEIGHBORHOOD IS UNATTAINABLE

A nontrivial group of respondents did not integrate into neighborhoods, which presented challenges for estimating community-level conditions for this group and for those in who lived in neighborhoods. Figure 4.5.1 displays a time series plot of two kinds of non-neighborhood residence: community institutional settings and reimprisonment. At one week out, 80 percent of respondents in the study were living in neighborhoods in Boston, while 16 percent were living in non-neighborhood areas. By the 12-month interview, 10 individuals (8 percent) were living in these community non-neighborhood conditions or areas of the city.

Reimprisonment is another reason why individuals may not be living in a neighborhood. Clear (2007; 2003) theorizes the concept of coercive mobility, which considers incarceration to be a form of residential mobility, but produced by formal state coercion. Living within prison walls may constitute a significant portion of a person’s residential history. In the BRS sample, 55 percent of
Figure 4.5.1: Non-Neighborhood Residence. BRS respondents not living in a neighborhood at one week, two month, six month and one year after release by type.
respondents have spent over half of their adult lives incarcerated, and nearly 40 percent of respondents have spent more than two-thirds of their adult lives in prison. The segregative nature of institutionalization fundamentally bars one from neighborhood membership. As a result, the majority of our respondents have cycled in and out of communities, experiencing limited attachment and exposure to neighborhoods than most city dwellers. The reentry experience may include periods of time where individuals do not engage in community integration for a variety of reasons. By the twelve-month interview, 16 percent of respondents had moved back to custody—either jail or prison. Nearly one-quarter \( (N=29) \) of respondents were not living in a neighborhood at their exit from the study.

Figure 4.5.2 displays a map of the types of places individuals spent up to an entire year as their residence. In the context of Boston, homeless shelters tend to be in downtown Boston, near large train yards, or on the outskirts of the city. The base map is shaded by the proportion of residents in neighborhoods living in group quarters in 2010 (U.S. Bureau of the Census 2010). For example, the most commonly used shelter among Boston Reentry Study respondents is the Long Island Shelter, a massive homeless shelter neighboring a city owned waste-management facility that exists on a small island in the Boston Harbor, only accessible by a narrow bridge that was eventually condemned in October 2014. Residents of these types of institutions have little to no attachment to the neighborhoods where these institutional residences exist, often spending most of their time away from the shelter, only to return for meals and a place to sleep. In
Figure 4.5.2: Non-Neighborhood Residences in Boston. Nineteen respondents (16 percent) moved into hospitals, treatment facilities, or homeless shelters immediately upon release from state prison. Neighborhoods are shaded by the proportion of the total population living in group quarters.
addition, these residences were inherently temporary, making neighborhood attachment undesirable and their broader social context serving as a stepping stone to an eventual neighborhood.

It is difficult from a theoretical perspective to imagine that neighborhood attainment would be a meaningful concept for those living in places such as these. When an individual lives in 4 to 5 different shelters across the city, how do we conceptualize their neighborhood? Additionally, failing to account for this subgroup within the reentry population could attenuate our estimates of neighborhood disadvantage within the sample.³ Not attaining neighborhood residence in any measurable or substantive way is an important trajectory in the reentry process, and points to an important aspect of integration often ignored by those estimating neighborhood attainment among hard-to-reach populations.

4.6 Discussion

This essay presents one of the first empirical analyses of neighborhood attainment after prison from observing individuals during the first year of reentry.

