

IZA DP No. 4469

Discrimination in a Low-Wage Labor Market: A Field Experiment

Devah Pager
Bruce Western
Bart Bonikowski

October 2009

Discrimination in a Low-Wage Labor Market: A Field Experiment

Devah Pager

*Princeton University
and IZA*

Bruce Western

Harvard University

Bart Bonikowski

Princeton University

Discussion Paper No. 4469
October 2009

IZA

P.O. Box 7240
53072 Bonn
Germany

Phone: +49-228-3894-0
Fax: +49-228-3894-180
E-mail: iza@iza.org

Any opinions expressed here are those of the author(s) and not those of IZA. Research published in this series may include views on policy, but the institute itself takes no institutional policy positions.

The Institute for the Study of Labor (IZA) in Bonn is a local and virtual international research center and a place of communication between science, politics and business. IZA is an independent nonprofit organization supported by Deutsche Post Foundation. The center is associated with the University of Bonn and offers a stimulating research environment through its international network, workshops and conferences, data service, project support, research visits and doctoral program. IZA engages in (i) original and internationally competitive research in all fields of labor economics, (ii) development of policy concepts, and (iii) dissemination of research results and concepts to the interested public.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the author.

ABSTRACT

Discrimination in a Low-Wage Labor Market: A Field Experiment*

Decades of racial progress have led some researchers and policymakers to doubt that discrimination remains an important cause of economic inequality. To study contemporary discrimination we conducted a field experiment in the low-wage labor market of New York City. The experiment recruited white, black, and Latino job applicants, called testers, who were matched on demographic characteristics and interpersonal skills. The testers were given equivalent resumes and sent to apply in tandem for hundreds of entry-level jobs. Our results show that black applicants were half as likely to receive a callback or job offer relative to equally qualified whites. In fact, black and Latino applicants with clean backgrounds fared no better than a white applicant just released from prison. Additional qualitative evidence from our testers' experiences further illustrates the multiple points at which employment trajectories can be deflected by various forms of racial bias. Together these results point to the subtle but systematic forms of discrimination that continue to shape employment opportunities for low-wage workers.

JEL Classification: J7

Keywords: discrimination, field experiment, race, labor markets

Corresponding author:

Devah Pager
Department of Sociology
Princeton University
Princeton, NJ 08544
USA
E-mail: pager@princeton.edu

* Forthcoming in *American Sociological Review*, 2009, 74 (5). This research has been supported by grants from the National Science Foundation, the National Institute of Justice, the JEHT Foundation, the Princeton Research Institute on the Region and the Industrial Relations Section of Princeton University. We also gratefully acknowledge the support of the New York City Commission on Human Rights, and Commissioner Patricia Gatling. Thanks to Glenn Martin, Don Green, and the generous feedback from the many workshop participants who saw earlier drafts of this article.

Despite legal bans on discrimination and the liberalization of racial attitudes since the 1960s, racial differences in employment remain among the most enduring forms of economic inequality. Even in the tight labor market of the late 1990s, unemployment rates for black men remained twice that for whites. Racial inequality in total joblessness—including those who have exited the labor market—increased among young men during this period (Holzer and Offner 2001). Against this backdrop of persistent racial inequality, the question of employment discrimination has generated renewed interest. Though a large research literature studies racial inequality in employment, the continuing effects of discrimination remain widely contested.

One line of research points to the persistence of prejudice and discrimination as a critical factor shaping contemporary racial disparities (Roscigno et al., 2007; Darity & Mason, 1998). A series of studies relying on surveys and in-depth interviews finds that firms are reluctant to hire young minority men—especially African Americans—because they are seen as unreliable, dishonest, or lacking in social or cognitive skills (Waldinger and Lichter 2003; Moss and Tilly 2001; Holzer 1996; Kirschenman & Neckerman, 1991; Wilson 1996, chap. 5). The strong negative attitudes expressed by employers suggest that race remains highly salient in employers' evaluations of workers. At the same time, however, research relying on interviews with employers leaves uncertain the degree to which self-reported attitudes are reflected in actual hiring decisions (Pager & Quillian, 2005). Indeed, Philip Moss and Chris Tilly (2001) report the puzzling finding that “businesses where a plurality of managers complained about black motivation are more likely to hire black men” (p.151). In fact, across a series of analyses controlling for firm size, starting wage, the percent black in the relevant portion of the metropolitan area, and the business' average distance from black residents in the

area, the authors find that employers who overtly criticize the hard skills or interaction skills of black workers are between two and four times more likely to hire a black worker (p.151-152). Hiring decisions are influenced by a complex range of factors, racial attitudes being only one. The stated preferences of employers, then, leave uncertain the degree to which negative attitudes about blacks translate into active forms of discrimination.

Indeed, other research focusing on wages rather than employment reports even less evidence of contemporary discrimination. Derek Neal and William Johnson (1996), for example, estimate wage differences between white, black, and Latino young men. They find that two-thirds of the black-white gap in wages in 1990-1991 can be explained by race differences in cognitive test scores measured 11 years earlier; test scores fully explain wage differences between whites and Latinos. This and similar studies trace the employment problems of young minority men primarily to skill or other individual deficiencies, rather than any direct effect of discrimination (Neal and Johnson 1996; Farkas and Vicknair 1996; O'Neill, 1990). Economist James Heckman (1998) puts the point most clearly, writing that “most of the disparity in earnings between blacks and whites in the labor market of the 1990s is due to differences in skills they bring to the market, and not to discrimination within the labor market...” He goes on to describe labor market discrimination as “the problem of an earlier era” (Heckman, 1998:101-102).

