

Neighborhood Attainment After Prison

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Abstract

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 of period reentry.

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 paper 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 or moving away from former neighborhoods, show complex relationships between neighborhood attainment and these household dynamics.

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, Petersilia, and Turner 2010; Massoglia, Firebaugh, and Warner 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, Western, and Redburn 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, Steiner, and Travis 2010; Hipp, Petersilia, and Turner 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 and Logan 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, Pais, and South 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 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 (Haynie 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, Morenoff, and Herbert 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 therefore derive the following hypothesis: *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 hypothesize: *individuals who spent more time in prison will be more likely to enter neighborhoods with more concentrated disadvantage.*

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 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

First Neighborhood After Prison

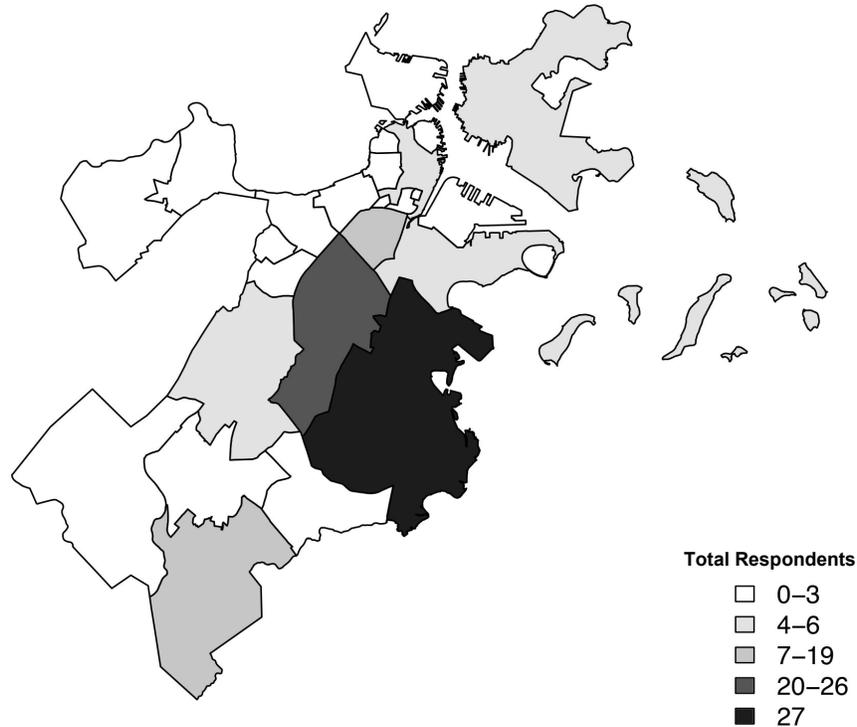


Figure 1. Neighborhoods of Boston Reentry Study respondents during the first week out. Two neighborhoods account for nearly 40 percent of respondent neighborhoods.

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 neigh-

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.

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 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 disad-

vantaged 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.

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 in-

formation 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 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 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 1 describes the distributions of these four neighborhood characteristics against a backdrop of the overall distribution of each in Greater Boston.

The neighborhoods BRS respondents returned to are more disadvantaged than the average Greater Boston tract. The average rate of child poverty

²Because of the large student population in Boston, using a measure of poverty that excludes college-aged residents provides a more accurate account of neighborhood disadvantage.