In a sample of 122 men and women leaving Massachusetts state prison and

³The portion of the Boston Reentry Study participants for whom a neighborhood is observed may be a nonrandom subset, and as such, sample selection bias could significantly impact our estimation of neighborhood quality in the period of reentry. To understand this, I modeled nonrandom selection of individuals into (or out of) neighborhoods and its implications for estimating neighborhood attainment. On average across all post release interview waves, 84 percent of respondents were living in neighborhoods. Because about 16 percent spent time out of neighborhoods, their absence from the sample could induce biased estimates of the effects of respondent characteristics on neighborhood attainment. To adjust for sample selection bias, I estimated an individual's propensity for neighborhood residence (Heckman 1979; Berk 1983). After adjusting for sample selection bias, the models presented in Table 4.4.1 remained substantively unchanged and the selection adjustment was not significant.
obtaining residence in the Greater Boston area, findings indicate black and Hispanic respondents moved to worse neighborhoods than whites even after controlling for pre-prison neighborhood conditions. Racial disparities also persist whether one returns to former neighborhoods or moves to new neighborhoods. While for the entire sample, people living in unstable or temporary housing were more likely to live in concentrated disadvantage, this took on a more complex trajectory. Non-traditional households predicted higher neighborhood disadvantage, particularly for individuals who returned to former neighborhoods. Twenty-five percent of respondents “returned home” to their pre-prison neighborhood, and they lived in more concentrated disadvantage than those that moved away. However, within the group of “movers,” neighborhood attainment was a mixed bag—particularly if they relied on group quarters housing, which tended to predict higher levels of concentrated disadvantage. Older respondents were more vulnerable to entering disadvantaged neighborhood contexts, and having a history of employment served as a buffer from such contexts. Finally, a portion of the sample did not ever reside in a neighborhood, or returned to institutional settings, including mental health facilities, hospitals, jails or prisons, before the exit of the interview.

These findings extend our understanding of mass imprisonment by describing and identifying mechanisms of neighborhood attainment during the period of reentry. Individuals residing in neighborhoods have incredibly diverse connections to households, kin and friend networks, local institutions, and neighborhoods. One theoretical implication of these findings is neighborhood
context is largely shaped by an individual’s relationship to networks and institutions—be it family, friends, access to temporary housing programs, or formal sanctions. This research suggests that much of neighborhood attainment in the period of reentry, particularly for disadvantaged and marginalized groups, is due to involuntary forces that have to do with relationships to households and services. Furthermore, this research shows a significant portion of the sample may not experience neighborhood life, and this may prove to be an important condition of marginality often relegated to statistical nuisance or measurement error. Future studies should seek to identify direct mechanisms that, in our case, restrict or limit an individual’s ability to integrate fully into neighborhood life after leaving prison, and for those that do, how disadvantage in neighborhood context may be mitigated by attachments to family, households, and jobs.

Future research in neighborhood attainment during reentry should consider how kin and social networks often determine the neighborhood selection of returning citizens. From the Boston Reentry Study, it is the mothers, sisters, relatives and friends of the respondents who provided the most consistent housing support (Western et al. 2015). However, this may mean greater exposure to concentrated disadvantage. Understanding how former inmate social networks structure the type of life on the outside experienced by the reentry population deserves further attention.

In addition, further study of marginalized populations and neighborhood sorting will help to answer important questions about the practice of mass incarceration and its lasting community effects. The invisibility of incarcerated
people from official statistics has masked inequalities in labor and voting patterns, but individuals leaving prison are also marginalized from neighborhood effects research. Due to profound attrition in observational studies of people leaving prison, when a person’s residence cannot be observed they are often dropped from the analysis. However, while research relying on nationally representative surveys or administrative records can identify neighborhood context during the period of reentry, previous studies assume that when an address is reported, an individual actually lives there. These issues pose both methodological and conceptual limitations to our understanding of neighborhood attainment after prison—as individuals are often severely disconnected from neighborhoods and households. In studying highly marginalized groups such as people leaving prison, those that have no address or no single place to call home are not simply a problem for empirical research design, but are experiencing an important and often unmeasured form of urban inequality.

Release populations are large and continue to grow, which means that divergent pathways into neighborhoods need to be better understood. In order for policymakers to respond to the needs of people leaving prison, a more complex array of outcomes should tailor how social services and public goods can aid particular needs. Families of the incarcerated bear the disproportionate burden of housing and facilitating transitions from prison (Western et al. 2015). However, many families of the incarcerated reside in highly disadvantaged neighborhoods, which may prove to have strong effects on those living within them who recently left prison. Understanding how to support these families as
they house their kin after a period of incarceration will be an important policy
response to the difficulties posed by the transition out of prison. Further, racial
differences in neighborhood attainment after prison may contribute to racial
disparities in future recidivism and, more broadly, incarceration rates at the
community level.
Over the last four decades, mass imprisonment transformed the character of poverty and community life in the United States. However, two sociological research traditions with close empirical connections to the role of justice institutions in poor communities—research on mass incarceration and
research on *urban inequality*—have evolved with little exchange or synthesis. While urban sociologists focused on identifying and analyzing the effects of social environments on individuals and rates of behavior, sociologists of punishment studied the political and economic causes of the prison boom. Urban inequality research paid insufficient attention to dynamic patterns of structural disadvantage within both urban and non-urban places due to mass imprisonment. Thus, while mass incarceration unfolded in a diverse set of communities, only a portion of community areas have been studied. Simultaneously, research on mass imprisonment failed to account for the role of local context and spatial inequality in the historical pattern of incarceration.

