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Race-Specific Employment Contexts and Recidivism

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ABSTRACT

Although a large literature has examined macro-level employment contexts and crime rates and, at the individual level, employment and offending, few studies have systematically examined whether macro-level employment contexts influence individual-level offending. At the same time, an emerging literature on prisoner reentry increasingly underscores the potential importance of the social environment for impeding or facilitating successful transitions back into society. All three avenues of inquiry have emphasized the salience of race-specific and offense-specific effects. This study extends prior work on ecology and offending, employment and crime, and prisoner reentry by examining race-specific effects of unemployment rates and manufacturing employment rates on violent, property, and drug recidivism. Analyzing data on male ex-prisoners released to 67 counties in Florida, we found, as hypothesized, that black ex-prisoners released to areas with higher black male unemployment rates have a greater likelihood of violent recidivism. No comparable effect was identified for whites. However, we found that white ex-prisoners, especially those without prior violent convictions, have a lower likelihood of violent recidivism when released to areas with higher white male manufacturing employment rates. We discuss the findings and their implications for theory, research, and policy.

Key words: employment, recidivism, ex-prisoner reentry

INTRODUCTION

Scholars have focused considerable attention on the relationship between work and crime. One line of inquiry has focused on the ecological association between unemployment rates and crime rates (e.g., Cantor and Land, 1985, 2001; Chiricos, 1987; Freeman, 1983; Gould et al., 2002). Another has focused on the relationship between unemployment and criminal involvement at the individual level (Baron, 2004, 2008; Farrington et al., 1986; Magdol et al., 1997; Ploeger, 1997). However, scant attention has been paid to combining the insights from these parallel lines of inquiry to investigate the possible effects of employment contexts on individual-level offending and, in particular, the recidivism of released prisoners.

This oversight is notable for at least three reasons. First, criminologists increasingly have turned their attention to examining ways in which social ecology may influence individual-level behavior (e.g., Elliott et al., 1996; Gottfredson and Taylor, 1985, 1988; Kubrin and Stewart, 2006; Mears et al, 2008; Peeples and Loeber, 1994; Sampson et al., 2002). Second, existing empirical studies, though few, have established that "the economic and occupational context in which individuals live and work has effects on their criminality above and beyond other individual characteristics" (Crutchfield and Pitchford, 1997: 102; see also Bellair and Roscigno, 2000; Bellair, et al., 2003; Crutchfield, 1995). Third, theoretical arguments suggest that labor markets may affect individual criminal behavior and that it may do so in ways that affect some racial groups more than others. For example, Wilson (1987, 1996) has argued that the concentration of joblessness, as a result of transformations of the American economic system, has contributed to urban violence among black males.

Employment contexts may be especially salient for ex-prisoners because a successful

reintegration into society may depend heavily on the availability of legitimate work opportunities (Bushway et al., 2007). For that reason, the employment prospects for released prisoners, already dim due to their criminal record, may be sensitive to the labor market conditions they face when they return to their home communities. For example, several studies have found that social environment can play a critical role in helping inmates obtain post-release employment (La Vigne et al., 2004; Sabol, 2007). The expectation, according to scholars, is that such employment should in turn facilitate successful prisoner reentry (Bushway and Reuter, 2002; Case and Fasenfest, 2004; La Vigne et al., 2004; Raphael and Weiman, 2007; Sampson and Laub, 1993a; Uggen, 2000; Visher and Travis, 2003). As Bushway et al. (2007: 1) have noted, labor markets, as formative social institutions, are integral to "the successful reentry and reintegration of released prisoners into their families and communities." Thus, ex-prisoners released into weak labor markets face a significant risk of recidivism. "Poor labor-market prospects," Bushway and his colleagues have argued, "make ex-prisoners more likely to fall into a vicious cycle, a revolving door of prison release, crime, and reincarceration" (p. 1).

Although the link between employment contexts and ex-prisoner offending has been suggested by prior research, it has not been empirically established (see, however, Raphael and Weiman, 2007). Investigation of the link has the potential not only to inform our understanding of the work-crime relationship but also to extend scholarship on the relationship between macro-level conditions and individual-level offending. At the same time, it affords an opportunity to inform scholarship on and policy discussions about factors that facilitate or impede successful reentry (Bushway et al., 2007; Raphael and Weiman, 2007; Sabol, 2007; Sviridoff and Thompson, 1983; Western, 2007). Efforts to identify such factors are relevant given that over 735,000 prisoners are released annually (Sabol et al., 2009) and that roughly two-thirds will be rearrested within three years of release (Langan and Levin, 2002).

Against this backdrop, then, this paper examines the effects of employment contexts and opportunities on ex-prisoner recidivism. Researchers have found that employers are more reluctant to hire former prisoners than any other group of disadvantaged workers. However, the manufacturing industry historically has been more willing to hire former prisoners (Holzer et al., 2002, 2003a-b, 2007). For this reason, we focus particular attention on the effects of employment opportunities in the manufacturing sector. In addition, because race features prominently in theoretical accounts of the link between employment, shifts in the economy, and crime (e.g., Wilson, 1987; Parker, 2008), we examine the effect of race-specific employment contexts on offense-specific recidivism outcomes. Below, we begin first by discussing prior theory and research, and then present hypotheses derived from this work. Next, we describe the data, measures, and methods used in this study. After presenting the findings, we conclude by discussing the implications of this study for theory, research, and policy.

BACKGROUND

Prisoner Reentry and Employment Contexts

Since the 1970s, America has embarked on what some have termed a period of mass incarceration (Gottschalk, 2006). Whatever the causes of this prominent shift in penal policy, the result is the return of unprecedented numbers of ex-prisoners to society (Clear, 2007; Nagin et al., 2009). Despite this change, relatively little is known about the barriers and facilitators to

successful reentry (Petersilia, 2003; Visher and Travis, 2003). Even less is known about social ecology and how it may influence the reentry process. It bears mention that social ecology includes a variety of units of analysis, ranging from lower levels of aggregation (e.g., tracts, blocks) to higher levels of aggregation (e.g., cities, counties).

Some exceptions exist, however. For example, a number of studies highlight the salience of ecological-level social disadvantage. Some scholars have found that that a return to socially disadvantaged areas may contribute to increased recidivism among released prisoners (Gottfredson and Taylor, 1985, 1988; Kubrin and Stewart, 2006; Mears et al., 2008; Reisig et al., 2007). Gottfredson and Taylor's (1985) study, which examined 500 ex-inmates released to 90 Baltimore neighborhoods, is illustrative. Although they identified no direct effects of social environmental characteristics on individual-level recidivism, a significant person-environment interaction was observed—offenders with extensive criminal histories were more likely to fail when released to "bad" environments. In a follow-up study, the authors observed no direct or interactive effects of social environmental factors on individual-level recidivism (Gottfredson and Taylor, 1988). However, when they conducted a neighborhood-level analysis, they found that community factors "contribute significantly to the prediction of recidivism rates even when offender characteristics and 'offender density' are controlled" (p. 78). Several recent multilevel studies, which have used neighborhoods or counties as the contextual-level unit of analysis, have identified significant effects of social ecology on recidivism, net of individual-level characteristics (e.g., Kubrin and Stewart, 2006; Mears et al., 2008; Reisig et al., 2007). These studies, too, have echoed Gottfredson and Taylor's (1988: 80) recommendation that future studies should undertake more detailed micro-level and crime-specific analyses. They also have emphasized the importance of investigating racial variation in the effects of social ecology.

Notwithstanding this body of work, the recommendations emanating from it, and the burgeoning literature on prisoner reentry, there has been little attention given to employment contexts, especially at the county level, and their potential effects on reentry outcomes. The oversight is significant because, as Bellair et al. (2003) have argued, "[county-level] labor market opportunity is more fundamental and causally prior to the community-level disadvantages that are often given analytic priority" (p. 8). It also is significant because the employment prospects in the areas to which ex-prisoners return may affect whether they can find gainful employment and, by extension, avoid becoming involved in criminal activity (Raphael and Weiman, 2007; Visher and Travis, 2003). Scholars have suggested precisely this possibility. As Bushway et al. (2007) have noted, for example, the labor economics literature suggests that "unemployment rates are correlated with an individual's chances of finding a job, especially for those such as released prisoners who are at the tail end of the job queue" (Bushway et al., 2007: 14; see also Bushway and Reuter, 2002; Holzer, 2009a; Raphael and Weiman, 2007; Sampson and Laub, 1993a; Uggen, 2000; Visher and Travis, 2003).

The employment challenges released prisoners face stem in part from the fact that they constitute "a particularly disadvantaged segment of the labor market," that "incarceration has forced them to spend extended periods out of the labor market," and that employers face barriers when trying to hire ex-offenders (Sviridoff and Thompson, 1983: 212; see also Holzer et al., 2003b; Pager, 2003, 2007; Western, 2002, 2007; Western and Pettit, 2000). In addition, the social stigma associated with an official record of offending may play a more pronounced role in reducing ex-felons' access to high-status or career jobs (Western, 2007: 340).

To our knowledge, only two studies have assessed the link between employment contexts

and prisoner reentry. In one study, Sabol (2007) documented that, among ex-prisoners, county unemployment rates were negatively associated with the time to finding a first job after release from incarceration. He concluded that labor market conditions may affect ex-prisoners' post-release employment opportunities. In particular, "when labor markets are tight, employers may dip in the ex-prisoner pool to meet their demands for labor and hire ex-prisoners" (p. 290). In a separate study, Raphael and Weiman (2007) found moderate effects of county unemployment rates on the likelihood that paroled offenders were reincarcerated. They concluded that an ex-prisoner released under favorable labor market conditions may be more likely to seek legitimate employment and thus be less likely to engage in crime for personal gain than an otherwise similar ex-prisoner released under less favorable labor market conditions (p. 307). These two studies, along with recent research on prisoner reentry transitions, suggest that labor market conditions may indeed affect recidivism among ex-prisoners.

Employment Contexts, Individual-Level Offending, and Race

Some scholars have argued that shifts in the labor market influence criminal behavior and may do so in ways that disproportionately affect blacks. For example, Wilson (1987) has suggested that the increases in unemployment in urban areas contributed to urban violence among black males in the 1980s (see also Parker, 2008; Wilson, 1996). In Wilson's (1987) view, the loss of jobs was associated with transformations of the American economic system, such as "the shift from goods-producing to service-producing industries, . . . and the relocation of manufacturing industries out of the central cities" (p. 39). As manufacturing jobs in urban areas declined, blacks, due to residential segregation, were unable to follow employers outside of the inner city and metropolitan areas (Parker, 2008; Wilson, 1987). At the same time, the employment opportunities that emerged were service-based, with most job growth occurring in industries that required higher education; these shifts in the labor market did little to increase the number of potential employment opportunities available to low-skilled workers in such areas (Kasarda, 1992; Parker, 2008; Wilson, 1987).

The sum result of such changes has been a social isolation that, according to Wilson (1987), has hampered the ability of low-skilled blacks to gain access to gainful employment. In addition, the isolation "generates behavior not conducive to good work histories" (Wilson, 1987: 60). Specifically, "the less frequent the regular contact with those who have steady and full-time employment (that is, the greater the degree of social isolation), the more likely that initial job performance will be characterized by tardiness, absenteeism, and, thereby, low retention" (p. 61). In such a context, individuals—poor blacks in particular (p. 57)—turn to "either underground illegal activity or idleness or both" (p. 61).

A link between macro-level employment conditions and individual-level offending is suggested by other work (Parker, 2004, 2008; Sampson and Wilson, 1995; Shihadeh and Ousey, 1998). At the same time, theoretical grounds other than those articulated by Wilson (1987) exist for anticipating a link between employment contexts and individual-level offending, as well as for anticipating differential effects on blacks. According to strain theory, for example, deprivation, either absolute or relative, heightens feelings of anger and frustration that result in crime (Agnew, 2001; Bernard, 1990). Should deprivation be greater among some groups, it can be anticipated that violence will be greater among them. For example, and of particular relevance for this paper, Blau and Blau (1982) have argued that blacks are more vulnerable to industrial

restructuring and unemployment due to declines in manufacturing jobs. As a result, deprivation and joblessness among blacks should lead to more or intensified frustration and anger, and, in turn, contribute to greater violence among blacks (see also Parker, 2004, 2008).

Unemployment, Crime, and Individual-Level Recidivism

The above two lines of inquiry—prisoner reentry, on the one hand, and theory and research on how macro-level employment contexts do or should affect individual-level offending, on the other hand—suggest that employment contexts may affect the recidivism of released inmates. They also point to the potential salience of race for understanding any such relationship. Still another line of inquiry, one that focuses on the relationship between unemployment and crime at both the macro- and individual-levels, suggests warrant for investigating these possibilities.

A large body of research has examined the association between unemployment and crime at the aggregate level (e.g., Britt, 1994, 1997, 2001; Cantor and Land, 1985, 2001; Carlson and Michalowski, 1997; Chamlin and Cochran, 2000; Chiricos, 1987; Gould et al., 2002; Greenberg, 2001; Hale and Sabbagh, 1991; Ihlanfeldt, 2007; Kleck and Chiricos, 2002; Krivo and Peterson, 2004; Land et al., 1995; O'Brien, 2001; Paternoster and Bushway, 2001; Raphael and Winter-Ebmer, 2001; Witt et al., 1999).[1] For example, Grogger (2006), Parker (2008), and Wallman and Blumstein (2006) have suggested that labor market conditions can be used to account for the crime drop in the 1990s. Using a wide variety of data sources and methodologies, these and other studies have produced several findings: first, unemployment rates are positively associated with crime rates (Weiman et al., 2007: 44); second, the association is stronger for property crimes (Chiricos, 1987; Raphael and Winter-Ebmer, 2001; Weiman et al., 2007); third, unemployment rates appear to have a direct effect on violent crime rates (Krivo and Peterson, 2004); and fourth, they may exert an indirect effect on violent crime through such mechanisms as changes in female-headed households (Messner and Sampson, 1991; Sampson, 1987).

The positive association between unemployment rates and crime rates does not necessarily mean that unemployed individuals are more likely to commit crimes than employed individuals (Farrington et al., 1986). The reason, in part, is that what unemployment rates represent differ conceptually from what unemployment for an individual represents.[2] Scholars thus have focused on the relationship between individual-level unemployment and criminal behavior. Studies to date have established that unemployed individuals are more likely to be involved in property crime (Baron, 2008; Farrington et al., 1986), violent crime (Baron, 2004; Baron and Hartnagel, 1997; Magdol et al., 1997) and drug crime (Baron, 2008; Baron and Hartnagel, 1997) (see, however, Ploeger, 1997).

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[1] As one reviewer emphasized, much of this work focuses on youth populations and so may not necessarily directly extend to adults. In addition, although some of the studies focus on adults, they tend not to focus on ex-prisoners and so may not be generalizable to this population (Holzer et al. 2002, 2003a, 2003b, 2007). Our view is that the logic of the arguments for the unemployment-crime link seem to apply equally well, if not more so, for ex-prisoners, given their relatively greater disadvantage, compared to individuals who have no incarceration history, in obtaining gainful employment. One contribution of this study is to investigating that idea.

[2] Indeed, even among macro-level studies, "the meaning of the unemployment rate" can vary "at different analytic levels" (Land et al., 1995: 57).

The ecological- and individual-level research on unemployment and crime has significantly advanced scholarship. However, few studies have directly examined the question of whether employment contexts influence individual-level criminal behavior, especially among ex-prisoners. As a logical matter, the inattention is notable because of the considerable work on unemployment and crime at both the ecological-level and individual-level. It also is notable because presumably a weak labor market not only could partially contribute to individual-level unemployment but also could amplify its effects on individual-level offending. Not least, it is notable, as discussed above, because of the prominent role that scholars have attributed to labor market conditions and their influence on criminal behavior, including the recidivism of ex-prisoners, and because of theoretical arguments about how these conditions may influence such behavior in ways that are delineated along racial lines.

One exception that bears emphasis is work by Crutchfield and Pitchford (1997), who found that individuals residing in counties with larger percentages of people out of the labor force were more likely to engage in violence (see also Bellair and Roscigno, 2000; Bellair et al., 2003; Crutchfield, 1995). They argued that such contexts provided a criminogenic environment conducive to greater levels of offending. Separately, Crutchfield and Pitchford (1997) found that the effect of employment contexts was more pronounced among marginally employed individuals, such as those who were out of the labor force for a lengthy period of time. These individuals were more likely to act violently when they lived in areas with higher rates of unemployment. That finding has implications for investigations of prisoner reentry precisely because ex-prisoners typically have weak or marginal work histories (Holzer, 2009a) and, by dint of their incarceration, have experienced recent and extended periods of unemployment.

The Importance of Race-Specific Analyses of the Employment and Crime Nexus

As emphasized above, the literature on employment and crime, as with work on prisoner reentry, underscores the importance of race-specific analyses (Crutchfield, 1995; Holzer, 1987, 2009b; Holzer et al., 2005; Parker, 2004, 2008; Western, 2002; Western and Pettit, 2000; Wilson, 1987, 1996). At least three specific considerations suggest warrant for examining the employment and crime nexus through race-specific analyses. First, and as a general matter, considerable racial divides exist in the employment contexts and experiences of whites and blacks (Holzer, 1987; Massey and Denton, 1993; Parker, 2008; Western, 2007). For example, "blacks are disproportionately subject to fluctuation in unemployment" (Kohfeld and Sprague, 1988: 222; see also Holzer et al., 2005) and male joblessness is much more acute in black communities than in white communities (Sampson, 1987; Wilson, 1987, 1996).

Second, and in a related vein, scholars have highlighted that blacks and whites reside in highly different areas (e.g., Briggs, 2007; McPherson et al., 2001; Sampson, 1987; Sampson and Wilson, 1995). Indeed, according to Krivo and Peterson (2000: 557), the differences suffice to suggest that "it is imperative that models of crime . . . be explored separately for blacks and whites because the similarity of conditions required for combining groups (observing uniform effects) does not exist in the vast majority of places."

Third, and not least, prior work suggests that the employment challenges ex-prisoners face may be greater among blacks. For example, Holzer (2009a: 249) contends that demand-side studies and supply-side studies "leave little doubt that men with criminal records—and in particular black men—face much weaker demand for their labor than do comparable men

without these records" (see also Pager, 2003, 2007; Western, 2002, 2007).

THE CURRENT STUDY AND HYPOTHESES

This study examines the impact of race-specific employment contexts on recidivism for released prisoners, and in so doing aims to contribute to research on prisoner reentry and an emerging body of work that examines how ecological factors, and, in particular, labor market conditions, influence individual-level offending. Its main contribution is to fill a conspicuous gap in research that bears generally on reentry but also, and more specifically, on arguments about macro-micro linkages between ecological contexts and individual-level offending as well as arguments about how such linkages may be racially patterned. There exists, for example, little work that directly tests a central implication of Wilson's (1987, 1996) theoretical argument—namely, ex-prisoners, especially black ex-prisoners, released to areas marked by high rates of unemployment should be more likely to recidivate compared to those released to areas with low rates of unemployment.

To help address this research gap, we develop and then test two sets of hypotheses. The first set focuses on unemployment rates and their anticipated effects on recidivism, while the second focuses on manufacturing employment contexts. In each instance, we describe the differences in effects that we anticipate will emerge by ex-prisoner race and type of reoffending.

H1a: Higher unemployment rates will be positively associated with individual-level recidivism. As discussed above, theoretical arguments, such as those expressed by Wilson (1987, 1996), argue that poor labor market conditions can increase individual-level criminal involvement. Empirical research suggests that such an effect may exist (Bellair and Roscigno, 2000; Bellair et al., 2003; Crutchfield, 1995; Crutchfield and Pitchford, 1997), but it has not focused on incarcerated populations or, typically, on adults. This hypothesis is further suggested by reentry scholarship, which has advanced the argument that labor market conditions influence the successful transition of ex-prisoners back into society (Bushway et al., 2007; Raphael and Weiman, 2007; Sabol, 2007; Visher and Travis, 2003).

H1b: The effects of unemployment rates on individual-level recidivism will be more pronounced for black male ex-prisoners. Prior work establishes that ecological conditions differ among whites and blacks and that the effects of these conditions may vary by race. For example, Crutchfield (1995: 206), echoing Wilson's (1987) work, has argued that blacks are more likely to be pushed out of the labor force when industrial shifts and economic downturns occur (see also Holzer et al. 2005: 333). Indeed, Crutchfield (1995) found that employment contexts exerted a stronger criminogenic influence among blacks (p. 205). He thus concluded that crime in the black community seemed to be particularly sensitive to the impact of county-level labor market conditions (p. 208; see also Ihlandfeldt, 2007; Parker, 2008).

As discussed above, other lines of inquiry suggest warrant for arguing that race-specific differences may exist in the effects of employment contexts on recidivism. In one study, for example, Pager (2007) found that black ex-offenders faced greater stigma when seeking work: "even in cases where demand for employment is high, employers appear unwilling to overlook the 'two strikes' against black ex-offenders . . . The combination of minority status and criminal record create barriers to employment that appear virtually impossible to overcome" (p. 169; see also Pager, 2003). Pursuing a related avenue of investigation, Case and Fasenfest (2004) found that ex-prisoners' race had the most dramatic influence on how former prisoners perceived

post-release employment opportunities. More specifically, black male ex-offenders were more likely than their white counterparts to believe that they faced barriers to post-release employment. In addition, Case and Fasenfest (2004) found that "all but one of the white male participants was employed at the time of the focus groups. In contrast, only two-thirds of the black male participants were currently employed" (p. 31). In short, black ex-prisoners may face greater competition and hardship in finding and maintaining employment in a context in which their cumulative disadvantage is, on average, substantially greater than that of white ex-prisoners.

Despite such arguments and research, it can be argued that the criminogenic effects of returning to areas with relatively greater levels of unemployment may be no more pronounced among black ex-prisoners than among white ex-prisoners and, indeed, may be greater among whites. Why? Research shows that blacks, regardless of whether they have criminal record, already face poor job prospects. Consequently, the effect of criminal history or incarceration may be minimal for black ex-prisoners "because employers statistically discriminate against groups with high rates of incarceration (for example, young black low-skilled men)" (Pettit and Lyons, 2007: 204; see also Holzer et al. 2002, 2003a-b, 2006, 2007). That is, employers may discriminate against blacks in general and not do so to any appreciably greater degree for black ex-prisoners. By contrast, because incarceration among whites is less common, employers may view evidence of a criminal history among them "as a clear indicator of untrustworthiness, low productivity, or future criminality" (Pettit and Lyons, 2007: 206). Put differently, employers may use evidence of a prior record to discriminate more so against whites than blacks (Pettit and Lyons, 2007: 206-207).

H1c: The effects of unemployment rates will be more pronounced for property and drug recidivism as compared to violent recidivism. The central argument for such an effect is that unemployment should create economic strain and thus motivate ex-prisoners to engage in instrumental crime (Chiricos, 1987; Farrington et al., 1986; Weiman et al., 2007). Empirical research indirectly supports that argument. For example, Farrington et al. (1986) found that unemployed individuals were more likely to commit property crime. In addition, several studies have linked declines in property crime rates to decreases in unemployment rates (e.g., Gould et al., 2002; Hines et al., 2001; Raphael and Winter-Ebmer, 2001).

An equally compelling argument can be made, however, for the notion that adverse employment contexts should create a greater effect on violent recidivism. A failure to obtain employment, for example, may create strain and, in turn, anger, leading to violent, expressive acts of hostility (see, for example, Anderson, 1999; Bernard 1990; Crutchfield and Pitchford, 1997; Messerschmidt, 1986; Krivo and Peterson, 2004). To illustrate, Messerschmidt (1986) has contended that males marginal to the labor market may seek alternative ways to survive and to express their masculinity by engaging in violent property crime and competition for personal power through assaultive and homicidal behavior (see also Baron, 2004). Consistent with such an argument, Crutchfield (1995: 206) found in his study that "marginally employed people, no matter what their race or ethnicity, are more likely to be involved in crime, and in particular violent crime, when they reside in areas with concentrations of similarly employed people."

We turn now to our second set of hypotheses, which focuses more specifically on employment contexts in the manufacturing sector. This focus stems from two considerations. First, as emphasized in the earlier discussion, employers in the manufacturing industry, compared to other industries, historically have been more likely to hire ex-offenders (Holzer et

al. 2002, 2003a-b, 2007; Solomon et al., 2004). Second, Wilson (1987, 1996) and others have argued that disinvestment, deindustrialization, and shifts in the economy have contributed to a lack of manufacturing work, especially for blacks, which in turn may create greater levels of violence and crime (Parker, 2004, 2008; Sampson and Wilson, 1995).

H2a: Higher manufacturing employment rates will be negatively associated with individual-level recidivism. Specifically, and for the reasons articulated above, we anticipate that, net of any adverse effects of unemployment rates, greater opportunities for work in the manufacturing sector will be associated with a lower likelihood of recidivism.

H2b: The effects of manufacturing employment rates on individual-level recidivism will be more pronounced for black ex-prisoners. The logic parallels that for H1b. Black ex-prisoners face additional, accumulated disadvantages relative to white ex-prisoners, and so opportunities for gainful employment can be expected to exert stronger effects for them. As emphasized above, researchers have highlighted the importance of manufacturing employment opportunities for blacks. Duster (1987: 306), in particular, has argued that the high and sustained unemployment level among blacks is a function of the "decline of manufacturing and increase in advanced service-sector occupations in major cities, where a great bulk of the black population resides."

Once, again, however, an alternative argument can be made—greater opportunities for manufacturing employment may benefit white more than black ex-prisoners. The reasoning also parallels that for H1b. Because economic opportunities for blacks are scarce in general and manufacturing jobs are historically the very jobs that have provided employment for black males (Wilson, 1987, 1996), greater competition may exist among blacks to obtain work in the manufacturing sector. In such a context, black ex-prisoners may face little chance of successfully competing with black non-prisoners in obtaining manufacturing employment and so, by extension, there may be little to no effect of manufacturing employment opportunities on their recidivism. A fundamentally different situation may confront white ex-prisoners. Although the non-manufacturing sectors of the economy may discriminate against white ex-prisoners, the manufacturing sector may be willing to overlook a history of incarceration when making hiring decisions involving this group. In addition, because white males are not as dependent on the manufacturing sector for employment and represent a smaller proportion of those employed in this sector (Parker, 2008), white ex-prisoners may face less competition for jobs.

H2c: The effects of manufacturing employment rates will be more pronounced for property and drug recidivism as compared to violent recidivism. This hypothesis stems from the argument that manufacturing employment should reduce economic strain and thus reduce the need or motivation for ex-prisoners to engage in instrumental crime as a means of "making ends meet." However, following the logic of H1c, it may be that the effect of manufacturing employment opportunities is more pronounced for reducing violent recidivism.

Finally, a fourth hypothesis specific to manufacturing employment contexts can be articulated. H2d: The effects of manufacturing employment rates will be less pronounced for ex-prisoners with histories of violent offending. This hypothesis flows from Holzer et al.'s (2002, 2003a, 2007) finding that although the manufacturing industry is more willing than other industries to hire ex-offenders, prospective employers nonetheless are strongly averse to hiring ex-offenders who have been charged with violent offenses. This finding suggests that the protective effect of contextual-level manufacturing employment opportunities should be more pronounced for ex-offenders who have no prior violent convictions.

DATA AND METHODS

We test these hypotheses using a combination of male ex-prisoner-level data and county-level data. The male ex-prisoners were released from Florida prisons, between January 2000 and June 2001, to 67 Florida counties, and include 13,272 black male ex-prisoners and 8,648 white male ex-prisoners. Here, we focus on males because relatively few (9.7 percent) of the 25,803 releasees were females, and race-specific and offense-specific analyses for this group substantially reduced the sample sizes, in turn creating problems with multilevel analyses. For the same reason, we focus on white males and blacks males. (Hispanic male ex-offenders accounted for 6 percent of the 23,313 male releasees.)

We obtained ex-prisoner profiles and histories from the Florida Department of Corrections' Offender-Based Information System. County data were culled from several sources and merged with the male ex-prisoner-level data. The 2000 U.S. Census data were used to capture county-level variations in social structural characteristics (e.g., unemployment rates, manufacturing employment rates, levels of resource deprivation, and levels of urbanism). The Population Study Center at the University of Michigan was the source for index of dissimilarity, a measure of racial-residential segregation. The Florida Department of Law Enforcement was the source for data on county police deployments, and the Bureau of Economic and Business Research at the University of Florida was the source for data on county expenditure on public safety. Below we discuss each of the measures used as well as the analytic approaches undertaken to test our hypotheses. Table 1 provides detailed definitions, coding, and means and standard deviations for all the variables, presented separately for black ex-prisoners and white ex-prisoners.

Insert Table 1 about here

Dependent Variables

In this study, we evaluate the effect of race-specific employment contexts on recidivism, defined here as instances in which ex-offenders were reconvicted of a new felony that resulted in a sanction (i.e., placement in a local jail or state prison or on community supervision) any time within 2 years after release. We use reconviction as the measure of recidivism because reviews indicate that it is the most commonly used operationalization of reoffending (Villettaz et al., 2006: 8). The bulk of ex-offenders are likely to fail within the first year after release (Kurlychek et al., 2006; Langan and Levin, 2002). However, we use a full 2-year follow-up for each released prisoner to ensure that our focus is not restricted to those who are most likely to fail in the first year. Not least, given our interest in the commission of serious offenses after release from prison, we examine only felonies that resulted in a reconviction.

Because we hypothesize that employment contexts should have differential effects on offense-specific recidivism, we disaggregated reconviction into three categories: violent reconviction (if an ex-prisoner was reconvicted for a violent crime, such as homicide, aggravate assault, robbery, or sex offenses, including forcible rape); property reconviction (if an ex-prisoner was reconvicted for a property crime, such as burglary, motor vehicle theft, or larceny); and drug reconviction (if an ex-prisoner was reconvicted for a drug-related crime, such as possession, sale, or distribution of illegal substances). Each type of reconviction was dummy

coded (1=yes, 0=no). As inspection of table 1 shows, black male ex-prisoners in this study had a higher level of violent and drug reconviction than their white counterparts.

Employment Contexts

Following the lead of prior scholarship on labor markets (e.g., Bellair and Roscigno, 2000; Bellair et al., 2003; Crutchfield, 1995; Crutchfield and Pitchford, 1997; Raphael and Weiman, 2007; Sabol, 2007), we examine county-level unemployment rates as our first measure of employment contexts.[3] These rates, as Sabol (2007: 271) has argued, provide "a measure of the local demand for labor." We investigate the effect of black male unemployment rates on each type of recidivism for black male ex-prisoners, and assess the effect of white male unemployment rates on each type of recidivism for white male ex-prisoners. Black male unemployment rates were obtained by dividing the number of black male unemployed civilians by the county-level black male civilian population in the labor force 16-years-and-older (employed and unemployed). Similarly, white male unemployment rates were calculated by dividing the number of white male unemployed civilians by the county-level white male civilian population in the labor force 16-years-and-older (employed and unemployed). As shown in table 1, unemployment rates vary considerably across counties, and this variation is greater when the focus is on the black male unemployment rate.[4]

Our second measure of employment contexts taps into the manufacturing sector. We code this variable as a manufacturing employment rate rather than an unemployment rate to highlight the argument that employment opportunities in this sector of the economy may serve as a potential buffer against recidivism. Here, again, we created race-specific measures. For example, to create the black male manufacturing employment rate, we divided the number of black male

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[3] It can be argued that a lower level of aggregation, such as neighborhoods, might provide a better foothold for answering questions about the effects of employment contexts on individual-level outcomes. The data we use do not, unfortunately, allow for lower levels of aggregation. For our purposes, however, where the focus is on ecological-level economic opportunity, counties serve as an appropriate unit for several reasons. First, as Bellair et al. (2003: 14) have suggested, counties "more adequately capture the geographic boundaries of labor market areas, as standard metropolitan statistical areas (SMSAs) might, but without the loss of more rural areas of the United States." As such, use of counties as the unit of analysis may be more appropriate for capturing "labor market opportunity and potential labor market effects" on a range of outcomes (Roscigno, 1999: 182). Second, and in a related vein, Parker (2008: 84) has emphasized that "job markets do not fall within neighborhood or community boundaries"; county residents thus typically are exposed to the same labor market dynamics. Third, our focus is consistent with much of the labor market and crime literature, which typically examines county-level labor market conditions (Bellair and Roscigno, 2000; Bellair et al., 2003; Crutchfield, 1995; Crutchfield and Pitchford, 1997; Raphael and Weiman, 2007; Sabol, 2007).

[4] Our focus is on how labor market conditions in an area may influence individual-level recidivism. Thus, it seems reasonable for a measure of employment contexts to include all individuals who are eligible to be employed, which necessarily would translate into a need to include 16- and 17-year olds. Omission of these two age groups would create an inaccurate portrait of the labor market conditions facing ex-prisoners upon their return back into society.

civilians 16-years-and-older who were employed in the manufacturing industry by the black male civilian population in the labor force 16-years-and-older.

Control Variables

We control for factors that may be correlated with post-release employment and recidivism and that might influence the estimated effect of employment contexts. At the ex-offender level, we control for the ex-prisoner's age at arrest (in years) and education. Education was operationalized by using scores from the Test of Adult Basic Education (TABE), which measures a person's grade level in three subjects, including reading, math, and language, and is administered to inmates prior to their release.

Prior research has consistently shown that criminal history is associated with recidivism (see, e.g., Gendreau et al., 1996: 581-586). For this reason, we constructed a criminal history measure by conducting a principal components analysis on three variables, including: the number of prior felony convictions that resulted in correctional supervision (factor loading = .93 for blacks and .91 for whites), the number of prior recidivism events (i.e., the number of times an inmate previously was released from prison and subsequently convicted of a new felony offense and admitted to a Florida prison; loading = .81 for blacks and .74 for whites), and a prior felony conviction seriousness score (loading = .89 for blacks and .90 for whites)[5], created separately for black male and white male ex-prisoners. The analysis generated a weighted factor score for black males ($\lambda = 2.29$) and white males ($\lambda = 2.19$). Because Visher and Travis (2003) have suggested that in-prison experiences may also affect transitions from prison to community, we constructed an incarceration profile factor by performing a principal components analysis on three variables: the number of months served in prison (factor loading = .72 for blacks and .75 for whites), the number of in-prison disciplinary infractions (loading = .85 for blacks and .83 for whites), and the custody level at the time of release (loading = .61 for blacks and .56 for whites)[6], again created separately for black male and white male ex-prisoners. This analysis resulted in a weighted factor score for black males ($\lambda = 1.61$) and for white males ($\lambda = 1.57$), respectively.

We also control for post-release supervision because such supervision may increase the probability that ex-prisoners will find a job upon release from prison (Sabol, 2007; Pettit and Lyons, 2007). In addition, it may result in a greater likelihood that ex-prisoners who engage in criminal behavior will be caught (Kubrin and Stewart, 2006). We use a dummy variable that reflects whether ex-prisoners were under some form of supervision upon release.

At the county level, we control for black resource deprivation when predicting black male ex-prisoners' reconviction probabilities and white resource deprivation when predicting white male ex-prisoners' reconviction probabilities. Resource deprivation has been used frequently in studies of social ecology (Eitle et al., 2006; Land et al., 1990; Mears and Bhati, 2006) and has been found to be strongly associated with crime (Pratt and Cullen, 2005; Sampson et al., 2002). In addition, Parker (2008) has established that the constructs of resource deprivation and labor

[5] Under Florida's Criminal Punishment Code, sentencing points are assigned based on the primary (most serious) offense before the court. Our seriousness scores reflect the 1999 and 2000 sentencing guidelines offense points assigned to 52 different offenses (Burton et al., 2004).

[6] Custody level is coded so that higher scores indicate higher levels of custody (i.e., 1 = community, 2 = minimum, 3 = medium, and 4 = close).

market structures tap "different aspects of the local urban economy" (p. ix). To create race-specific deprivation measures, we extracted these variables from the 2000 U.S. Census: percent below poverty (factor loading = .95 for blacks and .91 for whites), percent receiving public assistance (loading = .79 for blacks and .93 for whites), median family income (loading = -.94 for blacks and -.82 for whites), and percent female-headed household (loading = .83 for blacks and .52 for whites) for the county-level black population ($\lambda = 3.09$) and the county-level white population ($\lambda = 2.64$), respectively.[7]

Racial segregation has been established as a salient predictor for crime and prisoner reentry (Krivo and Peterson, 2000; Mears et al., 2008; Peterson and Krivo, 2005; Travis, 2005). For that reason, we operationalized racial segregation by using the index of dissimilarity. This measure, used in ecological-level studies of crime (e.g., Parker, 2004; Wadsworth and Kubrin, 2004), reflects the extent to which whites and blacks are distributed evenly across an area; values closer to 0 indicate lower levels of segregation and values closer to 100 represent higher levels.

In addition, we control for urbanism because population density varies widely across Florida counties, and such a factor may affect crime and prisoner reentry (Reisig et al., 2007). Following Sampson and Laub (1993b: 298), urbanism is operationalized as a weighted factor score ($\lambda = 2.21$) extracted from three measures from the 2000 U.S. Census, including: total population (loading = .89), percent of population living in urban areas (loading = .81), and population density (loading = .88).

Finally, we include criminal justice system resources as a control because county-level variation in such resources may influence the likelihood that ex-prisoners are supervised or come to the attention of law enforcement. Following the lead of Sampson and Laub (1993b: 298), we operationalized criminal justice system resources by creating a weighted factor score using a principal components analysis ($\lambda = 1.95$). The measures used in this analysis included: police presence, as measured by the number of law-enforcement officers per 100,000 residents (factor loading = .78); per capita county revenues (loading = .77); and per capita spending on public safety (loading = .87).

Analytic Strategy

Due to the hierarchical nature of the data and the use of binary outcomes, we use hierarchical generalized linear modeling (HGLM). This approach, which incorporates a unique random effect into the statistical model for each county, produces more robust standard errors than non-hierarchical models allow (Raudenbush and Bryk, 2002: 100). We use HLM 6.0 for all the analyses and present the model estimates with robust standard errors.[8]

The analyses consist of a series of hierarchical logistic regression models predicting offense-specific recidivism outcomes. First, we present a set of models that investigates the effect of race-specific unemployment rates on violent, property, and drug recidivism outcomes

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[7] The correlation between black male unemployment rates and black resource deprivation was .04 ($p > .05$), and the correlation between white male unemployment rates and white resource deprivation was .22 ($p > .05$).

[8] The variance inflation factors for all the contextual-level variables were below 4, and the results of condition indices indicated acceptable levels of collinearity (Hair et al., 1998: 220). Also, the multicollinearity test for all the ex-offender-level variables did not reveal any problems.

for black ex-prisoners and white ex-prisoners, respectively. Second, we present a set of models that examines the effect of race-specific manufacturing employment rates on offense-specific recidivism outcomes for these two groups. Finally, we assess whether race-specific manufacturing employment rates have less pronounced effects for violent ex-offenders by testing for an interaction between prior violent conviction and manufacturing employment rates.

To address the potential problem of spatial dependence, a concern common in studies of social ecology (Kubrin and Weitzer, 2003: 393-395; Mears and Bhati, 2006: 521), we followed Baller et al. (2001: 572) and employed the nearest-neighbor criterion, which we calculated based on the distance between county centroids. More specifically, we used different neighbor weight matrices for 5, 6, and 10 nearest neighbors (all weights equal "1," with larger counties having larger weights), and calculated global Moran's I statistics on the raw offense-specific reconviction rates for black male and white male ex-prisoners, respectively. We used the S-plus spatial module for 1,000 permutations for each Moran's I statistic. The results indicated that spatial autocorrelation was not statistically significant for violent, property, or drug reconviction among white ex-prisoners. However, significant spatial autocorrelation emerged when property reconviction and drug reconviction among black ex-prisoners were examined. For this reason, in the analysis of black ex-prisoners and property reconviction, we included a spatial lag specific to this offense. Likewise, in the analysis of black ex-prisoners and drug reconviction, we included a spatial lag specific to this offense. In both cases, we constructed the spatial lag by averaging the raw reconviction rates for the five nearest counties neighboring each county because most counties in Florida have no more than five neighbors (counties) adjacent to them.

FINDINGS

We begin by testing the first set of hypotheses on race-specific unemployment rates. Recall that hypothesis 1a anticipated that higher unemployment rates would be positively associated with individual-level recidivism. Inspection of table 2 shows that the evidence for this hypothesis is mixed. On the one hand, higher levels of black male unemployment increase the likelihood of violent reconviction among black ex-prisoners—that is, among black ex-prisoners, reentry to areas where the black male unemployment rate is higher is associated with a greater probability of violent recidivism. More specifically, the regression coefficient for the black male unemployment rate is 3.83. Adjusting the scale to reflect a percentage change in this rate (i.e., dividing 3.83 by 100) and then exponentiating it provides an odds ratio of 1.04. This indicates that as the county-level black male unemployment rate increases by 1 percent, black male ex-prisoners returning to the county are 4 percent more likely to recidivate for a violent felony.

Although seemingly small, this effect may accumulate into large impacts on recidivism when comparing ex-prisoners released to areas with markedly higher unemployment rates and ex-prisoners released to areas with markedly lower unemployment rates. Notably, this effect surfaces net of individual-level characteristics, suggesting that, as Mears et al. (2008) recently have emphasized, the social ecology to which ex-prisoners return may influence their recidivism. However, there is no evidence of an effect of unemployment rates on black male ex-prisoners' property or drug reconviction. In addition, the white male unemployment rate does not appear to affect any type of white ex-prisoner recidivism.

Insert Table 2 about here

For hypothesis 1b, we anticipated that the effects of unemployment rates on individual-level recidivism would be more pronounced among black ex-prisoners. As the discussion above indicates, the results here suggest partial support for that hypothesis. We found that the black unemployment rate was positively associated with violent recidivism among black ex-prisoners. However, we also found that the white unemployment rate was not significantly associated with violent recidivism among white ex-prisoners. To investigate if the effects of unemployment rates on violent recidivism were in fact significantly different for black ex-prisoners versus white ex-prisoners, we performed a z-test (see Brame et al., 1998).[9] We found that the effect of unemployment rates on violent recidivism among black male ex-prisoners was not significantly greater than the effect of unemployment rates among white male ex-prisoners ($z = .74$, $p > .05$). Among both black ex-prisoners and white ex-prisoners, there was no statistically significant effect of race-specific unemployment rates on property or drug recidivism.

These same analyses can be used to evaluate hypothesis 1c. Contrary to what was hypothesized, the effect of unemployment rates is not more pronounced for property and drug recidivism as compared to violent recidivism. Instead, the counter-hypothesis—that the effect of unemployment rates should be greater for violent offending—appears to be supported. We conducted a series of z-tests to verify that assessment. For black male ex-prisoners, the effect of unemployment rates in fact was not significantly different for violent versus property recidivism ($z = 1.39$, $p > .05$); it was, however, significantly different for violent versus drug recidivism ($z = 2.43$, $p < .01$), suggesting partial support for the counter-hypothesis. For white male ex-prisoners, the effect of unemployment rates was not significantly different for violent versus property recidivism ($z = -.53$, $p > .05$) or violent versus drug recidivism ($z = .51$, $p > .05$).

We now turn to the test of the second set of hypotheses, which focuses on the effect of manufacturing employment rates on recidivism. Our main hypothesis (H2a) was that returning to areas with higher manufacturing employment rates would be negatively associated with individual-level recidivism. As can be seen in table 3, we find partial support for the hypothesis. The log odds coefficient for white male manufacturing employment rates was -5.49, which, after dividing by 100 and exponentiating the resulting value, resulted in an odds ratio of .95. This indicates that as the county-level white manufacturing rate increases by 1 percent, white ex-prisoners are 5 percent less likely to recidivate for a violent offense. However, the effect surfaced only among white, not black, ex-prisoners. In addition, we found no effects of manufacturing employment rates on property or drug recidivism. The models thus reinforce the notion not only that the labor market may shape offending patterns, but also that the effects may vary across different racial groups and by offense type, as discussed below.

Insert Table 3 about here

Hypothesis 2b anticipated that the effects of manufacturing employment rates on individual-level recidivism would be more pronounced for black male ex-prisoners. No such

[9] Paternoster et al. (1998) describe this approach as well. Variants are described in Bushway et al. (2006) and Williams (2009). They do not discuss situations involving different measures (e.g., the black unemployment rate's effect on black recidivism versus the white unemployment rate's effect on white recidivism).

difference emerged—there was no statistically significant effect of black manufacturing employment rates among black ex-prisoners. There was, however, an effect of white manufacturing employment rates on white ex-prisoner recidivism. Again, we employed a z-test to examine if manufacturing employment rates had significantly different effects on violent recidivism for black ex-prisoners, as compared to their white counterparts. This test suggested that the effect of white manufacturing employment rates on violent recidivism was significantly greater for white ex-prisoners than the effect of black manufacturing employment rates on black ex-prisoners ($z = 2.33$, $p < .01$). In short, per the discussion of hypothesis 2a and consistent with the hypothesis 2b counter-argument, white ex-prisoners returning to areas with higher levels of manufacturing employment were less likely to engage in violent recidivism.

A similar pattern unfolded for the test of hypothesis 2c. Manufacturing employment rates did not, and contrary to what we expected, exert a greater effect on property or drug recidivism as compared to violent recidivism. Instead, we found that white ex-prisoners returning to areas with higher white manufacturing employment rates were less likely to commit violent crime. Here, again, we conducted a set of z-tests to investigate if manufacturing employment rates have significantly different effects on violent recidivism, as compared to property or drug recidivism. We found that the impact of black male manufacturing employment rates was not significantly different for violent versus property recidivism ($z = .03$, $p > .05$) or violent versus drug recidivism ($z = .40$, $p > .05$). For white male ex-prisoners, however, the effect of manufacturing employment rates was significantly greater for violent recidivism, as compared to property recidivism ($z = -3.42$, $p < .01$) and drug recidivism ($z = -3.07$, $p < .01$).

The last hypothesis argued that the protective effects of manufacturing employment rates would be less pronounced for ex-prisoners with histories of violent offending.[10] To test this idea, we created a cross-level interaction (see Kreft and de Leeuw, 1998: 12) between prior violent conviction (1=yes, 0=no) and the race-specific manufacturing employment rate. A statistically significant interaction emerged only when predicting violent recidivism among whites. To facilitate discussion of this result, we plotted the predicted probabilities of violent recidivism among white ex-prisoners with and without a prior violent conviction for varying levels of white male manufacturing employment rates, setting all covariates at their means. As can be seen in figure 1, the protective effect of manufacturing employment opportunities is by far greater among white ex-prisoners with no history of violence. For example, this group—as compared to ex-prisoners with a history of violence—exhibits a much lower likelihood of committing a violent felony offense in areas where white manufacturing employment rates are higher.[11]

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[10] This hypothesized interaction derives directly from Holzer et al.'s (2002, 2003a, 2007) research, which suggests that although the manufacturing industry is more willing than other industries to hire ex-offenders, employers nonetheless are strongly averse to hiring ex-offenders who have been charged with violent offenses. However, Raphael and Weiman (2007) aver that offending history may condition the effect of county-level unemployment rates on recidivism. We therefore tested the interactions between race-specific unemployment rates and offending history; no statistically significant interaction emerged.

[11] Three sets of ancillary analyses bear mention. First, the results of unemployment rates and manufacturing employment rates on recidivism were robust to model specification. For example, we conducted analyses that controlled for violent and property crime rates and found no appreciable impact on the estimated effects of unemployment rates on black or white recidivism.

Insert Figure 1 about here

CONCLUSION

Building on prior scholarship, this paper sought to contribute to research on ecological influences on offending and prisoner reentry, and, in particular, the relationship between county-level employment contexts and recidivism. To this end, we examined the effects of race-specific unemployment rates and manufacturing employment rates on recidivism among a large cohort of male ex-prisoners. The motivation for the analyses derived from the fact that theory and empirical research have emphasized the potential for macro-level employment conditions to influence individual-level offending (Anderson, 1999; Bellair and Roscigno, 2000; Crutchfield, 1995; Crutchfield and Pitchford, 1997; Freeman, 1994; Wilson, 1987, 1996). It also derived from the emphasis that prisoner reentry studies have placed on the notion that employment barriers may contribute to unemployment and recidivism (Bushway et al., 2007; Pager, 2003, 2007; Raphael and Weiman, 2007; Sabol, 2007; Western, 2002, 2007).

Our review of scholarship on the employment-crime nexus underscored the importance of examining two dimensions: unemployment rates, as a general measure of the employment context to which ex-prisoners return, and manufacturing employment rates. Unemployment rates have frequently been used in studies of crime as an indicator of labor market conditions (Bellair and Roscigno, 2000; Bellair et al., 2003; Crutchfield, 1995; Crutchfield and Pitchford, 1997; Freeman, 1994). A number of studies, however, suggest that employers in the manufacturing industry are more willing than those in other industries to hire ex-prisoners (Holzer et al., 2002, 2003a-b, 2007; Solomon et al., 2004). We thus examined both types of employment contexts and, at the same time, investigated potential race-specific effects. The latter emphasis stemmed from the calls scholars have made for conducting race-specific analyses, especially in studies of

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In addition, due to the potential effect of concentrations of ex-prisoners in certain areas on crime (Clear, 2007; Gottfredson and Taylor, 1988; Parker, 2004), we constructed county-level race-specific concentrations of former inmates, and examined if the effects of employment contexts were robust when these were included in the models. In doing so, we excluded the urbanism index because it was highly correlated with race-specific concentrations of former inmates ($r > .80$), and including both would lead to a harmful level of multicollinearity (the largest VIF was over 6). The findings regarding our variables of interest (i.e., race-specific unemployment rates and manufacturing employment rates) were substantively the same. Second, because blacks and whites differed substantially on their TABE scores, we assessed if the effect of employment contexts was different for individuals of differing education levels by testing interaction terms between employment contexts and TABE scores. No statistically significant interaction emerged. We also examined if the effect of employment contexts was different for those above or below different thresholds by testing interaction terms between employment contexts and a range of dummy variables that captured different threshold levels. Here, again, no statistically significant interactions emerged. Third, we investigated whether the omission of outlier counties might influence the substantive or statistical results; they did not. (These analyses are available upon request.) We thank the anonymous reviewers for suggesting these additional lines of inquiry.

the labor market and crime, where race features prominently (Krivo and Peterson, 2000; Parker, 2004, 2008; Wilson, 1987, 1996).

Using data from the Florida Department of Corrections and contextual-level data from other sources, we tested two sets of hypotheses. We anticipated that race-specific unemployment rates would increase the likelihood of recidivism (H1a), that their effects would be more pronounced among black ex-prisoners (H1b), and that the effects would be greater on property and drug recidivism (H1c). In addition, we anticipated that race-specific manufacturing employment rates would decrease the likelihood of recidivism (H2a), that the protective effect of manufacturing employment rates would be greater among black ex-prisoners (H2b), and that, as with the first set of hypotheses, the effects would be greater on property and drug recidivism (H2c). We also hypothesized that the effects of manufacturing employment rates would be more salient for ex-prisoners who had no history of violent convictions (H2d).

The results can be summarized briefly. First, we found that black ex-prisoners released to counties with higher levels of black male unemployment were more likely to recidivate for a violent offense within two years after release. Second, when the analyses turned to the effects of manufacturing employment rates, we found no effect of these rates on black ex-prisoner recidivism; however, white manufacturing employment rates were associated with white ex-prisoner violent recidivism. In addition, we found that this effect was substantially greater among white ex-prisoners who had no prior violent convictions. Third, property and drug recidivism were not influenced by the employment contexts to which ex-prisoners returned.

Broadly, the findings suggest warrant for the view that employment contexts influence violent recidivism and that race-specific and offense-specific analyses should be conducted. In particular, the analyses suggest that black ex-prisoners are influenced by unemployment rates in general but not manufacturing employment rates, and that white ex-prisoners are influenced not by unemployment rates in general but instead by manufacturing employment rates.

What accounts for these patterns? We speculate that the differences stem from the interplay of the individual-level characteristics of white and black ex-prisoners, respectively, and the social and economic contexts to which they return. As a general matter, for example, white ex-prisoners may have more social capital at their disposal, relative to their black counterparts, and this advantage may buffer them against the generalized adverse consequences of high unemployment rates. By contrast, black ex-prisoners may be more vulnerable to higher levels of unemployment precisely because of their greater individual-level, accumulated disadvantage (Holzer et al., 2002, 2003a-b, 2006, 2007; Pager, 2003, 2007). Whether these explanations account for the differential effects of race-specific unemployment rates versus race-specific manufacturing employment rates can only be adjudicated, of course, by future research.

With respect to manufacturing employment, we speculate—in the absence of data that allow us to test the idea directly—that several factors may be relevant. One possibility is that white ex-prisoners may be more likely than black ex-prisoners to have the skills, experiences, and social capital to compete for jobs in the manufacturing sector. In addition, in this sector of the economy, their incarceration history may be less likely to dissuade potential employers from hiring them. Indeed, such employers may be less likely to conduct criminal background checks (Holzer et al., 2002, 2006, 2007). Not least, white ex-prisoners may face less competition from white non-prisoners for manufacturing jobs. By contrast, black ex-prisoners may face more competition from other blacks in their efforts to secure manufacturing employment.

We turn now to implications of this study. First, consistent with prior work, the findings

underscore the importance of conducting race-specific analyses (Krivo and Peterson, 2000; Parker, 2004, 2008; Sampson and Wilson, 1995). We found, for example, that employment contexts were not consistently associated with white or black ex-prisoner recidivism, violent offending in particular. Analyses that do not take such possibilities into account risk obscuring between-group variation in the effects of employment contexts on recidivism.

Second, although ecological- and individual-level research has largely established the unemployment-crime link, an important and largely unaddressed question is how employment contexts affect individual-level offending. Freeman (1994: 18) has called for research to examine the association between employment contexts and individual criminal behavior because such contexts provide an indicator of the "labor market incentives that might induce illegal activity." Our findings suggest support for the idea that the labor market can indeed influence individual-level offending. However, the effect appears to be linked to violent rather than non-violent offending. Perhaps that is because, as Anderson (1999) has argued, individuals with few legitimate employment opportunities will experience high levels of despair (Anderson, 1999) or will seek alternative ways to express their masculinity (see also Krivo and Peterson, 2004; Messerschmidt, 1986), which in turn might contribute to greater levels of violent offending. Although our study lends credence to such accounts, research is needed that directly tests whether they indeed explain the observed findings.

Third, and more broadly, research should identify the intervening mechanisms that link employment contexts and recidivism. For example, do limited employment opportunities create strain among ex-prisoners and does that strain contribute to higher levels of violent offending? Do poor labor market conditions in fact undermine social institutions, including the family, in ways that directly affect ex-prisoner recidivism? These and other possible intervening mechanisms can be posited, but empirical research is needed to disentangle which ones account for any observed relationship between employment contexts and individual-level offending.

Fourth, in replicating and extending this study, future research will want to investigate a series of related questions. For example, what industries are especially reluctant or willing to hire ex-prisoners? Which ex-prisoners are willing to seek employment or have the greatest chance of being hired? How might changes in the economy, such as the globalization of the markets and the increased salience of technological innovations to the service sector (Solomon et al., 2004), affect the relative reentry success of ex-prisoners? Also, how might the employment challenges confronting future cohorts vary in kind or in their effect on ex-prisoner reentry?

Fifth, research should examine individual-level pre-incarceration and post-incarceration work experiences to examine the effect of these variables, and their potential interaction with employment contexts, on reentry outcomes. The present study controlled for factors that correlate with work experiences, but did not directly control for ex-prisoner work history. Omission of such a variable may have affected the results. That said, several considerations bear mention. First, it may be that ex-prisoners with prior work experiences benefit more from robust employment opportunities than do those with no prior work experience. However, whether an ex-prisoner has a prior history of work or not, a robust economy should create opportunities to find employment and so might reduce the likelihood of recidivism (see, generally, Raphael and Weiman, 2007; Sabol, 2007). Whether the effect would be more pronounced or less so among those without prior work histories is a question that ideally can and will be explored in future research. Second, we controlled for age, education, criminal history, incarceration profile, and post-release supervision, all of which, especially education and criminal history, have been found

to be correlated with individual-level prior work experience (see, e.g., Caspi et al., 1998; Jimerson, 1999; Tanner et al., 1999). Thus, the controls that we include should compensate for omission of a work history measure. Absent a direct measure of prior work history, however, it remains an open question as to whether the results would differ were such a measure included in the models. By extension, it remains an open question as to whether employment contexts exert differential effects on ex-prisoners with solid work histories as compared to those without them.

Finally, an important avenue of inquiry to explore is how race-specific employment contexts affect female ex-prisoner recidivism. Such an investigation is warranted for at least two reasons. First, the numbers and proportions of women incarcerated in prisons have increased significantly in the last several decades; as a result, an increasing number of female ex-prisoners are released into society, and employment prospects may also play an important role in their successful transitions. Second, the effect of employment contexts on recidivism likely differs for male ex-prisoners versus female ex-prisoners. Because the labor market is stratified along race and gender lines (Parker, 2008), female ex-prisoners face differential employment contexts as compared to male ex-prisoners, and black female ex-prisoners face differential employment contexts as compared to their white counterparts. For example, black women are more likely to work in the manufacturing sector than their white counterparts (Kletzer, 1991; see also Parker, 2004, 2008), so employment opportunities in the manufacturing sector may have a more pronounced effect for black women, including black female ex-prisoners.

In closing, the study's findings suggest that employment opportunities may play a critical role in the successful reentry of ex-prisoners back into society. Faced with more opportunities to find legitimate work, ex-prisoners may be more willing or able to secure gainful employment and avoid a life of crime. Conversely, if faced with labor markets that are closed to them, they may be more likely to engage in crime, with harmful repercussions for the areas in which they reside and ultimately for society at large (Bushway et al., 2007; Clear, 2007; Nagin et al., 2009; Western, 2002, 2007). The fact, however, that this study identified different effects of unemployment contexts versus manufacturing employment contexts, with the effects varying by race, underscores that any approach to improving reentry outcomes through the labor market will require a greater understanding of the nuances of the employment and recidivism nexus.

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Table 1. Variable Descriptions and Descriptive Statistics

Variable	*Definition and Coding*	*Mean (S.D.)*	
		Blacks	*Whites*
Dependent Variables			
Violent reconviction	Whether ex-prisoners were convicted of a new violent offense resulting in correctional supervision (i.e., jail, prison, or community supervision) for the 2 years after release from prison (1=yes, 0=no).	.06 (.23)	.04 (.20)
Property reconviction	Whether ex-prisoners were convicted of a new property offense resulting in correctional supervision (i.e., jail, prison, or community supervision) for the 2 years after release from prison (1=yes, 0=no).	.11 (.31)	.14 (.34)
Drug reconviction	Whether ex-prisoners were convicted of a new drug offense resulting in correctional supervision (i.e., jail, prison, or community supervision) for the 2 years after release from prison (1=yes, 0=no).	.21 (.41)	.06 (.24)
Ex-Prisoner-Level Independent Variables			
Age	Age (in years) at the time of release from prison.	32.29 (9.18)	33.86 (9.91)
Education	Scores from the Test of Adult Basic Education (TABE), measuring a prisoner's grade level in three subjects (reading, math, language) and administered prior to release.	6.31 (2.89)	9.00 (3.10)
Criminal history	Weighted factor score extracted from three measures (number of prior convictions, number of prior recidivism events, seriousness scores) (black male: λ=2.29, factor loading > .80; white male: λ=2.19, factor loading > .73).	.00 (1.00)	.00 (1.00)
Incarceration profile	Weighted factor score extracted from three measures (custody level, number of disciplinary infractions, time served) (black male: λ=1.61, factor loading > .60; white male: λ=1.57, factor loading > .56).	.00 (1.00)	.00 (1.00)
Post-release supervision	Whether the offender was supervised by a parole, probation, or a community-control officer after release (1=yes, 0=no).	.32 (.47)	.36 (.48)
County-Level Independent Variables			
Unemployment rates	Percent unemployed.	.10 (.04)	.04 (.02)
Manufacturing employment rates	Percent employed in the manufacturing industry.	.12 (.08)	.09 (.04)
Resource deprivation	Weighted factors score extracted from four measures (percent below poverty, percent receiving public assistance, median family income, percent female-headed household) (black: λ=3.09, factor loading > .78; white: λ=2.64, factor loading > .52).	.00 (1.00)	.00 (1.00)
Index of dissimilarity	White/black within-county segregation using census tracts as the subareas; scores range from 1 to 100, with larger values reflecting higher levels of racial segregation.	43.29 (15.62)	43.29 (15.62)
Urbanism	Weighted factor scores extracted from three measures (total population, percent of population living in urban areas, density) (λ=2.21, factor loading > .80).	.00 (1.00)	.00 (1.00)
Criminal justice system resources	Weighted factor score extracted from three measures (police presence, per capita county revenues, per capita spending on public safety) (λ=1.95, factor loading > .76).	.00 (1.00)	.00 (1.00)

Notes: N=13,272 black male ex-prisoners and 8,648 white male ex-prisoners; N=67 counties.

Table 2. Regression of Violent, Property, and Drug Reconviction on Race-Specific Unemployment Rates[a]

	Black Males[b]			*White Males*		
	Violent	*Property*	*Drug*	*Violent*	*Property*	*Drug*
Intercept	-2.72**	-2.01**	-1.46**	-3.11**	-1.87**	-2.95**
	(.08)	(.06)	(.07)	(.10)	(.07)	(.08)
Ex-Prisoner-Level						
Age	-.06**	-.01**	-.03**	-.04**	-.04**	-.02**
	(.01)	(.00)	(.01)	(.01)	(.00)	(.00)
Education	-.05**	-.02*	-.05**	-.06**	-.02*	-.00
	(.02)	(.01)	(.01)	(.02)	(.01)	(.01)
Criminal history	.12**	.33**	.20**	.10*	.43**	.23**
	(.04)	(.03)	(.03)	(.04)	(.03)	(.03)
Incarceration profile	.23**	.10**	-.09**	.17**	.02	-.16**
	(.03)	(.03)	(.03)	(.03)	(.03)	(.05)
Post-release supervision	-.00	-.18**	-.58**	-.01	-.40**	-.56**
	(.08)	(.06)	(.03)	(.10)	(.09)	(.09)
County-Level						
Black male unemp. rate	3.83**	1.22	-2.01			
	(1.30)	(1.35)	(2.07)			
White male unemp. rate				.10	3.51	-3.29
				(4.88)	(4.17)	(4.42)
Black resource deprivation	.13	.02	-.19*			
	(.07)	(.06)	(.08)			
White resource deprivation				.06	-.02	.05
				(.10)	(.07)	(.09)
Index of dissimilarity	-.00	.00	.02*	-.00	-.01	.03**
	(.01)	(.00)	(.01)	(.01)	(.00)	(.01)
Urbanism	-.07	-.09*	-.06	-.00	.07	.03
	(.06)	(.04)	(.05)	(.07)	(.04)	(.07)
Criminal justice system resources	.05	.07	-.00	-.09	.09*	-.05
	(.05)	(.07)	(.07)	(.06)	(.04)	(.06)
Random Effect						
Intercept, τ_{00}	.02	.03	.06**	.05	.01*	.06*
χ^2	60.64	76.84	147.91	68.14	82.95	83.27

Notes: The unstandardized coefficients are presented in the table with standard errors in parentheses.

* p < .05; ** p < .01.

[a] Hierarchical logistic regression is used because the dependent variables are binary and ex-prisoners are nested within counties.

[b] A spatial lag specific to property reconviction and drug reconviction is included because spatial autocorrelation was revealed when property reconviction and drug reconviction were considered for black male ex-prisoners.

Table 3. Regression of Violent, Property, and Drug Reconviction on Race-Specific Manufacturing Employment Rates[a]

	Black Males[b]			*White Males*		
	Violent	*Property*	*Drug*	*Violent*	*Property*	*Drug*
Intercept	-2.73**	-2.02**	-1.48**	-3.13**	-1.87**	-2.95**
	(.08)	(.06)	(.06)	(.09)	(.07)	(.08)
Ex-Prisoner-Level						
Age	-.06**	-.01**	-.03**	-.04**	-.04**	-.02**
	(.01)	(.00)	(.01)	(.01)	(.00)	(.00)
Education	-.05**	-.02*	-.05**	-.06**	-.02*	-.00
	(.02)	(.01)	(.01)	(.02)	(.01)	(.01)
Criminal history	.12**	.33**	.20**	.10**	.43**	.23**
	(.04)	(.03)	(.03)	(.04)	(.03)	(.03)
Incarceration profile	.23**	.09**	-.09**	.17**	.02	-.16**
	(.03)	(.03)	(.03)	(.03)	(.03)	(.05)
Post-release	-.00	-.18**	-.58**	-.00	-.40**	-.56**
supervision	(.08)	(.06)	(.03)	(.10)	(.09)	(.09)
County-Level						
Black male	-.32	-.36	-.97			
manuf. emp. rate	(1.11)	(.88)	(1.20)			
White male				-5.49**	2.30	2.29
manuf. emp. rate				(1.92)	(1.22)	(1.65)
Black male	3.62*	1.04	-2.29			
unemp. rate	(1.65)	(1.51)	(2.18)			
White male				-2.64	5.26	-2.00
unemp. rate				(4.57)	(4.43)	(4.51)
Black resource	.14	.03	-.17			
deprivation	(.08)	(.07)	(.08)			
White resource				.14	-.06	.02
deprivation				(.11)	(.08)	(.08)
Index of	-.00	.00	.02**	.00	-.01	.03**
dissimilarity	(.01)	(.01)	(.01)	(.01)	(.00)	(.01)
Urbanism	-.07	-.09*	-.06	.02	.05	.02
	(.06)	(.04)	(.06)	(.08)	(.04)	(.08)
Criminal justice	.05	.07	-.01	-.15*	.12**	-.02
system resources	(.06)	(.07)	(.07)	(.07)	(.04)	(.07)
Random Effect						
Intercept, τ_{00}	.03	.03	.06**	.04	.00*	.06*
χ^2	60.58	77.12	146.36	62.59	81.14	82.95

Notes: The unstandardized coefficients are presented in the table with standard errors in parentheses.

* $p < .05$; ** $p < .01$.

[a] Hierarchical logistic regression is used because the dependent variables are binary and ex-prisoners are nested within counties.

[b] A spatial lag specific to property reconviction and drug reconviction is included because spatial autocorrelation was revealed when property reconviction and drug reconviction were considered for black male ex-prisoners.

Figure 1. Predicted Violent Reconviction Probabilities for White Male Ex-Prisoners at Different Levels of White Male Manufacturing Employment Rates