Densities of Neighborhood Disadvantage

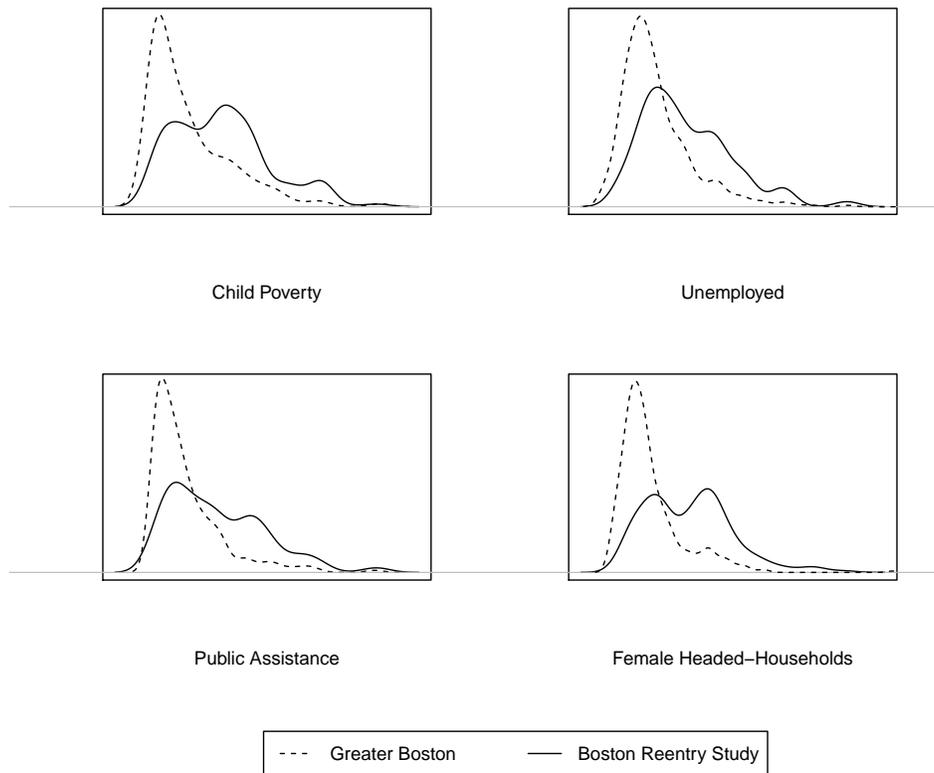


Figure 2. Distributions of neighborhood disadvantage. Dashed lines indicate the distribution of the average neighborhood disadvantage across all waves of the Boston Reentry Study. Solid lines represent the distribution of neighborhood disadvantage for all Greater Boston residents.

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 1 show there are significant differences by race and ethnicity. Black and Hispanic respondents have higher levels of neighborhood disadvantage compared to whites.

Table 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

Table 1. Descriptive statistics of person observations by race and ethnicity

| | Full Sample | | Whites | | Blacks | | Hispanics | |
|--|-------------|-------|--------|-------|--------|-------|-----------|-------|
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| <i>Dependent Variable</i> | | | | | | | | |
| 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. female-headed families | .26 | .15 | .18 | .12 | .31 | .14 | .28 | .16 |
| prop. households on public assistance | .06 | .05 | .04 | .04 | .08 | .23 | .07 | .05 |
| <i>Control Variables</i> | | | | | | | | |
| 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.

neighborhood they reported living in prior to this prison stay.

The respondents are representative of the Massachusetts Department of 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 3 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

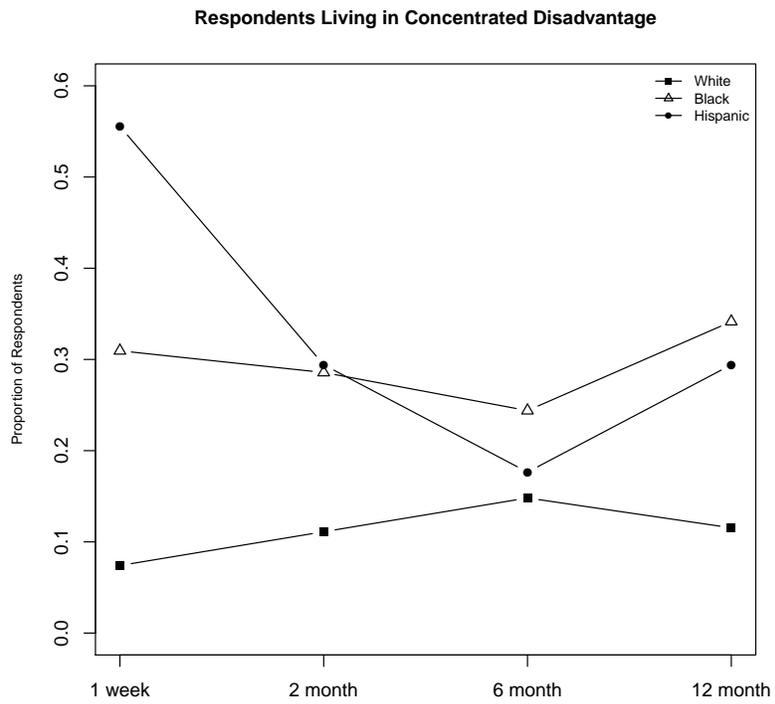


Figure 3. BRS respondents living in concentrated disadvantage at one week, two month, six month and one year after release by race.

in concentrated disadvantage, while 30 percent of Hispanic respondents did.