The historical trajectory of place and punishment may lend important insight into the practice of law enforcement in the United States. In the Introduction I present historical data to lay the groundwork for a more demographic approach to the study of neighborhoods, poverty and inequality, and punishment. With the decline in incarceration rates in New York City and Boston, the same cities also witnessed a crime decline. Future research and policy analysis could aim to explain decarceration and crime decline in large, metropolitan cities, and why other urban and suburban areas are not following suit.

One important finding to be pursued further in my work is the degree to which racial disparities in incarceration vary across metropolitan cities, smaller central cities, suburbs and towns. From the second essay, it appears that the majority of the overall differences in pre-prison environment have to do with between racial group levels of disadvantage rather than within differences across space. Racial
differences in neighborhood conditions are stark in the state of Massachusetts, and this spatial inequality in the experience of concentrated disadvantage is salient across spatial localities. Rather than seeing a direct racial-spatial divide of whites outside of Boston and Hispanic and blacks in Boston—we see a consistent pattern of concentrated disadvantage across different community areas. In the context of decarceration, where some of these areas may not see the same decreases in imprisonment rates, smaller cities may become important places for understanding how and why racial disparities in incarceration persist.

One theoretical implication of this dissertation is that the ecological conditions of mass incarceration are stark—beyond patterns of neighborhood disadvantage. When I include the prison admission rate in principle component analyses of poverty-related conditions in particular areas, 100 percent of the variation loads on the first component. In other words, there are no high incarceration neighborhoods in Massachusetts that are not also seeing similar correlations among poverty-related conditions. This strict convergence of social disadvantages lays bare the reality of divergent social worlds and maps onto our understandings of the deeply divided conditions of mass incarceration, and why community-level effects may be some of the most important and lasting ones.

A portion of this dissertation was devoted to understanding neighborhood attainment after an individual leaves prison. What I found had implications for both theory and policy. The concept of attainment or neighborhood selection is constructed with a subtle assumption that people have a choice set and make a decision to move to the best possible neighborhood they can. From my analysis,
it is clear that the experience of prisoner reentry is fraught — not simply due to the challenges of reintegrating into the labor market or finding stable housing — but that determining one’s place in a community has far-reaching and often contradictory outcomes in ways that even the broader population of the poor does not experience. In other words, hypermarginality (Comfort et al. 2016) affects how individuals become residents and members of neighborhoods. Given this reality, a new framework of neighborhood attainment for the urban marginalized would enhance or analytic tools and may uncover the varied experiences of deep and durable poverty, and sharpen our policy responses to remedy those experiences.

In this dissertation, I uncover some spatial dynamics of incarceration, particularly as it relates to racial inequality. I show how the spatial concentration of imprisonment is not restricted to large, metropolitan areas, though historically it once was. I believe these spatial dynamics are important for understanding the persistence of social inequality in mass incarceration, and a full understanding of place and punishment will be key for responding to the next phase of imprisonment in the United States.

Desmond (2016) writes, “When people began to view their neighborhood as brimming with deprivation and vice, full of ‘all sorts of shipwrecked humanity,’ they lost confidence in its political capacity...This lack of faith had less to do with their neighborhood’s actual poverty and crime rates than with the level of concentrated suffering they perceived around them. A community that saw so clearly its own pain had a difficult time also sensing its potential” (p. 181–82).
Despite recent (though spatially limited) patterns of decarceration, and a nascent political will to change this course, the casualties of this failed criminal justice policy called mass incarceration will be felt for decades to come. Moreover, we have yet to construct sound policy in response to community suffering under these conditions. This dissertation in part aims to shed light on this suffering, and to compel further interest in the consequences of mass incarceration for communities across the United States.
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