Mapping prison proliferation: Region, rurality, race and disadvantage in prison placement

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ABSTRACT

Perhaps the leading perspective on how and where prisons are located stems from the perspective of the prison industrial complex (PIC). Implicit, if not explicit, in the PIC perspective is the notion that Black and Hispanic prisoners are exploited for the benefit of poor, unemployed, White prison towns. Unfortunately, however, there has been a shortage of empirical scrutiny of this central notion. This paper examines this claim with a rare event logistic regression analysis of 176 new prison placements across 13,155 rural places in the 1990s in the US. In contrast to the PIC perspective, prison towns are disproportionately southern and poor, and have a larger population with a greater share of Blacks and Hispanics. The analysis yields three further challenges to the PIC perspective on prison towns. First, findings suggest rural prison placement does not cause racial and economic inequality as much as prison siting results from concentrated rural disadvantage. Second, there is not one prototypical prison town. Instead, there are typologies of prison towns based on US region, race, town population size, race, prior proximate prison, and SES. Lastly, future studies should consider the theoretical and methodological implications of rural concentrated disadvantage in measuring prison impact.

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1. Introduction

The salience of the prison town stems from unparalleled US penal expansion over the last 40 years. The US now has more than 1700 correctional facilities housing a prison and jail population of over 2.3 million people.[1] Sociologists of punishment understand this rapid expansion of the penal system as the prison boom (Garland, 2001; Western, 2006). Forty years ago, most towns protested the siting of LULUs (Locally Undesirable Land Uses). This trend shifted drastically with correctional facilities as some rural towns began lobbying to win the placement of a prison. The reasons for this shift are varied and complex. Despite the varied motivations that produced this shift, one thing is clear—few scholars have actually examined the impetus for the "demand" for prisons in small, rural towns or the impact of these facilities. The existing investigative journalism and sparse academic work on this topic constitute normative framings of prisons impacting communities negatively or positively. The prison industrial complex (PIC) perspective implicitly, if not explicitly, informs most of the prison placement literature. From the PIC viewpoint, Black and brown prisoners are exploited for the benefit of poor, White prison towns with high unemployment. Only recently have scholars begun mapping prison towns. While many of these studies focus on the economic impact of prisons using the county as the primary unit of analysis, a systematic methodological approach to the study of prison towns has not emerged.

This paper examines demographic characteristics of communities receiving prisons using rare event logistic regression, providing a theoretical lens to understand prison siting. The main question guiding this inquiry centers on rural town

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[1] United States Department of Justice, Bureau of Justice Statistics downloaded March 5, 2005 http://www.ojp.usdoj.gov/bjs/abstract/pjim04.htm.

demographics that predicted prison siting during the prison boom. More specifically, did the demographics of the archetypical PIC rural town predict prison siting during the prison boom? The empirical analysis challenges conventional wisdom in three ways. First, findings suggest rural prison placement does not cause racial and economic inequality as much as prison siting results from concentrated rural disadvantage. This claim is based on finding rural racial and economic disadvantage as the dominant antecedent of communities receiving prisons. Secondly, there is not a prototypical prison town. Instead, there are typologies of prison towns based on US region, town population size, race, prior proximate prison, and SES. These findings suggest future studies should use region as the primary level of analysis and theoretical frame for evaluating prison siting and prison institutions' impact on rural communities. In discussing the dominant typology of prison town, the southern prison town, I call for a return to the sociology of the South. Third, because PIC theory dominates conceptualizations of prison impact, studies focus disproportionately on the positive economic benefit provided to towns through prison siting. To expand our understanding of prison impact future studies should focus on the paradox that prisons may slow economic decline and may even stem the effects of poverty. This paper chronicles prison siting literature, providing an understanding of standard prison town frames. Then hypothesis is outlined in accord with this literature. Next, methods and data for the analysis are discussed. Finally, results are presented and the theoretical implications of prison siting are discussed.

2. The prison town in PIC (prison industrial complex) theory

In order to understand prison impact on rural communities during the prison boom, we must first map the rural landscape of prison placement. Specifically, the demographics of towns siting prisons must be examined. The sociology of punishment seeks to explain how punishment impacts society. A segment of the sociology of punishment research describes a prison industrial complex. Although there is a common theoretical basis between the sociology of punishment and the prison industrial complex, there are key differences. The PIC literature is structural-deterministic, focusing on dominance and economic profit with few cultural explanations. Schlosser (1998) defines prison industrial complex as "a set of bureaucratic, political, and economic interests that encourage increased spending on imprisonment, regardless of the actual need" (54). This piece has influenced a number of writers. Academics and others refer to the PIC as an institutional dynamic in which vested economic interests actively promote prison construction and a punitive system of criminal justice. This theory of the PIC can be characterized by the following empirical claims: (1) Politicians exploiting crime legislation to secure votes[2]; (2) Private companies seeking profits by serving or operating prisons[3]; (3) Rural town leaders using prisons for economic development.[4] The growth of prisons in rural communities suggests that prisons are a strategy for economic development. Because White towns are believed to derive economic benefit from the incarceration of Black men through prisons' creation of jobs, there is a racial dimension to this exploitation.

> The ultimate policy irony at the heart of America's passion for prisons can be summarized by what I call 'correctional Keynesianism'; the prison construction boom fed by the rising 'market' of Black offenders is a job and tax-base creator for predominantly White communities that are generally far removed from urban minority concentrations. Those communities, often recently hollowed out by the de-industrializing family farm-destroying gales of the 'free market' system, have become part of a prison-industrial lobby that presses for harsher sentences and tougher laws, seeking to protect their economic base even as crime rates continue to fall" (Street, 2002, p. 36).

Street's (2002) commentary demonstrates how prison towns are believed to reify racial and economic stratification by punishing and encasing poor Black and brown urban dwellers. Classic notions of the "peculiar institution" of racism involve White dominance over Blacks. Many scholars and journalists view the PIC's extension of the "peculiar institution" of racism as an oppressive catalyst generating jobs, capital investments, political power, and community pride in White rural prison towns (Schlosser, 1998; Huling and Mauer, 2003). At the same time, the destructive apparatus of the PIC drives concentrated disadvantage in the hyper-ghetto by removing young Black men in prime years of employment and familial responsibility (Braman, 2001; Clear, 2001; Smith and Hattery, 2008). Some assert the ghetto 'underclass' or "surplus population" (Darity, 1983) was rife for mass imprisonment. Additionally, others claim the PIC reshapes the labor pool along racial lines cordoning-off Blacks from the mainstream labor market (Smith, 2009). Another journalist finds "most of America's huge prison population is Black or brown, and many of America's prisons are located in very White rural areas" (Tilove, 2002). In some instances, Blacks may be nearly 80 percent of a state's prison population whereas Whites may be 90 percent of the corrections officers (Wacquant, 2001). From this view, the growth of the penal population has redistributed economic resources

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[2] "…both liberal and conservative, who have used the fear of crime to gain votes; impoverished rural areas where prisons have become a cornerstone of economic development; private companies that regard the roughly $35 billion spent each year on corrections not as a burden on American taxpayers but as a lucrative market; and government officials whose fiefdoms have expanded along with the inmate population" (Schlosser, 1998, p. 51).

[3] "Correctional officials see danger in prison overcrowding. Others see opportunity. The nearly two million Americans behind bars—the majority of them nonviolent offenders—mean jobs for depressed regions and windfalls for profiteers (Schlosser, 1998, p. 51)".

[4] "Prisons as sources of economic growth have also become vital to the development strategy many small rural communities that have lost jobs in recent years but hold the lure of cheap land and a ready workforce. Communities that once organized the siting of new prisons now beg state officials to construct new institutions in their backyards. Add to this the rapidly expanding prison privatization movement focused on the 'bottom line' of profiting from imprisonment. In the words of one industry call to potential investors, 'While arrests and convictions are steadily on the rise, profits are to be made-profits from crime. Get in on the ground floor of this booming industry now'" (Mauer, 2006, p. 11).

from poor Blacks to poor Whites by using the Black underclass to create jobs for poor Whites. While correlation of prison siting with increased poverty, unemployment, farming, and Whites does not necessarily mean causation, it would bolster the PIC hypothesis of increased prison construction for racial and economic domination. Still, others characterize the primary goals of the PIC as more overtly sinister. These scholars and activists find the PIC intentionally produces racial and economic inequality for exploitation by private corporations.[5] Many advocates of this position use the growth of private prisons from 7 percent to roughly 12 percent of total prisons as evidence of the sinister nature of the PIC.[6] Because states operate most US prisons[7] (roughly 83 percent), this extreme position does not necessarily hold. In fact, because states operate most prisons, state-level characteristics should be important predictors of prison placement. Furthermore, because prisons are primarily constructed by state legislatures, one can argue that each state acts as a prison placement sorting mechanism.

If the PIC account is correct, two things are clear. First, the prison town is a space that exacerbates racial and economic inequality, driving the expansion of the criminal justice system by "demanding" increased prison construction. Secondly, the archetypical prison town is a space dominated by unemployed and impoverished Whites. To tease out these specific claims of the PIC this analysis will focus on the context in which small-town officials operate. While the local context is important, larger social and political forces like region and state variations help shape the context of punishment. Other scholars account for state variation in punishment by region by accounting for differential use of the death penalty by state, including Florida, Georgia, and Texas in particular. These states are viewed as more punitive based on the use of the death penalty (Jacobs and Carmichael, 2002). This literature on punishment tell us that we should expect variations in prison building across states, with more punitive states building more prisons. Moreover, while many states consider variables like proximity to major transportation routes when siting large "pork" projects, this paper will not fully consider how states make siting decisions. While ecological factors affecting state level decisions like access to interstate highways are important, that is not the focus of this work. Instead of trying to answer how prisons are sited or the effects of prison siting, this paper analyzes where prisons are sited. To understand how prisons affect communities or the state mechanisms responsible for siting, the prison town landscape must first be accurately traced.

3. Prison siting during the prison boom

While scholarship on the collateral consequences of imprisonment on urban communities is expanding (Clear, 2001; Mauer, 2006; Tonry, 2004; Pattillo et al., 2004), empirical and theoretical explanations of punishment effects on rural space are sparse. In 1992, the *Journal of Crime and Delinquency* dedicated an entire issue to prison siting (Farrington, 1992; Martin, 1992; Carlson, 1992; Sechrest, 1992; McShane et al., 1992). This special issue marked a major advance in the prison town as a substantive topic of study. However, following this issue, the rate of prison building increased as the number of prison town studies diminished. Many of these scholarly studies implicitly use a PIC frame by focusing on measures of economic growth resulting from prison placement. For instance, Travis and Lawrence (2004) provide a descriptive overview of all US counties siting a prison in the last three decades. The authors outline statistics of counties (rural and urban) in the ten states with the highest prison construction. They also argue that the prison has profound effects that cause communities to become prison-building proponents.

Calvin Beale has several reports for the Department of Agriculture (U.S.D.A.) on the growth and potential effects of prisons in the rural US. In one report, he asserts that prison building is taking place disproportionately in rural areas. He claims during the 1980s "new nonmetro prisons amounted to 60% of the total, even though nonmetro areas now have only 20% of the US population" (2006). Beale makes a significant conceptual contribution by positing "cellular rural development," which is best described by Huling (2001) as the irony of "most prisoners in America being from urban communities, while most prisons are now in rural areas" (197). Beale (2006) also lists counties with the largest prison populations. The counties with the highest prison populations were most often in Texas and California and reached upwards of 10,000 or more prisoners. This evidence supports his claim that prison siting is unevenly distributed by state. Texas and Georgia clearly outpaced the rest of the country by the early 1990s, siting 25 and 20 percent of all nonmetro prisons respectively. Since Texas and Georgia are southern states and were responsible for such a large number of rural prison placements through the early 1990s, this suggests that regional and state-level characteristics are an important indicator of whether or not a town gets a prison. Still, other scholars suggest prison construction may occur in areas with significant farm populations (Gilmore, 2007; Huling and Mauer, 2003; Street, 2002) indicating that a farming population may be another important factor in whether or not a town gets a prison.

Blankenship and Yanarella (2004) review prison town literature and begin formulating a conceptual basis of prison town studies but lack sufficient empirics to construct a solid theoretical framing. Three studies on prison towns stand out because they are empirically based and provide theoretical extrapolation. Hoyman and Weinberg (2006) examine prison siting at the county level. This study uses proportional hazard modeling to examine how twenty-four prisons were sited in North Carolina from 1970 to 2000. This study of county level predictors for prison siting included "motivation"

(poverty, unemployment), "resources" (college graduates, owner occupants), NIMBY (owner occupants, population density, African-Americans), and propinquity (adjacent siting). While propinquity was positively correlated with future prison siting for both counties with or without prior established prisons, the coefficients in this analysis were insignificant. These findings suggest that adjacent prison placement should be incorporated into future analysis. This study concludes population density, owner occupants, and college graduates are negatively correlated with prison siting "whereas the presence of African-Americans is not an important predictor" (Hoyman and Weinberg, 2006, p. 107). The authors' major theoretical contribution is that demography, not just socio-economics and race, predicts prison siting. While this study provides valuable insight into potential indicators for prison siting, we cannot generalize beyond prison siting in North Carolina at the county level.

Hooks et al. (2004) provide a county level spatial economic analysis of prison impact over time for all US prisons (rural and urban) including controls for established prisons. By accounting for variables central to conceptualizing local economic development and using a time-series of data, this study introduces innovations in data and analysis of prison placement. Perhaps most innovative in this study is the incorporation Land-Deane spatial analysis to measure the impact of new prisons across surrounding communities. The most significant contribution of this paper is the finding that "prisons impede economic growth in counties growing at the slowest pace, [which] flies in the face of the widely held view that prison construction can assist struggling local areas" (Hooks et al., 2004, p. 51). While some PIC scholars postulate that prisons create agglomerate carceral economies in rural communities at the expense of less stigmatized types of development (Huling and Mauer, 2003), Hooks et al. also argue that although established prisons provide growth in public sector employment to moderate or fast growing counties, established prisons do not provide an extraordinary boost in employment in depressed rural counties. These findings support PIC scholars claim that prior prisons create an agglomerative prison economy, driving away other types of future developments. In this paper, we will use these findings to investigate the role prior prisons play in future prison construction and if proximity plays a role in new prison construction.

While recent studies provide county-level descriptors, an analysis of town-level demographics offers a more nuanced assessment of the prison-building boom using the methodological frame posited by McShane et al. (1992). Farrigan and Glasmeier (2007) begin by providing national descriptive statistics for prison inmates, prison employees, and the largest prison building states. However, describing these trends is not what makes this study unique. This study is distinctive because it is the first and only of its kind to use town-level predictors to measure the economic impact of prisons. This study also measures prison siting as a treatment using propensity scores in comparing towns most likely to receive prisons versus other rural towns. Methodologically, the authors excel at demonstrating quantitative techniques to tease out prison siting impacts. Clearer standardized measures of propinquity to prior prisons are key elements of this innovative approach to studying rural prison impact. Still, while this is an impressive analysis, controls for region, state, and race are absent. The authors conclude that prison siting provides nominal positive economic impact on communities.

These initial studies provide a good description of overall trends but do not provide a strong theoretical context for these trends. Moreover, as these studies fill the void on prison town scholarship, municipal level characteristics of prison siting have yet to be thoroughly investigated. Furthermore, by measuring for economic growth (and not the counterfactual of slowed decline) these studies do not develop a context for understanding prison siting. Because PIC theory suggests race should play a role in prison siting, variables for race are included in the analysis presented here. Prior scholarship has demonstrated that prison construction in should be greater in the South. Prior scholarly work on prison siting also suggests higher population density was negatively associated with prison siting. In addition, we should expect results here to remain consistent with these findings. Controlling for all predictor variables, we should expect higher than average rates of poverty, unemployment, and farm populations to be independently correlated with an increased probability of a town constructing a new prison during the prison boom. Lastly, we should expect that an established prison would increase the likelihood of a receiving future prison. This paper will provide a framework based in rigorous empirical analyses to understand how the prison town is an essential space to theorize the impact of punishment on rural areas. To this end, this paper maps the demographics of newly constructed prisons during the prison boom.

4. Calculating the probability of prison siting

4.1. Data

This analysis uses information collected by the United States Census Bureau, United States Department of Agriculture, the United States Department of Justice, and Bureau of Prisons Census of Federal State and Local Prisons. This information was originally gathered to examine the effects of prisons on rural economic development by rural sociology demographer Calvin Beale. He has compiled a list of every non-urban prison built from 1980 until 2007. The data set includes every federal, state, and private prison facility built from 1980 to 2006. The data were then merged with demographic characteristics from the US. Bureau of the Census at the town, county, and state level. Data for areas siting prisons from 1991 to 1999 are used in this analysis. Because the base year for the census is 1990, prison siting from 1990 are excluded from this analysis to avoid measurement error. These data are then merged with data from Bureau of Prisons Census of Federal State and Local Prisons the

Prison Proliferation Project that include the more than 1700 prison facilities operated by federal, state, and private organization in the United States.[8]

Unlike many other prison town studies that use county as the unit of analysis (Hooks et al., 2004; Hoyman and Weinberg, 2006; Huling and Mauer, 2003), another unique feature of the data is the use of town or US. Census Place as the unit of analysis. While data for rural counties are more widely accessible and provide regional trends, these data lack the fine grain detail that place or town level data can yield. Therefore, to understand the role of local communities in prison placement, I use town as the unit of analysis.

The binary dependent variable, Prison town (1 = town has constructed a prison, 0 = town does not have a prison), is used to indicate whether or not a prison has been located within a town during the prison boom. With only 177 prisons being sited in the more than 13,000 rural towns, the odds of any town receiving a prison were just over 1 percent. The mean of prison town is only .013, far less than the median of .5, showing that the dependent variable is not normally distributed and therefore overdispersed. I will discuss how overdispersed dependent variables affect measurement and strategies to mitigate the effects of measurement error in the analysis section.

Independent variables include town population by race, size, and the number of staff and inmates projected at opening of facility. There are a series of variables for race including percent White, percent Black, percent Hispanic, percent Asian/Pacific Islander, percent Native American, and percent Other. White is the reference group in exploring racial predictors. There are also dummy variables for US regions (South, Northeast, West, Midwest) constructing a prison. Dummy variables for each US state receiving a prison during the 1990s are noted as state fixed effects.[9] There is also a dummy variable for a town with a prison constructed prior to 1992 within a ten-mile radius of a newly constructed prison within the 1990s.[10] There are 50 prior proximate prisons included in this sample. While it is important to control for the roughly 20 percent of new prisons placed near towns with prior prisons, there are other important considerations. To account for nonlinear effects, the natural log and $\log^2$ of town population, along with squared terms for race and poverty, are included (DeMaris, 1995). Interaction terms were added to models showing small effects and increased collinearity. Results for these analyses are available upon request. In contextualizing socioeconomic status (SES), variables for poverty, income, unemployment, education, and farming population are included.

4.2. Analysis

There are three stages to this analysis. First, we compare descriptive statistic of towns receiving prisons versus all other rural towns on a national and regional basis. Second, rare event logistic regression analysis is used to measure the probability of rural prison siting during the 1990s nationally, in the South, and non-southern areas. Third, relative risks for towns receiving prisons based on odds ratio from the regression analyses are calculated.

Descriptive statistics are used first to investigate the link between town demographics and prison placement. These statistics provide us with a baseline for comparing prison and non-prison towns. I also provide descriptive statistics for prison versus non-prison town by region, then prison versus non-prison town by South versus non-South. This further nuances the baseline comparing towns receiving prisons against all others. Because the data used are the universe of US rural towns, statistical inferences will be used for corollary descriptive purposes while not necessarily implying causal relationships. In comparing means by region, we should expect variation by region across race, poverty, and total population of town. To control for these factors, multiple regression models are used, accounting for differences across and within similar levels of analysis.

The second stage of analyses includes series of models accounting for demographic variation in rural towns that received prisons versus those that did not. These models also include state fixed effects to account for state level variation in prison building because we should expect more punitive states to build more prisons (Jacobs and Carmichael, 2002). The analysis is ordered according to the size of the effect of key variables in the analysis. National, southern, and non-South rural towns without prisons will be compared to towns most likely to receive prisons. As previously mentioned, state prison-building

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[8] The United States Bureau of Prisons' Census of the Prison data presents multiple challenges for accurate analysis. While the Census of the Prison data list facility by year constructed it is only by the most recent year of an addition to the facility. For example, if a prison added a maximum-security wing in 1994 to a minimum-security facility originally constructed in 1982, the Census of the Prison would record 1994 as the year constructed. Additionally, the addresses for the facilities could be a post office box up to 20 miles away from the actual site of the prison. Moreover, the accuracy of the town or place in these data are problematic because the Census of Prison does not include census place FIPS codes. Furthermore, controlling for prior prison siting by itself does not control for racial composition of the town. For that, we would have to control for group quarters by race in addition to prior prison facility. Prisons are one of several types of group quarters. These concerns could not be addressed with the data available for this paper. Given these limitations, I estimate that roughly 75% of the data used to construct the prior proximate prison are accurate. The prior proximate prison variable controls for prior prison siting from 1811 to 1991 within 10 miles of rural prisons sited in the 1990s.

[9] While I call these models "fixed effects models", what I really mean is that I include a control for the state in which each town is located.

[10] Ideally I would control for group quarters at the U.S. census place level by race. However, to address this concern several steps need to be taken. The first step involves properly geocoding the 1700 plus U.S. prison facilities into corresponding U.S. census place by latitude and longitude coordinates over the 1970–2000 decennial census using Geographic Information Systems (GIS) software. There are further challenges to accurately geocode prison data. The number of U.S. census places has grown dramatically between 1970 and 2000 from roughly 8000 to around 25,000. Third, the definition of rural and urban has changed over this period. Fourth, the classification of particular of rural/urban places changed from 1970 to 2000. Taken altogether the longitudinal nature of the data makes accurately locating prisons a moving target. While other scholars use the Census of Prisons, I improve upon this data by using U.S.D.A. data. However, data included here are a sample of the several hundred cases of the more than 1100 prisons prior to 1990 that need within U.S. census place geocoding. While this is the best I can do with the data available, we cannot assume the prior proximate prison variable is sufficiently accurate in its current state to be an explanatory variable. However, since this potential biased variable is so significant I include it in the analysis.

policies differ widely, resulting in extreme variation for state fixed effects. Controlling for variation in state effects enhances the regression model. However, the small number of observations at state levels makes interpreting the coefficients of these variables difficult. Therefore, state fixed effects are not reported but are available upon request.

Model 1 accounts for state fixed effects, town population size, and the optimal effects of race and poverty on prison placement. Like the second model in each series, Model 2 includes additional controls to measure past prison placement on future prison placement. These controls were added after accounting for findings in the descriptive statistics. Using the descriptive statistics to inform the statistical analysis, we see most new prisons were placed in southern states where African-Americans make up larger proportions of rural towns than in any other region. Because a large portion of African-Americans live in southern states, controls for race and poverty are added to measure optimal percentages of race and poverty of towns most likely to build a prison. Moreover, Models 3 and 4 in the series of rare event logistic regression analysis compare prison placement in towns within the region with the most new prison facilities. The intra-region comparison between rural towns most likely to receive a prison and all other towns highlights the uniqueness of the South. Models 3 and 4 also controls for state fixed effects, race, SES, farming population, town population size, and squared terms for poverty and race. Models 5 and 6 characterize towns in non-southern states. Given the small number of cases in any region outside of the South, the descriptive statistics allow for regional comparison. For regression analysis however, the small number of cases in these regions do not provide enough statistical power. Therefore, Northeast, West, and the Midwest are combined creating a non-South as a reference. The non-South regression analysis in the latter models shows variation within the same statistical framework as prior series. Model 5 controls for race, SES, and farming population, town population size, state fixed effects, and squared terms for poverty and race. Model 6 builds on Model 5 by including a control for prior proximate prison.

While initially analyses include multi-level or hierarchical logistic regressions, Relogit (rare event logistic regression) offered more accurate analysis, less measurement error, and easier interpretation of results. Therefore, Relogit was used to calculate the probability of a town receiving a prison controlling for region, race, and SES. While a form of logistic regression in analyzing binary dependent variables, Relogit was developed specifically for analyzing highly skewed rare event data. Relogit decreases measurement error by using logistic regression or case control methods in analyzing extremely rare events. In analyzing overdispersed dependent variables, there are several potential pitfalls. A highly skewed dependent variable often results in omitted variable bias, non-normal standard errors, nonlinearity, and heteroscedasticity (Menard, 1995). Of chief concern are the effects of overdispersion and bias due to extreme skewness (McCullagh and Nelder, 1983). Logistic regression mitigates the measurement error caused by a dichotomous dependent variable in linear regression. However, this analysis does not account for a skewed dependent variable distribution. Measurement error is more likely with rare events because logistic analysis assumes the dependent variable is somewhat normally distributed. Like case control method, Relogit samples on the dependent variable. While epidemiologists have used case control method in predicting the probability of rare diseases (e.g. cancer), this approach can oversample on the dependent variable, leading to selection bias (King and Zeng, 1999a). Selection bias can lead to inconsistent standard errors. Standard errors in models with overdispersed dependent variables are often too small. To adjust standard errors appropriately, a dispersion parameter needs to be established. Extreme skewness can be mitigated through careful design of sampling on both the dependent and independent variables. In calculating coefficients and estimating robust standard errors, Relogit analysis corrects for both overdispersion and omitted variable bias. Therefore, by "introducing the prior correction and weighting methods of estimation under choice-based sampling (King and Zeng, 1999a, p. 143)," Relogit is more appropriate for this particular analysis than case control method or logistic analysis. To ensure validity of results and mitigate the myriad pitfalls in rare event binary dependent variables, robustness is compared across logit and relogit analyses. Rare event logistic coefficients are only reported with corresponding measures of relative risk because Relogit and logistic regression analysis produced similar coefficients.

In addition to providing more precise coefficients and mitigating measurement error, a major advantage to Relogit is the ease of calculating relative risk for a given regression model using a few Stata commands. The final stage of the analyses uses Relogit relative risk calculations. Using relative risk in discussing probabilities allows for easier interpretability of odds ratio coefficients (DeMaris, 1995). Simply put, relative risk is a more intuitive way of comparing and contrasting the likelihood of an event occurring given certain circumstances. For prison siting, relative risk allows us to easily understand how much more likely some communities are to receive a prison than others.

5. Results

5.1. Prison building trends during the prison boom

Very few rural American towns have prisons. Of the more than 13,000 rural US towns, less than 2 percent received a prison during the height of the 1990s' prison boom. From 1980 to 2006, 486 prisons were established in non-urban areas. During the 1980s, a total of 163 rural prisons were constructed with an annual average of 16 prisons per year. In 1980, there were 13 rural prisons placed. Over the next fifteen years, an average of 21 rural prisons were established each year. At the pinnacle of the boom in 1995, 37 prisons were constructed. Between 1996 and 2006, 11 prisons were erected annually in rural America. Rural prison siting reached a 25-year low in 2005 with only four being opened. The 1990s ushered in a marked increase with an annual average of 26 new prisons built in non-urban areas for a decade, totaling 255. Prison building in the new millennium is starkly different from the prison building that took place in the 1990s. This decade's average is nearly 20 fewer than that of the 1990s, with an average of only seven new prisons built annually for a total of 48 new prisons (see Fig. 1).
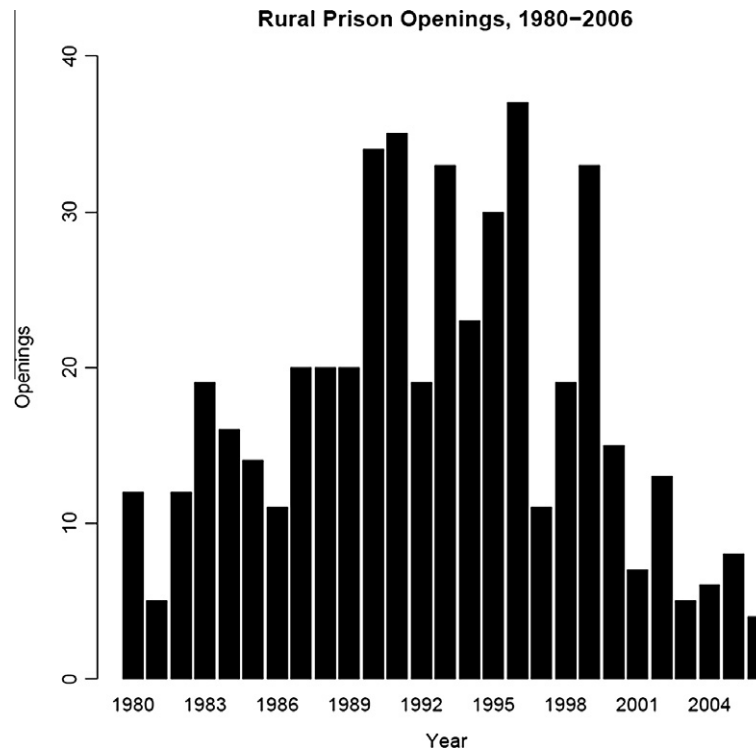
Rural Prison Openings, 1980–2006

Fig. 1. Graph rural prison siting 1980–2006. *Source:* United States Department of Agriculture.

Thirty-seven states constructed a rural prison during this era in the prison boom, with the average state erecting 17. Of the 486 prisons built in rural areas since 1980, nearly 13 percent were located in Texas. The 60 prisons that Texas erected over the past 26 years were the most of any state. Georgia is a distant second and Florida third, with 39 and 29 rural prisons sited, respectively. These three states accounted for nearly 28 percent of all rural prisons. During the 1990s, Texas built the most rural prisons with 49, Georgia was second with 24, and Florida was third with 17. Texas alone accounts for 20 percent of rural prison construction. Together, these three states accounted for 37.6 percent of all prisons constructed during that decade. Rounding out the top prison building states from 1980 to 2006 were North Carolina (26 or 5.54 percent), New York (24 or 5.12 percent), Michigan (22 or 4.69 percent), Virginia (20 or 4.26 percent), Illinois (19 or 4.05 percent), Pennsylvania (16 3.41 percent), and Arkansas (16 or 3.41 percent). These ten states account for 297 or 63 percent of the rural prisons during the prison boom.

The 486 rural prisons were located in 380 towns spread over 316 counties (U.S.D.A.). The distribution of prisons does not evenly match the number of towns or counties, suggesting prisons are clustered at the county and town level. Thirty-two percent of counties (150 total) that received a prison sited more than one. Moreover, 17.5 percent of towns (86 total) building prisons erected more than one.

5.2. Rural towns versus new prison towns

Upon opening a prison, a rural town could expect an average of 879 inmates and 286 staff (U.S.D.A.). While some prisons could use as few as 11 staff members in support of 37 prisoners, others could hold over 4000 prisoners and employ nearly 1400 staff members. New prison towns differ from other rural towns in race, socioeconomic status, and size. According to the 1990 census, the average rural town was nearly 87 percent White, roughly 6 percent Black, 3 percent Hispanic, 2 percent Native American, and less than 1 percent Asian/Pacific Island. In comparison, nationally Whites are 80 percent of the population, Blacks are 12 percent, Hispanics 9 percent, Native Americans are just less than 1 percent, and Asian/Pacific Islanders are 3 percent.[11] Prison towns have a lower percentage of Whites and higher percentages of Blacks and Hispanics than both the national and rural area averages. The percentage Black in an average prison town is 2.5 more than the average rural town. For Hispanics, the average percentage in a prison town more than triples the average rural town (see Table 1).

In 1990, new prison towns had slightly higher educational attainment and poverty than other rural areas, but experienced slightly more unemployment. While a little more than one percent of the US rural population farmed, prison towns had an even smaller percentage of farm population with only .48 percent. Finally, rural towns siting prisons during the 1990s were,

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Table 1
Description of variables and 1990 descriptive statistics prison versus non-prison rural towns.

Variable	Description	Rural town (1)	New prison (2)	Difference (1 − 2)
Prison town	Dichotomous variable 1 if rural town sites a prison during the 1990s, 0 if not	–	–	–
Prior prison	Dichotomous variable 1 if rural town has established a prison prior to 1992, 0 if not	–	–	–
Inmates	Number of inmates expected at prison facility upon opening	–	876	–
Staff	Number of staff expected to fill prison facility upon opening	–	281	–
Median household income	Median household income in rural town	$20,772	$18,367	$2405
Total population	Rural town total population	4092	5484	−1392
Percent of town's population that is . . .				
White	Percentage of White population in town	87	73	14
Black	Percentage of Black population in town	6	15	−9
Hispanic	Percentage of Hispanic population in town	3	10	−7
Native American	Percentage of native American population in town	3	2	1
Asian/Pacific Islander	Percentage of Asian/Pacific Islander population in town	.7	.48	.22
Other	Percentage of other population in town	.03	.04	−.04
Below poverty	Percentage of population below poverty in town	18	23.3	−5.5
Unemployed	Percentage of civilian unemployment in town	7.9	8.5	−.06
Bachelor's degree	Percentage of of population in town graduated from college	10.6	11	.04
Farming	Percentage of farm population in town	1.34	.48	.84

Source: 1990 US. Census and U.S.D.A. Includes all places siting a prison during the 1990s in rural counties by region according to US. Census definitions.

on average, close to 36 percent larger than other rural towns. Just as population density, race, and socioeconomic status are key variables in differentiating rural towns versus new prison towns, region also has a role.

5.3. Rural towns versus new prison town by US region

While state-level characteristics clearly impact prison siting (e.g. Texas, Florida, Georgia), state prison-building policies vary widely, making categorizing prison siting by state difficult. Other indicators of place are needed. Generally speaking, prison placement is a rare event. Because the South received 68 percent of all rural prisons sited in the 1990s, prison siting in this region occurred quite frequently when compared to other US regions (see Table 2).

The South is clearly the poorest region with the lowest average median household income and highest poverty rate for all rural towns and new prison towns. Additionally, the new southern prison towns are racially distinct from other rural southern towns. Blacks make up 14 percent of rural southern towns (the highest percentage of any region) and 20 percent of southern prison towns. Hispanics represent 4 percent of rural southern towns and 10 percent of southern prison towns. Furthermore, the average total population difference between prison and non-prison towns is lowest in the South with prison

Table 2
1990 descriptive statistics prison versus non-prison towns by US region.

Variables	Southern			Midwestern			Western			Northeastern		
	Rural towns (1)	Prison towns (2)	Difference (1−2)	Rural towns (4)	Prison towns (5)	Difference (4−5)	Rural towns (7)	Prison towns (8)	Difference (7−8)	Rural towns (10)	Prison towns (11)	Difference (10−11)
Median household income	$18,716	$17,412	$1304	$20,649	$19,931	$718	$23,994	$19,326	$4668	$24,958	$23,324	$1633
Total population	4399	5204	−805	3413	4810	−1397	5824	6645	−821	3358	9942	−6584
Percentage of town's population that is . . .												
White	79.58	68.28	11.3	93.28	89.05	4.23	78.27	61.06	17.21	94.1	94.32	−.22
Black	13.81	19.71	−5.9	2.59	6.45	−3.87	3.28	9.8	−6.52	2.62	2.08	.54
Hispanic	4.15	10.41	−6.26	1.75	.74	1.01	6.48	25.06	−18.58	1.67	2.49	−.83
Native American	1.73	1.17	.56	1.86	3.55	−1.7	10.29	2.54	7.75	.91	.37	.54
Asian/P.I.	.7	.39	.31	.49	.19	.3	1.62	1.46	.16	.66	.72	−.06
Other	.03	.05	−.02	.03	.01	.03	.06	.07	−.01	.04	.01	.03
Below poverty	22.94	26.39	−3.45	15.31	15	.31	17.89	23.08	−5.19	11.95	12.19	−.24
Unemployed	8.38	8.61	−.23	6.91	8	−1.09	10.09	9.02	1.07	7.3	7.59	−.29
Bachelor's degree	10.34	10.65	−.31	9.18	11.49	−2.31	13.65	10.49	3.16	15.07	14.92	.15
Farming	1.26	.6	.67	1.56	.22	1.34	1.16	.4	.77	.47	0	.47
Number of observations	4361	118	–	6005	30	–	1933	18	–	831	10	–

Source: 1990 US. Census and U.S.D.A. Includes all places siting a prison during the 1990s in rural counties by region according to US. Census definitions.

towns averaging just over 800 residents more than non-prison towns. While southern rural towns and new prison towns vary intra-regionally by race and poverty, western rural towns are also quite different from new prison towns.

Differences in total population between prison and non-prison towns are smallest in the West. Northeastern prison and non-prison towns are the largest. The western region also had the largest disparity in median income between prison and non-prison towns at nearly $4700. Western areas also witnessed the largest difference in poverty between prison and non-prison towns at 23 percent and 18 percent, respectively. The largest racial differences between prison and non-prison towns are in western areas. While western towns had the lowest percentage of Whites at 78 percent, the average western prison town was 61 percent White. In western prison towns, Blacks and Hispanics made up 3 and 6 percent, respectively. In western prison towns, the percentage of Blacks and Hispanics increased to 10 and 25 percent. Western towns are largest in Native American population, but Native Americans, on average, are 3 percent in new western prison towns. While race and poverty dominate intra-regional variation in southern and western towns, other variables explained variance in northeastern towns.

Population size seemed to matter most in northeastern towns. The total population of an average northeastern prison town nearly tripled the average total population of a non-prison town. Northeastern towns had the highest percentage of Whites, educational attainment, and median household income for both prison and non-prison towns. The rural Northeast had the lowest numbers in the categories unemployed, poverty, farming population, and racial diversity. While the population size accounted for much of the variance in northeastern towns, midwestern towns varied by race as well. Town population size also seemed key in the Midwest, as prison towns were 41 percent larger than other rural towns. There were negligible differences in rates of poverty, educational attainment, and unemployment between midwestern prison and non-prison towns. Nevertheless, Blacks were 3 percent of non-prison towns and 6 percent of prison towns, suggesting race may play a small but important role in this region as well (see Table 3).

Because most prisons are sited in the South where rural areas have higher than average concentrated poverty, Black, and Hispanic populations, perhaps regional variation is the major difference between prison and non-prison towns. However, southern prisons towns have higher poverty, and more Blacks and Hispanics than average southern rural towns. While region seems to be a key predictor, race and other variables still seem to matter. Rare event logistic regression is used to further explore these variables.

5.4. Analyses and relative risk predicting probabilities of prison placement

Rare event logistic regression models for the probability of prison placement during the 1990s appear in Table 4. Relative Risk of prison placement, inter- and intra-regional, is listed in Table 5. Model 1 yields probabilities of prison siting nationally controlling for race and SES measures, state fixed effects, town population size, and squared terms for race and poverty (see Table 4). In Model 1, controlling for race, SES, and population size, along with controls for state fixed effects a town with demographic similarities to a prison town was roughly 8 times more likely to receive a prison than the average rural town (see Table 5). In this national model, percent Black, Hispanic, and poverty, along with the log of total population, are positively correlated with prison building. The log of population yields the greatest odds of predicting prison building. In comparing percent Black to Hispanic, this model yields percent Black as a stronger predictor of receiving a prison than Hispanic. Larger values of the log of total population squared, percent Black squared, and poverty squared decreases the probability of prison building, suggesting independent optimal points for total population, percent Black, and percent poverty. Model 2 includes controls for prior proximate prisons. Controlling for race, population density, SES, and prior prison a town is more

Table 3
1990 descriptive statistics rural versus prison towns by southern versus non-southern.

Variable	Rural towns			Prison towns		
	Non-southern (1)	Southern (2)	Difference (1−2)	Non-southern (4)	Southern (5)	Difference (4−5)
Percent town's population that is …						
White	90.06	79.58	10.48	81.28	68.28	13
Black	2.74	13.81	−11.07	6.74	19.71	−12.97
Hispanic	2.78	4.15	−1.37	8.59	10.41	−1.82
Native American	3.62	1.73	1.9	2.69	1.17	1.53
Asian/P.I.	.76	.7	.06	.68	.39	.29
Other	.04	.03	.01	.03	.05	−.02
Below poverty	15.56	22.94	−7.39	17.02	26.39	−9.37
Unemployed	7.65	8.38	−.74	8.25	8.61	−.37
Bachelor's degree	10.73	10.34	.385	11.77	10.65	1.12
Farming	1.37	1.26	.11	.24	.6	−.36
Inmates	–	–	–	895	867	28
Staff	–	–	–	311	265	46
Median household income	$21,795	$18,716	$3078	$20,328	$17,412	$2916
Total population	3939	4399	460	6265	5204	1060

Source: 1990 US. Census and U.S.D.A. Includes all places siting a prison during the 1990s in rural counties by region according to US. Census definitions.

Table 4
Rare event logistic regression coefficients predicting prison siting during 1990s.

Variable	National		Southern		Non-southern	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Percent town's population that is . . .						
Black	.04***	.042***	.037**	.040*	.055*	.06*
Hispanic	.014**	.015*	.012	.013*	.02**	.022**
Native American	.01	.01	.016	.016	.017	.016
Asian/P.I.	−.002	.014	.0003	.019	.079	.094
Other	−.32	−.325	.13	.26	−1.47	−2.25
Below poverty	.132***	.094***	.165***	.116**	.16**	.138*
Unemployed	−.005	−.001	−.005	.004	−.01	−.007
Bachelor's degree	.0074	.01	.0077	.014	.006	.003
Farming	−.14*	−.131*	−.084	−.083	−.31	−.278
Proximate prison	–	1.793***	–	1.697***	–	2.282***
Total population (log)	1.19*	.864	1.242	.651	.86	.938
Total population (log)^2	−.057	−.041	−.06	−.028	−.04	−.048
Black^2	−.0004*	0*	−.0004*	0*	−.0005	0
Poverty^2	−.002***	−.001*	−.002**	−.001*	−.003*	−.003*
Constant	−14.32***	−12.615***	−12.03***	−9.302***	−12.65***	−12.615***
Number of observations	13,177	13,098	4355	4394	8743	8783

Source: 1990 US. Census and U.S.D.A. Includes all places siting a prison during the 1990s in rural counties by region according to US. Census definitions.
  * $p < .05$.
  ** $p < .01$.
  *** $p < .001$.

Table 5
Relative risk of rural town receiving a prison, intra-regional and inter-regionally.

Region	Intra-region relative risk		Inter-region relative risk (south versus all other regions)		Number of rural towns	Percentage of towns siting prisons
	New prison	Prior prison	New prison	Prior prison		
Nation	7.7	31.38	–	–	13,155	1.3
South	3.57	12.68	–	–	4361	2.7
Non-South	8.42	22.24	72.98	71.56	8769	.66
Midwest	4.33	4.82	79.8	80.43	5975	.5
Northeast	–	–	45.05	42.1	831	1.2
West	–	–	60.19	60.51	1933	.9

Source: 1990 US. Census and U.S.D.A. Includes all places siting a prison during the 1990s in rural counties by region according to US. Census definitions.

than 31 times more likely to receive a prison if demographically similar to a prison town than the average rural town suggesting the presence of an established prison has a sizeable positive effect on receiving a new prison. The coefficients for Black and Hispanic in this model are slightly larger than in Model 1 suggest that prior proximate prison strengthens the effects of race. In contrast, the coefficient for poverty is smaller suggesting prior prisons attenuate the effects of poverty on prison placement.

In sum, Models 1 and 2 illustrates national trends in prison siting. Rural towns with higher percent Black, Hispanic, poverty, and prior proximate prisons are more likely to receive a new prison. Of these predictors, prior proximate prison has a large positive predictive value for constructing prisons. Optimal percentages of Black and poverty moderate the likelihood of a town receiving a prison. Now that we understand national trends in prison siting we can examine regional trends.

The South sites 68 percent of all prisons, clearly the most prisons of any region. Model 3 includes controls for state fixed effects, race, SES, farming population, town population size, and squared terms for poverty and race. In this model, a town demographically resembling a prison town in the South is roughly 3.5 times more likely to construct a prison than the average rural southern town. Similar to national trends, town population size has the largest correlation predicting prison construction. We see that placing prisons in the South also follows similar national trends with percent Black, poverty, and population size as key predictors of prison building. This should not be surprising as the South built the majority of rural prisons during this period. The negative coefficients for rural town population size^2, percent poverty^2, and percent Black^2 all suggest there are optimal points for town size, percent poverty, and percent Black in predicting prison placement. However, the relative difference between potential new prison towns and non-prison towns is diminished in the South relative to national difference because of higher average percentages of Blacks and poverty in southern towns. In Model 4, controlling for state fixed effects, race, SES, population size, prior proximate prison, squared percent poverty, and Black terms a southern town with demographic similarities to a new prison town is 12 times more likely than the average rural town to receive a prison. As in Model 2, percent farming is negatively correlated with prison construction, but is not significant. In addition, the

large prior prison coefficient in this model suggests an established prison is a substantial predictor of future prison building. Percent Black and Hispanic again are the only statistically significant racial categories and they are slightly smaller than Model 2. As much as population density, percent poverty, and Black predict Southern prison siting, this is not a complete model. Now that we describe prison placement trends in the South, non-southern towns will be examined for regional variation.

In Model 5, a town with a population size similar to a non-southern prison town is 72 more likely than other non-southern towns to receive a prison. The effect of percent Black is quite large in this model when comparing to Models 1 and 3. Percent Hispanic is large in comparison to similar national southern models. The percent poverty coefficient in this model is also large and positively correlated with new prison placement while the squared term for poverty suggests that percent poverty has an optimal point before becoming negatively correlated with new prison placement. Overall, Model 6 is significant, and controlling for race, SES, population size, state fixed effects, and prior proximate prison, a non-southern town resembling the average new prison town is also roughly 72 times more likely to receive a prison than the average non-southern town. Similar to Models 2 and 4, percent Black, Hispanic, poverty, and prior prison are significant and strongly correlated with a town receiving a new prison. While still the strongest predictors of prison placement, population density and farming population are considerably weaker. Again, the squared function of poverty suggests an optimal point for poverty as predictor of new prison placement. So far, comparing results within similar categories (e.g. nation, region) has been the focus of the investigation. Relative differences across categories will briefly be compared before discussing the implication of the results.

Measures of relative risk for rural towns receiving prisons (see Table 5) suggest prior proximate prison is a key predictor explaining variation in intra-regional relative risk. For example, non-southern towns demographically resembling new prison towns with prior prisons are 22 times more likely than the average rural town to construct a prison. Whereas, non-southern towns with comparable demographics to a new prison town are only 8 times more likely than the average non-southern town to receive a prison. While prior proximate prison can explain variation in intra-regional relative risk, the effects of this predictor are not as strong in explaining inter-regional relative risk. In comparing southern and non-southern town, we see southern towns demographically approximating the average new prison town are nearly 80 times as likely to site a new prison as the average midwestern town. Likewise, the southern town bearing similar demographics of a new prison town is 60 times more likely than the average rural western town to attract a prison. The average non-southern town is nearly 73 times less likely to receive a prison than the southern demographically resembling the average new prison town. The average southern town is roughly 45 times more likely to receive a prison than the average northeastern town. Finally, in comparing southern towns with prior proximate prison to the average southern new prison towns, we see little difference in inter-regional relative risk of prison placement. These findings suggest that prior proximate prison may be an artifact of regional differences and other key predictors like race and poverty.