Does employer discrimination continue to affect labor market outcomes for minority workers? Clear answers are elusive because discrimination is hard to measure. Without observing actual hiring decisions, it is difficult to assess exactly how and under what conditions race shapes employer behavior. We address this issue with a field experiment that allows direct observation of employer decision-making. By presenting equally qualified

applicants who differ only by race or ethnicity, we can observe the degree to which racial considerations affect real hiring decisions. Further, we move beyond experimental estimates of discrimination to explore the *processes* by which discrimination occurs. Examining the interactions between job seekers and employers, we gain new insights into how race influences employers' perceptions of job candidate quality and desirability. Studying the multifaceted character of discrimination highlights the range of decisions that collectively reduce opportunity for minority candidates. Together these measures offer a unique view into the hiring processes that may contribute to persistent racial inequality in employment.

Conceptualizing Discrimination

Empirical studies often portray discrimination as a single decision. Research on employment disparities, for example, considers the role of discrimination at the point of initial hire; research on wage disparities considers discrimination at the point of wage-setting decisions. In reality, discrimination may occur at multiple decision points across the employment relationship. In this way, even relatively small episodes of discrimination—when experienced at multiple intervals or across multiple contexts—can have substantial effects on aggregate outcomes.

Similarly, depictions of *discriminators* often portray the labor market as divided neatly between those employers with a “taste for discrimination” and those who are indifferent to race (Becker, 1957). In this perspective, job seekers can avoid discrimination by sorting themselves into sectors of the labor market in which discrimination is less likely to occur (Heckman, 1998:103). Fryer and Levitt (2003) characterize employers according to a similar dichotomy, with applicants best advised to identify and avoid employers prone to discrimination rather than wasting time pursuing job opportunities among firms unwilling to hire them: “In the face

of discriminatory employers, it is actually in the interest of both employee and employers for Blacks to signal race, either via a name or other resume information, rather than undertaking a costly interview with little hope of receiving a job offer” (Fryer & Levitt, 2003). According to this conceptualization of labor market discrimination, racial preferences or biases are fixed and concentrated among a specific subset of employers.

Other evidence, by contrast, challenges a tidy distinction between employers who do and do not discriminate. Alternative formulations of labor market discrimination encourage us to view the process as more often interactive, contextual, and widespread. Theories of both statistical discrimination and stereotypes view race as a heuristic employers use to evaluate job applicants about whom little is known. According to this perspective, group-based generalizations provide guidance about the expected profile of individuals from a given group and can facilitate decision-making when information or time are scarce (Aigner & Cain, 1977; Fiske, 1998). Heuristics of this kind are pervasive (and often unconscious). Their effects may vary, however, depending on the availability of and attention to person-specific information (such as that conveyed through application materials or in an interview), which may interact with and potentially override initial expectations. A long line of social psychological research investigates how stereotypes give way to individualizing information as well as the conditions under which stereotypes demonstrate a stubborn resistance to change (Fiske, 1998; Bodenhausen, 1988; Trope & Thomson, 1997).² This research suggests that salient personalizing information can quickly counteract stereotyped expectations; however, in evaluating difficult-to-observe or ambiguously relevant characteristics, or when decision-

² Theories of statistical discrimination also predict employer responsiveness to individual characteristics (e.g., Altonji & Pierret, 2001; Oettinger, 1996).

makers have many competing demands on their attention, stereotypes often work to filter information in ways that preserve expectations (Darley & Gross, 1983; Dovidio & Gaertner, 2000; Biernat, Kobrynowicz, & Weber, 2003). In these cases of decision-making under uncertainty, racial preferences or biases are unlikely to be expressed in any static or uniform way, but rather vary in intensity and consequence depending on other characteristics of the applicant, the employer, and the interaction between the two.

In addition to noting the varying role of race across employment interactions, some research has shifted the focus from characteristics of the employer to the characteristics of the job for which a given worker is being considered. Previous research has pointed to the negative consequences of the changing composition of low-wage jobs for African American men, with the shift from manufacturing to service skewing the distribution of skill demands toward “soft skills” for which black men are considered lacking (Moss & Tilly, 2001). Jobs involving customer service or contact with clients heighten the salience of race, because of employers’ concerns about the dress and demeanor of young black men (Moss & Tilly, 2001). Jobs at the “back of the house” or those emphasizing manual skills are less likely to activate concerns of this kind. In this scenario, discrimination may obtain not at the employer level but at the job level, with black applicants excluded from some job types and channeled into others. In this case, we would look to variation in discrimination not among employers but among the job openings for which workers are being considered.

Rather than viewing discrimination as a single decision, or as the result of a small group of highly prejudiced employers, a growing body of research points to the variable contexts that shape how information about applicants may be filtered and interpreted along racial lines. Decision-making under uncertainty and the race-typing of jobs both make

discrimination more likely. To capture the contingent and cumulative effects of discrimination implied by these theories requires examining how experiences of discrimination may be distributed across a wide range of decision points, and may vary depending on interactions among the employer, the applicant, and the job in question.

The Changing Landscape of Low Wage Labor Markets

Economic theory predicts the decline of discrimination through market competition (Becker, 1957), but several features of contemporary low-wage labor markets may sustain or renew racialized decision-making. