A natural experiment of the consequences of concentrating former prisoners in the same neighborhoods

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More than 600,000 prisoners are released from incarceration each year in the United States, and most end up residing in metropolitan areas, clustered within a select few neighborhoods. Likely consequences of this concentration of returning prisoners include higher rates of subsequent crime and recidivism. In fact, one-half of released prisoners return to prison within only 3 y of release. The routine exposure to criminogenic influences and criminal opportunities portends a bleak future for individuals who reside in neighborhoods with numerous other ex-prisoners. Through a natural experiment focused on post-Hurricane Katrina Louisiana, I examine a counterfactual scenario: If instead of concentrating ex-prisoners in geographic space, what would happen to recidivism rates if ex-prisoners were dispersed across space? Findings reveal that a decrease in the concentration of parolees in a neighborhood leads to a significant decrease in the reincarceration rate of former prisoners.

prisoners | recidivism | neighborhood effects | natural experiment | Hurricane Katrina

One in every 100 adults in the United States is currently in prison or jail, with ∼1.6 million individuals serving time in state and federal prisons and another 745,000 in local jails (1–3). Most of these individuals are not "lifers" and will eventually be released from incarceration. Although the "War on Drugs" and the "tough on crime" sentencing policies of the 1980s and 1990s facilitated the mass removal of criminals from many US metropolitan neighborhoods, recent decades have been characterized by a growing number of individuals returning to these very same neighborhoods following their exit from prison. In 1980, ∼170,000 prisoners were released from state and federal prisons back into the community (4). By 2010, that number had surpassed 700,000, before falling recently (5, 6). In total there are ∼5 million formerly imprisoned individuals residing in US neighborhoods (7), representing a significant subset of the socioeconomically disadvantaged population in the United States.

Despite the sheer magnitude of returning prisoners in the United States, most neighborhoods are untouched by prisoner reentry. (Prisoner reentry refers to the process of leaving prison and returning to the community.) The geographic distribution of prisoner reentry is highly concentrated in a relatively small number of neighborhoods within metropolitan areas. For instance, research by the Urban Institute reveals that more than one-half of prisoners released from Illinois prisons in 2001 returned to Chicago, and one-third of these formerly incarcerated individuals were concentrated in only six community areas (8). These six communities are among the most economically and socially disadvantaged in the city. Indeed, the fact that neighborhood disadvantage and the geographic concentration of former prisoners are so highly correlated—e.g., the correlation between disadvantage and incarceration rates is ∼0.80 in Chicago (9)—makes it challenging to try to empirically isolate the effect of concentrated prisoner reentry from the other forms of social adversity that characterize disadvantaged neighborhoods (e.g., unemployment, school failure, and family instability).

Research suggests that up to one-half of individuals released from prison have been in prison on at least one other occasion, and that more than two-thirds of returning prisoners are rearrested within 3 y of prison release and almost one-half are reincarcerated (10, 11). In fact, recidivism rates are essentially unchanged over the past decade despite unprecedented spending on incarceration and other strategies aimed at criminal deterrence. Whether these patterns—concentrated prisoner reentry and stubbornly high rates of criminal recidivism—are causally linked is a question that has received scant attention in the research literature, in part because of the methodological challenges of disentangling the relationship. However, there are sound theoretical reasons to expect that concentrated prisoner reentry undermines a former offender's ability to reintegrate into society. The extreme concentration of criminals in geographic space likely produces a contagion effect that not only leads to elevated rates of recidivism among existing criminals but also pulls the previously noncriminal toward deviance. When individuals are embedded in neighborhood networks with numerous other felons, it may be far less likely that they will comply with the law. Accordingly, through investigation of a natural experiment focused on post-Hurricane Katrina Louisiana, this study investigates the following question: If instead of concentrating ex-prisoners in geographic space, what would happen to recidivism rates if ex-prisoners were dispersed across space?

Significance

There are ∼5 million formerly imprisoned individuals residing in US neighborhoods, yet this population is highly concentrated in a relatively small number of neighborhoods, typically within metropolitan areas. I find that concentrating former prisoners in the same neighborhoods leads to significantly higher recidivism rates than if ex-prisoners were more dispersed across neighborhoods. The reasons why ex-prisoners concentrate in a select few urban neighborhoods include personal factors such as social ties to the neighborhood, but they also include institutional and structural barriers such as parole policies and housing market dynamics. Policy solutions that disperse the geographic concentration of former prisoners, while leading to some geographic displacement of recidivism, would likely yield a net reduction in recidivism in aggregate.

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The Concentration of Prisoner Reentry and Recidivism

A key question is why, exactly, would concentrated reentry and recidivism be causally linked? The reasons can be broadly categorized by whether returning prisoners are agents of criminogenic influences or whether they are recipients of criminogenic influences from the other ex-prisoners in the neighborhood. Regarding the former role, the funneling of massive numbers of ex-prisoners back into a select few neighborhoods likely facilitates the contagious spread of criminal attitudes, motivations, and techniques from ex-prisoners to neighborhood residents (12, 13).

Arguably, the process by which individuals learn criminal behavior is influenced by the broader social organization in which they are embedded (12, 14). In neighborhoods with many former prisoners, residents may be more likely to be exposed to individuals who spread views about the inequities and the injustices of the law and the criminal justice system, thereby feeding feelings of resentment toward the law that serve to loosen the moral bind of the law (15, 16). Recent research reveals that direct experiences with incarceration or police harassment fundamentally influence an individual's distrust of the law (17). Involvement with the criminal justice system significantly depresses a person's trust in government, with trust becoming increasingly damaged as criminal sanctions become more severe. Given that ex-prisoners are relatively more distrustful of the criminal justice system, the concentration of former prisoners into relatively few neighborhoods may have a devastating effect on perceptions of the law and authority among a community of residents. Concentrating ex-prisoners in the same neighborhood saturates residents' social networks with criminals and potentially leads to the contagious spread of legal cynicism and distrust of the police.

Apart from the contagion argument, residence in a neighborhood housing many former prisoners may facilitate an individual's criminal activity through expansion of criminal opportunities (18). Whereas the mechanisms are different across the contagion and opportunity perspectives, the empirical predictions are similar. The concentration of returning prisoners into a select few neighborhoods likely produces elevated rates of criminal activity.

Of course, ex-prisoners are not simply agents of criminogenic views (and providers of criminal opportunities), they are also recipients. In a study intriguingly yet aptly titled "Why do criminals obey the law?," the authors point out that among the criminal class there is great variation in the frequency of criminal offending, and that most criminals actually spend the majority of their time complying with the law (19). Variation in offending is explained by the composition of social networks. Members of street gangs—particularly, those whose social networks are inundated with criminal associates—are more likely to view the law and the police as illegitimate and therefore are more likely to engage in criminal behavior. Conversely, criminals who do not generally associate with other criminals are far more likely to have positive views of the criminal justice system than those who associate primarily with other criminals. As a consequence, criminals embedded in networks with noncriminals engage less often in criminal activity than those embedded in social networks with many other criminals. These findings provide support for Edwin Sutherland's theorizing on differential social organization; groups organized toward criminal activity can inundate individual members with motives and rationalizations conducive to crime, thereby increasing the probability that individual members will engage in criminal conduct (12, 14). In relation to concentrated prisoner reentry, if association with noncriminals is vital for desisting from crime, then residing in a neighborhood with limited access to prosocial peers would appear to elevate one's risk of recidivism.

Prior Evidence and Hypothesis

Though limited in number, a select set of prior research does provide some initial answers to whether concentrated prisoner reentry is predictive of subsequent criminal outcomes. Findings reveal that the rate of releases from prison to a neighborhood is positively associated with subsequent neighborhood rates of crime (20–22). However, the existing research literature does not sufficiently account for the possibility of omitted variable bias or other endogeneity problems that may lead to incorrect inferences about the effect of concentrated prisoner reentry on recidivism (23).[†] Omitted variable bias stems from unobserved factors that simultaneously determine the level of concentrated prisoner reentry in a neighborhood as well as rates of recidivism. For instance, failure to account for housing prices, which are predictive of the availability of housing for parolees as well as crime-related outcomes, may bias estimates of the relationship between concentrated prisoner reentry and recidivism rates.

In this study, I use a natural experiment to minimize the possibility that omitted confounders bias the observed relationship between concentrated prisoner reentry and recidivism. I hypothesize that concentrated prisoner reentry leads to increases in subsequent criminal recidivism rates. To test the emergent effects of the concentration of parolees on neighborhood rates of recidivism, in this study I use the property destruction in Louisiana induced by Hurricane Katrina in the summer of 2005 as an exogenous source of variation that influenced neighborhood changes in the concentration of parolees.

This paper builds, to some extent, on prior research using Hurricane Katrina as an exogenous source of variation to investigate criminal recidivism (24, 25). Whereas prior research focused on the effect of an individual's residential move on behavior—i.e., the effect of residential migration induced by Hurricane Katrina on an individual's likelihood to recidivate—the present paper is focused on a neighborhood-level causal mechanism and neighborhood rates of behavior. I recognize from prior research that individual residential mobility decisions influence criminal behavior, yet it is important to understand that individual residential moves following Hurricane Katrina may have combined to produce emergent effects through the concentration of parolees in geographic space. (Emergent effects are also known in the economics literature as social multipliers.) In essence, actions of individual yet interdependent actors combine to produce emergent properties of groups, which, in turn, affect rates of social behavior.

Post-Katrina Louisiana

In August 2005, Hurricane Katrina ravaged the Louisiana Gulf Coast, effectively damaging a vast majority of the housing stock in the New Orleans metropolitan area. For instance, in Orleans Parish (parishes are unique to Louisiana but equivalent to counties), 71.5% of housing units suffered some damage following Hurricane Katrina, with 56% of housing units significantly damaged (26). The extent of housing-unit destruction was similar in adjacent parishes. The consequence of this property destruction was a massive depopulation of the New Orleans metropolitan area. The population of Orleans Parish in July 2005 was 437,186,

[†]In one of the stronger research designs, Hipp and Yates (22) use fixed-effects estimation to examine the consequence of the growth in the parolee population in a census tract on crime rates. A potential advantage of this fixed-effects research design is its ability to isolate the effect of the concentration of parolees from all of the presumably time-stable characteristics of neighborhoods that also correlate with the concentration of parolees and crime rates. Yet, unmeasured time-varying characteristics related to both the concentration of parolees and crime may have biased their results. One likely unmeasured confounder is the change in property values associated with the run-up to the Great Recession. Because property values are likely related to the availability of housing for parolees as well as crime, the Hipp and Yates (22) estimation of the effect of parolee concentration may have been biased.

and declined to 158,353 by January 2006 (27). Repopulation of the region has been substantial, although not completely to pre-Katrina levels. In July 2006 the population of Orleans Parish was 208,548, and it increased to 336,644 by July 2008 (28). In comparison, the population of Baton Rouge increased from 220,975 in July 2005 to 229,995 in July 2006, and the population of Lafayette during that same period increased from 113,740 to 117,035 (29). Although population counts have relatively stabilized in New Orleans, the important point for the ensuing analysis is that neighborhood population change in the Louisiana Gulf Coast region during the first few years following Hurricane Katrina was substantial.

One consequence of the property destruction from Hurricane Katrina was a dispersion post-Katrina of Louisiana parolees away from select New Orleans metropolitan neighborhoods to other residential locations throughout the state (24, 25). For instance, Fig. 1 provides a snapshot of the post-Katrina geographic redistribution of parolees. This figure shows in which parish parolees resided immediately following their exits from prison. Pre-Katrina, nearly 50% of prisoners convicted in the New Orleans metropolitan area returned to Orleans Parish. Post-Katrina, this number dropped to 20%. In the post-Katrina period, many parolees dispersed throughout the state, often to other urban areas. This pattern developed because parolees who were released from prison post-Katrina had substantially reduced residential choices in New Orleans relative to their pre-Katrina counterparts. In many areas the growth in the number of new parolees outpaced the population growth from Katrina evacuees, in part because an overwhelming majority of new parolees were required to remain in Louisiana as a condition of parole, whereas the general population could leave the state. The changes in residential patterns resulting from this natural disaster provide a means for investigating what would happen to reincarceration rates if ex-prisoners were dispersed across space instead of clustered into select urban neighborhoods.

Accordingly, I compare the change in reincarceration rates across two time periods (i.e., immediately following Hurricane Katrina and one year later) in "treatment" neighborhoods that experienced a change in the concentration of parolees, relative to "control" neighborhoods that did not experience such a change in parolee concentration. The changes in reincarceration rates over time in the control neighborhoods serve as a counterfactual for what the trend in reincarceration rates would have been in treatment neighborhoods had there not been a change in the concentration of parolees. In this way, the natural experiment provides some analytic leverage for attempting to isolate the specific effect of the concentration of parolees from the other adversities that typically are found in disadvantaged neighborhoods.

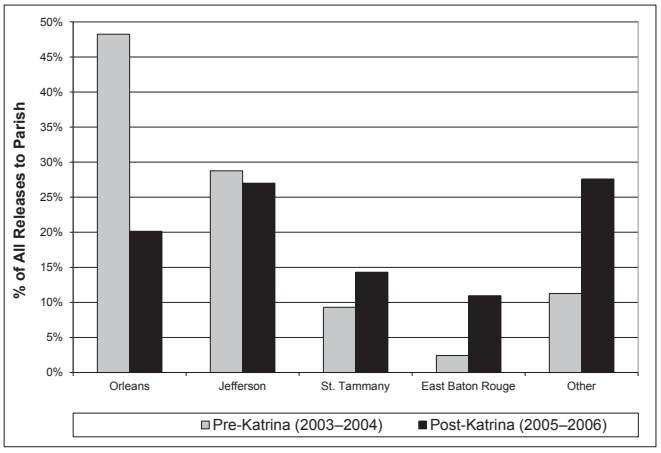

Fig. 1. Parish of release for ex-prisoners originally from New Orleans.

Materials and Methods

This research was approved by the University of Texas at Austin Institutional Review Board (IRB) (IRB protocol no. 2009-10-0020). This analysis draws on data from parolees in the Louisiana Department of Public Safety and Corrections (DPS&C), including information on the residential addresses of new parolees in the state and the number of those parolees who were reincarcerated within 1 y. The analytic sample is drawn from prisoners released from Louisiana correctional facilities in two separate time periods. A first cohort (n = 2,859) is composed of releases from a Louisiana prison to parole supervision immediately following Hurricane Katrina (i.e., from September to December 2005). A second cohort (n = 2,555) consists of releases to parole supervision 1 y later, between September and December 2006. (Approximately 90% of prisoners released each year from Louisiana prisons are released onto parole supervision. The remaining 10% do not require postincarceration supervision.) Assuming that the macro-level shock from Hurricane Katrina affected reincarceration in unforeseen or unmeasured ways, I attempt to control for this shock by using only those cohorts released post-Katrina—i.e., one cohort released in 2005 and a second released in 2006. During the first couple of years following Hurricane Katrina, many ZIP codes throughout the state experienced a fluctuation in the number of parolees, because the New Orleans metropolitan area was first evacuated and then redeveloped.

I used residential address information available from DPS&C records to geocode parolees to their respective ZIP codes; this is the unit of analysis used in the statistical models to follow. This ZIP-code assignment represents where a parolee resided immediately upon release from prison. Research on prisoner reentry in other states suggests that parolees move frequently—an estimated 2.6 times per year for the median parolee—although typically to other locations within the same metropolitan area (30). Accordingly, I assume that parolees in Louisiana often move to new residences within the same metropolitan area, but suggest that such residential mobility among individual parolees does not fundamentally alter the macro pattern of concentrated prisoner reentry. Given the general lack of housing opportunities for former prisoners combined with their relatively low income levels, I expect that even when ex-prisoners move to a new place of residence, they are moving to areas with similar concentrations of returning prisoners.

After I determined ZIP-code locations of ex-prisoners, I aggregated the data to the ZIP-code level to determine the total number of parolees in a ZIP code across the two time periods. On the basis of the count of parolees in a ZIP code and an estimate of the yearly population count in a ZIP code from Geolytics, I computed a measure of parolee concentration based on the number of parolees per 1,000 residents in a ZIP code (my treatment variable). Using data on recidivism from the DPS&C, I also computed a measure of the number of parolees in a given cohort released to each ZIP code who were subsequently reincarcerated for a new felony conviction or a parole violation within 1 y of prison release (my outcome variable).

In addition to the Louisiana DPS&C data, I draw upon ZIP-code and parish-level data from the Louisiana Department of Labor, Geolytics, the US Postal Service, and the Supreme Court of Louisiana. These data are used to control for observed differences in ZIP code and parish conditions across time and space, to isolate the specific effect of parolee concentration on reincarceration rates. One important control variable is the average time served in prison by neighborhood parolees. It may be the case that more crime-prone individuals reside (i.e., select into) in areas with numerous ex-prisoners. To account for geographic variation in the risk of recidivism among neighborhood parolees, I include a measure of average time served by parolees (further details about data and measures are given in *SI Text*).

Conceptually, the empirical analysis to follow is based on a comparison of the rate of reincarceration between otherwise equivalent neighborhoods, where treatment neighborhoods are characterized by a growing concentration of ex-prisoners. To estimate the effect of the concentration of prisoner reentry on reincarceration rates, I use a difference-in-differences (DID) estimation strategy and capitalize on two sources of variation: (*i*) between-neighborhood differences in the concentration of parolees (i.e., where the concentration of parolees is the treatment condition) and (*ii*) within-neighborhood change over time in the concentration of parolees (31). In essence, I compare changes in reincarceration in treatment neighborhoods between 2005 and 2006 $(Y_1^T - Y_0^T)$ with changes in reincarceration in control neighborhoods $(Y_1^C - Y_0^C)$, where the superscripts identify the treatment status and the subscripts denote the time period. In this case, the control group reveals what would have happened to the treatment group—in terms of changes in reincarceration—in the absence of treatment (i.e., if the

concentration of ex-prisoners had not changed). The resulting treatment effect is the difference between these two quantities: $(Y_1^T - Y_0^T) - (Y_1^C - Y_0^C)$.

This methodological approach is beneficial because a comparison of control and treatment neighborhoods at a single time point may not yield valid inferences about the effects of the concentration of prisoner reentry because control and treatment neighborhoods may differ in other characteristics besides the concentration of parolees (i.e., unobservable heterogeneity across neighborhoods). For instance, neighborhoods may differ on unmeasured factors such as the extent of disorderly conditions, the number of churches and other neighborhood institutions, and land use indicators (e.g., the density of alcohol-selling establishments), which may be predictive of both the concentration of parolees and recidivism (32, 33). Moreover, a before-and-after comparison of reincarceration within the same neighborhood would be inadequate given that changes in addition to changes in the concentration of parolees surely occurred in the neighborhood during the observation period (i.e., unobservable heterogeneity across time). For instance, a temporal decline in recidivism across all neighborhoods may have occurred because of a shifting political climate and the fiscal need to reduce the amount of state funds spent on incarceration.

A key assumption of the DID approach is that the change in the reincarceration rate would be the same across treatment and control neighborhoods if both experienced the same change over time in the concentration of parolees. In the absence of any kind of change in the concentration of parolees, the temporal change in reincarceration would be the same for treatment and control groups. Satisfying this "parallel trends" assumption becomes problematic when some factor besides the treatment affects the treatment group but not the control group.

To undertake a DID model, I pool cross-sections of data (i.e., 2005 and 2006 observations) for ZIP codes in Louisiana. Because my interest is in the effect of concentration, and a vast majority of ex-prisoners return to urban areas, I restrict the data to include only ZIP codes within core-based statistical areas. Whereas the addition of ZIP-code and parish-level control variables does reduce the possibility of violating the parallel-trends assumption, to further ease the possibility, I exclude New Orleans ZIP codes from the main analysis (i.e., ZIP codes from Orleans, Jefferson, Plaquemines, St. Bernard, and St. Tammany parishes). It is possible that Hurricane Katrina affected these parishes in unmeasured ways, such that there were additional factors affecting treatment neighborhoods in New Orleans that did not affect control neighborhoods elsewhere in the state. The point of restricting analyses to those ZIP codes outside the New Orleans metropolitan area is to make a more plausible case that I have satisfied the parallel-trends assumption that is core to the DID framework.[‡] A total of 493 ZIP codes are used in this analysis.

Eq. **1** specifies the model estimated with a negative binomial regression:[§]

$$\log E(Y_{it}|X_{it}) = \beta_0 + \beta_1 ZIP_{it} + \beta_2 Parish_{it} + \beta_3 Year06_t + \beta_4 Concentration_{it} + \delta(Year06_t * Concentration_{it}) + log(NewParolees_{it}) + \varepsilon_{it}, \quad [1]$$

where Y_{it} is the number of individuals from a given cohort t (2005 or 2006) in ZIP code i who were reincarcerated to prison within 1 y following release from prison; X_{it} denotes the independent variables, expressing that the expected number of individuals who were reincarcerated is conditional upon various geographic characteristics; *ZIP* is a vector of ZIP-code characteristics, used to account for differences in ZIP-code socioeconomic conditions, the availability of housing, the availability of social service resource providers, the average time served in prison by ex-prisoners, and the prior recidivism rate; *Parish* is a vector of parish characteristics, used to account for differences in parish socioeconomic conditions and criminal justice practices; *Year06* is a dummy variable indicating the cohort of prison release (i.e., release year 2006 = 1 and 2005 = 0); *Concentration* indicates the extent of the concentration of parolees in a ZIP code per cohort year (i.e., the number of parolees per 1,000 residents in a ZIP code). In this case, the measure of concentration is analogous to a treatment dosage—i.e., the concentration of parolees in a ZIP code is a dose—and the model reveals whether the level of dosage affects the reincarceration rate; *NewParolees* is a measure of the number of parolees released to each ZIP code i in a given cohort t; it is a measure of exposure.

In Eq. **1**, β_3 represents the time trend in reincarceration that is common across ZIP codes. In other words, it captures differences across time common to ZIP codes. β_4 accounts for any systematic differences between ZIP codes that are constant across time periods. The coefficient δ is the key parameter of interest, and it identifies the effect of the concentration of parolees on reincarceration rates; it reveals the effect on reincarceration rates of the increasing concentration of parolees in Louisiana between the 2005 and 2006 time periods. In equation form, $\hat{\delta} = ([\overline{Y}_1^T] - [\overline{Y}_0^T]) - ([\overline{Y}_1^C] - [\overline{Y}_0^C])$.

Results

Table 1 presents results from the estimation of Eq. **1**. The first model is estimated without controls for ZIP code or parish characteristics; the second model includes these controls; and the third model adds a measure of the prior (i.e., 2003) recidivism rate. Exponentiation of the intercept value in model 1 (exp[−1.700]) reveals that the average 1-y reincarceration rate was 0.182 for ex-prisoners released in 2005 immediately following Hurricane Katrina and 0.223 (exp[−1.700 + 0.199]) for ex-prisoners released 1 y later. These recidivism statistics are consistent with national averages (11). To facilitate interpretation of the intercept, the concentration of parolee variable is centered on 1, so the exponentiated intercept is interpreted as the reincarceration rate in a ZIP code with a concentration of one parolee per 1,000 residents. Thus, even in a neighborhood with very few new parolees, it is still expected that ∼20% of recently released parolees will be back in prison for a new felony conviction or a parole violation within 1 y.

Turning to the treatment effect, the significant positive interaction between parolee concentration and the time period ($\delta = 0.111$) indicates that ZIP code reincarceration rates are a positive function of the extent of the concentration of parolees. On the basis of model coefficients, Fig. 2 shows the relationship between parolee concentration and the reincarceration rate. For each additional parolee released to a neighborhood per 1,000 residents, the reincarceration rate increases by 11%, producing a concave up shape. So, for example, the reincarceration rate in a neighborhood with two new parolees per 1,000 residents is 0.247, which is 11% greater than 0.223.

To put these numbers into context, most ZIP codes in Louisiana experience fewer than one new parole release per 1,000 residents, but ∼10% of Louisiana ZIP codes receive more than two new parolees per 1,000 residents and 5% receive more than three new parolees per 1,000 residents. In areas of extreme concentrations of ex-prisoners, more than one-third of recently released prisoners are expected to be back in prison in less than 1 y, which can be seen in the right tail of the distribution in Fig. 2.

Model 2 adds controls for ZIP-code and parish-level factors designed to account for systematic differences between ZIP codes and parishes other than the concentration of parolees. Coefficients for the control variables are centered on their grand means. As expected, the ZIP-code reincarceration rate is negatively related to wages earned, although associations with all other control variables are nonsignificant. After controlling for observable differences in socioeconomic conditions, housing availability (i.e., the ratio of dwellings to population size), access to resource providers, judge caseloads, and average time served by ex-prisoners between ZIP codes and parishes, I still find a positive effect of parolee concentration on reincarceration ($\delta = 0.118$).

Model 3 controls for the prior rate of recidivism to account for unmeasured differences across space that contribute to recidivism. Results are consistent with the previous models. In summary, these findings indicate that parolees who reside in neighborhoods with high concentrations of other parolees are significantly and substantially more likely to be reincarcerated than those who reside in neighborhoods with relatively few other parolees.

[‡]Though there are sound methodological reasons for excluding New Orleans ZIP codes from the main analysis, for the sake of thoroughness I also reestimated models including these ZIP codes. These results are found in *SI Text*. Ultimately, my inferences are not sensitive to whether I include or exclude ZIP codes from New Orleans.

[§]In *SI Text*, I estimate a similar model with a spatial lag of the dependent variable added. This modeling strategy is designed to account for any spatial dependence in neighborhood recidivism rates. However, results reveal that recidivism rates in surrounding neighborhoods are not a significant predictor of recidivism rates in focal neighborhoods.

Table 1. Difference-in-differences estimates of Louisiana reincarceration

	Model 1		Model 2		Model 3	
Variables	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE
Intercept	−1.700	(0.062)***	3.155	(5.386)	3.239	(5.910)
Concentration of parolees	−0.008	(0.036)	−0.049	(0.057)	−0.055	(0.060)
Year 2006 (vs. 2005)	0.199	(0.067)**	0.219	(0.074)**	0.217	(0.075)**
Concentration of parolees × year 2006	0.111	(0.051)*	0.118	(0.054)*	0.120	(0.054)*
Concentrated disadvantage			0.031	(0.036)	0.034	(0.040)
Proportion renters			0.271	(0.413)	0.278	(0.454)
Average weekly wage			−0.140	(0.043)***	−0.137	(0.045)**
Ratio dwellings to population			−0.064	(0.321)	−0.029	(0.385)
Nearby service providers			0.040	(0.155)	0.046	(0.153)
Judge caseloads			−0.005	(0.007)	−0.004	(0.007)
Average time served			−0.054	(0.045)	−0.052	(0.050)
Prior recidivism rate (2003)					0.190	(0.198)

The dependent variable is the 1-y reincarceration rate. The coefficients and SEs for average weekly wage, nearby service providers, and judge caseloads are multiplied by 100.
*$P \leq 0.05$; **$P \leq 0.01$; ***$P \leq 0.001$ (two-tailed test).

Discussion

Considerable social science attention has been devoted over the past three decades to understanding the causes and consequences of concentration effects—in particular, poverty (34, 35). In the case of the concentration of ex-prisoners, ∼625,000 prisoners are released each year, and most return to a select few neighborhoods in urban areas. Surely, such a spatial pattern is of consequence. Absent a randomized place-based intervention at the neighborhood level, however, estimating the causal consequences of concentration effects is challenging. Neighborhoods that differ in the concentration of a select social dynamic (e.g., the concentration of the impoverished or the criminal) may also systematically differ in unmeasured confounding factors such as the extent of neighborhood disorder or the presence of social institutions such as churches, thereby leading to selection bias in estimates of concentration effects. This study used Hurricane Katrina as a natural experiment to investigate the consequences of one particular form of concentration: the extreme clustering of ex-prisoners in space. The results of my analyses suggest the greater the concentration of ex-prisoners in a neighborhood, the greater the rate of subsequent recidivism.

The reasons why ex-prisoners concentrate in a select few urban neighborhoods include personal factors such as social ties to the neighborhood. However, there are also important institutional and structural barriers that lead to this clustering. First, many states legally require parolees to return to their county of conviction or last residence when they exit prison (36). Louisiana is one of the states in which there is no such geographic restriction, thereby making it legally possible for parolees to move away from their home parishes in the wake of Hurricane Katrina (24). A consequence of parole residency restrictions is that many ex-prisoners return to the same urban neighborhoods where they resided before incarceration, or within a few miles of their prior neighborhood. Second, scarce housing opportunities funnel ex-prisoners into those neighborhoods where residence may be possible for them.

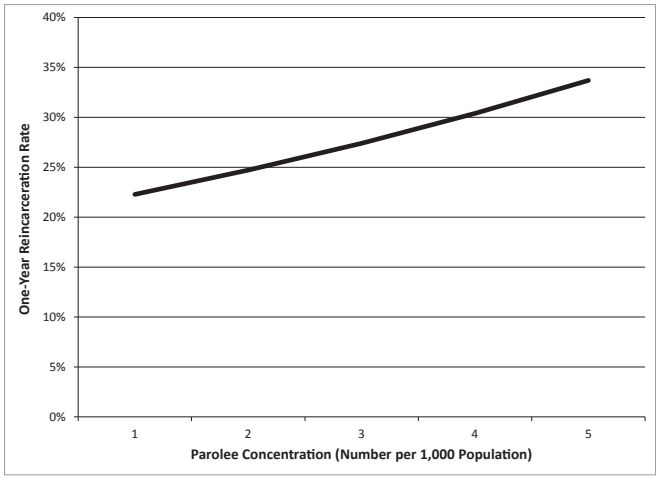

Fig. 2. Estimated reincarceration rates by neighborhood concentration of parolees in Louisiana.

The lack of housing for ex-offenders is certainly a function of the limited income, wealth, and job prospects of the typical offender, but it is also the product of the unwillingness of owners and landlords in the private housing market to rent to felons and the combination of long waiting lists for public housing assistance and subsidies and the unwillingness of public housing authorities to provide units or vouchers to felons.

The results presented in this study suggest that although parole and public housing policies and practices were designed, in principle, to enhance public safety, they may in fact be undermining it. Put simply, the alarming rates of recidivism in the United States are partly a consequence of the fact that many individuals being released from prison ultimately reside in the same neighborhoods as other former felons. Concentrating ex-offenders in the same few neighborhoods contributes significantly and substantially to the high rates of recidivism and incarceration in the United States. Dispersing the geographic concentration of parolees, though leading to some geographic displacement of incarceration and recidivism, would likely yield a net reduction in recidivism in aggregate.

An important avenue for future research on the concentration of former prisoners, and of social problems more generally, is to distinguish between endogenous effects and contextual effects (37).[¶] In the present example, the former effect refers to whether the criminal behavior of an individual is influenced by the criminal behavior of other individuals in the neighborhood (i.e., contagion), whereas the latter effect refers to whether the behavior of an individual reflects exogenous characteristics of

[¶]Individuals in the same group or neighborhood may also behave similarly because of correlated effects—i.e., because individuals with similar characteristics tend to associate with one another.

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neighborhood residents such as income or education. With the available data I am unable to precisely pinpoint the reason why the concentration of parolees is predictive of recidivism, but there is theoretical reason to believe that neighborhoods inundated with formerly incarcerated individuals become characterized by the contagious spread of criminogenic influences and opportunities. In particular, a cynicism and distrust of the law may spread through social networks. When the law is viewed as illegitimate and with cynicism, individuals are less likely to comply with it (15, 19, 38). Testing intervening mechanisms, such as the contagious spread of legal cynicism, that explain the relationship between concentrated prisoner reentry and rates of recidivism is an important avenue for future research.

There are many reasons why former prisoners recidivate—most often noted are indicators of individual "pathology," such as a lack of education, skills, or self-control, as well as drug addiction. However, addressing concentration effects is also vital for curtailing recidivism. According to the findings presented in this study, to reduce recidivism, an alternative, place-based strategy is worth considering, one that disperses the formerly incarcerated population instead of concentrating it into select urban neighborhoods. This policy prescription has been noted previously, although the challenge of implementation remains. Subculture-of-violence theorists suggested decades ago that to break the contagion of subcultural influences, subculture members needed to be dispersed across geographic space (13). This dispersion may be accomplished by loosening parole residency restrictions and by providing public housing subsidies and relocation assistance to ex-felons. The caveat is that public housing opportunities should not be concentrated in the same general areas of a given city, because this would merely shift the concentration of former offenders to a new location rather than dispersing the population of formerly incarcerated individuals.

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