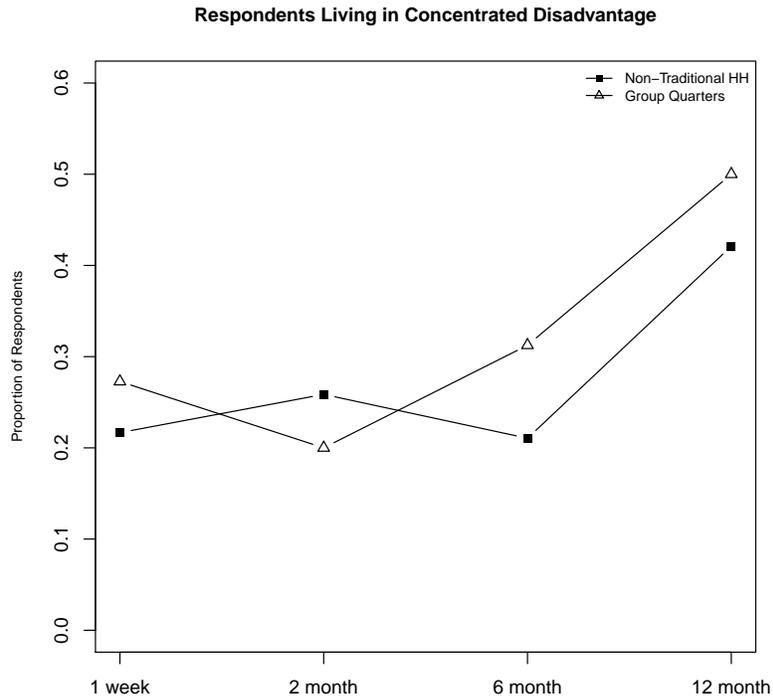


Figure 4. BRS respondents living in concentrated disadvantage at one week, two month, six month and one year after release by household type.

A second mechanism for disparities in neighborhood attainment may come from the type of household you live in after prison. Figure 4 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 aver-

age 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 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.

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} ,

$$\hat{Y}_{it} = \beta_0 + \mathbf{d}'_i \boldsymbol{\beta}_1 + \mathbf{e}'_{it} \boldsymbol{\beta}_2 + \beta_3 P_i + \mathbf{h}'_{it} \boldsymbol{\beta}_4 + \beta_5 R_i + \beta_5 N_i + \delta_t,$$

where predictors include a vector of demographic characteristics, \mathbf{d} , a vector of employment characteristics, \mathbf{e} , a measure of time served in prison, P , a vector of housing characteristics, \mathbf{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, δ .

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.

RESULTS

Table 3 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 leading to this prison bid significantly lowers ones 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

Table 2. Regression analysis of neighborhood disadvantage in Boston Reentry Study, all interview waves

| | <i>Dependent variable:</i> | | |
|----------------------------|----------------------------|----------------------|----------------------|
| | Neighborhood Disadvantage | | |
| | Whole Sample | Returned Home | Moved Away |
| Black | 0.364*** (0.087) | 0.588** (0.230) | 0.484*** (0.097) |
| Hispanic | 0.361*** (0.105) | 0.491* (0.270) | 0.525*** (0.122) |
| Age | -0.077*** (0.028) | 0.076 (0.086) | -0.113*** (0.034) |
| Age ² | 0.001*** (0.0004) | -0.001 (0.001) | 0.001*** (0.0004) |
| Employed | 0.051 (0.079) | -0.238 (0.203) | 0.025 (0.090) |
| Employed prior to arrest | -0.193*** (0.072) | -0.504*** (0.171) | -0.126 (0.086) |
| Time served (months) | 0.002* (0.001) | -0.004 (0.004) | 0.003** (0.001) |
| Group quarters | 0.395*** (0.117) | -0.023 (0.527) | 0.256** (0.124) |
| Non-Traditional HH | 0.189** (0.093) | 0.537** (0.256) | 0.054 (0.105) |
| Returned Home | 0.355*** (0.083) | | |
| Pre-Prison NH Disadvantage | 0.376*** (0.048) | | |
| One week | -0.460*** (0.106) | -0.857*** (0.258) | -0.363*** (0.123) |
| Two month | -0.453*** (0.101) | -0.671*** (0.250) | -0.348*** (0.117) |
| Six month | -0.436*** (0.100) | -0.738*** (0.248) | -0.348*** (0.115) |
| Constant | 1.173** (0.527) | -0.719 (1.548) | 1.847*** (0.636) |
| Observations | 352 | 97 | 259 |
| R ² | 0.366 | 0.358 | 0.216 |
| Adjusted R ² | 0.339 | 0.266 | 0.178 |

Note:

*p<0.1; **p<0.05; ***p<0.01

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 re-

turned 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.

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 5 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.

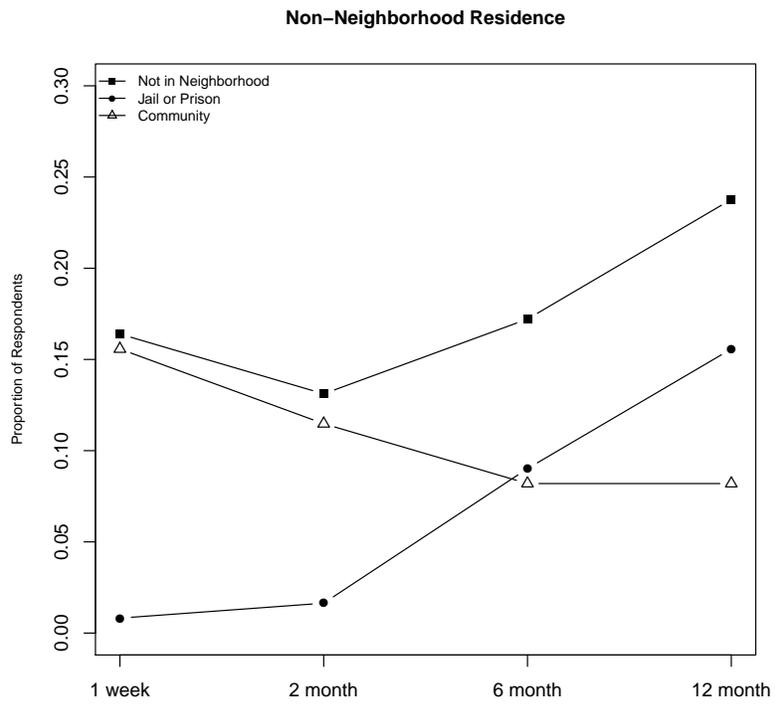


Figure 5. BRS respondents not living in a neighborhood at one week, two month, six month and one year after release by type.

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 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 6 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

Non-Neighborhood Residences

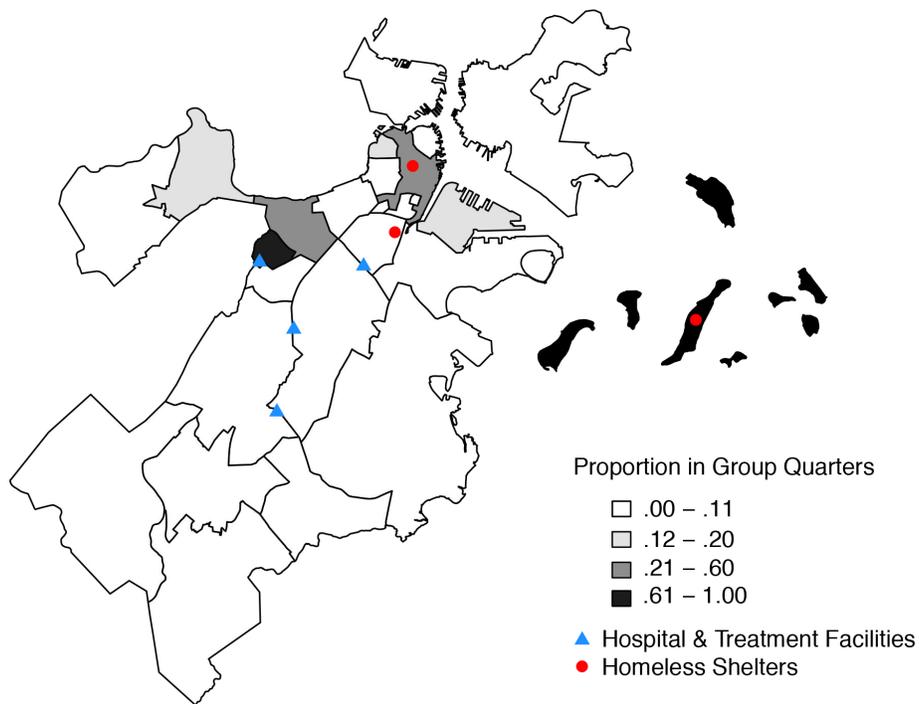


Figure 6. Non-Neighborhood Residences in Boston. Nineteen respondents (16 percent) moved into hospitals, treatment facilities, or homeless shelters immediately upon release from state prison. Neighborhoods are shaded by the proportion of the total population living in group quarters.

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 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

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

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.

DISCUSSION

This paper 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 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,

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 2 remained substantively unchanged and the selection adjustment was not significant.

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 net-

works 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, Braga, Davis, and Sirois 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.

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