In sum, the southern prison town is the most dominant form, regionally siting nearly 70 percent of prisons during the prison-building boom. The southern town receiving a prison typically has a higher than average percent Black, Hispanic, and poverty. Controlling for race, SES, and total population, town population size, percent Black, and poverty are predictors of a positive correlation with prison siting. The average prison town in the Northeast or Midwest could serve as an icon for PIC scholars because of the high percentage of Whites. However, low poverty and large population sizes of northeastern prison towns would work against common PIC conceptions. Although percent Black has a role, size of population is key in predicting midwestern prison construction. While the average US town is racially homogenous and relatively small, rural towns receiving new prisons during the 1990s were more than a third larger than the average US town and less racially homogenous. Population size, like race and poverty, seemed to have an optimal point before correlation with prison building diminished. In western towns, the percent of non-Whites and poverty was higher, on average, with prison erection.

6. Discussion and conclusion

Findings here suggest that during the prison boom prisons were more likely to be built in densely populated towns with prior proximate prison with a higher than average percentages of poverty, Blacks, and Hispanics. These findings challenge a central tenet of PIC theory. Recall that PIC theory suggests the prison boom is being supported by prison construction in poor White towns with high unemployment at the expense of Black and Hispanic prisoners. While rural towns may seek prisons as a form of economic development, findings here challenge the notion of economic development as a form of racial domination. In fact, because rural towns most likely to site prisons are disadvantaged communities, we should reconsider how race and place impact prison siting using the sociology of punishment. While the sociology of punishment as an area of inquiry focuses on the intersection of punishment and inequality, the relative absence of theoretical or empirical work on the prison town complicates this discussion. While there are many implications of the findings above, I will discuss three key implications below.

First, the paradox of the role of disadvantage is important conceptually. In contrast to PIC theory's central argument that rural prison placement causes racial and economic inequality, findings suggest that prison siting results from concentrated rural disadvantage. Rural concentrated disadvantage, like urban disadvantage (Wilson, 1990; Sampson and Wilson, 1994; Wacquant, 2001), is marked by high poverty, residential segregation, and stigma. This is evident in studies showing that rural Blacks, like urban Blacks, live in the most residentially segregated U.S. census blocks (Aiken, 1990; Licther et al., 2007a; Wahl and Gunkel, 2007; Cromartie and Beale, 2008). Moreover, other studies suggest that Black and Hispanic housing

patterns are linked to concentrated poverty (Lichter et al., 2008). This paper advances the concept of rural concentrated disadvantage as a tool for making sense of the spatial location of mass imprisonment. In sum, towns with racial and economic disadvantage disproportionately build prisons. I argue that future studies should examine the role of concentrated racial and economic disadvantage in explicating the spatial location of mass imprisonment. Second, because findings indicate there are regional typologies of prison towns, regional differences should be used as a primary level of analysis and conceptual frame for evaluating the impact of prisons in future studies. The southern prison town is the most prevalent regional typology, which suggests that we revisit scholarship on the sociology of the South to better understand the role of southern culture in prison location (Cobb, 1992; Reed, 1994; Wimberley, 2008). Some may view the push of macro forces like deindustrialization as more salient to prison proliferation than the context of the pull of southern locales. While both are key factors in prison siting, southern culture may be more germane to prison town research in contextualizing the local pull or "demand" for prisons. To account for the quadruple stigma of region, rurality, race, and inequality new theories need to be applied to rural space. While theoretical framing is important to future prison placement and impact studies, methodology is just as vital. Lastly, because prison impact is implicitly, if not explicitly, measured using the PIC perspective, most studies focus on economic growth caused by prison placement. While this paper focuses on mapping the demographics of prison placement, findings suggest methodological innovations for future studies of prison impact are needed.

An article focusing on how economic institutions are placed and impact rural impoverished areas provides directions for future prison impact studies. Goetz and Swaminathan (2006) tease out and differentiate impacts on rural communities by considering prior presence of an economic institution. By using this methodological innovation these scholars conclude that when large economic institutions (e.g. Wal-Mart) are placed in rural communities they provide both positive and negative impacts on host communities. Because prisons are most likely to be placed in towns with larger proportions of racial and economic concentrated disadvantage, many conclude that prisons do not provide positive economic benefits (Hooks et al., 2004; Huling and Mauer, 2003). These claims are made without measuring for the counterfactual—do prisons slow economic decline? To fully understand the context of prison placement and the impact of prisons on rural places, selection bias and measurement error need to be mitigated. To this end, scholars should include measures for slowing economic decline including prior prison siting. Overall, using a similar approach as Goetz and Swaminathan (2006) also allows for a less normative account of prison siting impact in future studies.

Appendix

Rare event logistic regression coefficients predicting prison siting during 1990s.

Variable	National			Southern			Non-southern		
	Model 1	Model 2 State effects	Model 3 State effects	Model 4	Model 5 State effects	Model 6 State effects	Model 7	Model 8 State effects	Model 9 State effects
Percent town's population that is ...									
Black	.021***	.013**	.04***	.015***	.012*	.037**	.022***	.019**	.055*
Hispanic	.027***	.011*	.014**	.024***	.007	.012	.03***	.018**	.02**
Native American	−.007	.006	.01	.004	.016	.016	−.003	.01	.017
Asian/P.I.	.0004	−.007	−.002	.022	−.019	.0003	.035	.08	.079
Other	−.042	−.27	−.32	.37	.21	.13	−.35	−1.23	−1.47
Below poverty	.027***	.027***	.132***	.023**	.036***	.165***	.011	.012***	.16**
Unemployed	−.02*	−.013	−.005	−.03*	−.018	−.005	.003	−.01	−.01
Bachelor's degree	.013*	.001	.0074	.012	−.0006	.0077	.0125	.001	.006
Farming	−.257***	−.168**	−.14*	−.22**	−.13	−.084	−.44*	−.32**	−.31
Total population (log)	–	1.29**	1.19*	–	1.43*	1.242	–	.87**	.86
Total population (log)^2	–	−.061*	−.057	–	−.068	−.06	–	−.036*	−.04
Black^2	–	–	−.0004*	–	–	−.0004*	–	–	−.0005
Poverty^2	–	–	−.002***	–	–	−.002**	–	–	−.003*
Constant	−4.94***	−13.57***	−14.32***	−4.19***	−10.93***	−12.03***	−5.28***	−11.49***	−12.65***
Number of observations	13,098	13,098	13,098	4355	4355	4355	8743	8743	8743

Source: 1990 US Census and U.S.D.A. Includes all places siting a prison during the 1990s in rural counties by region according to US. Census definitions.

* $p < .05$.
** $p < .01$.
*** $p < .001$.

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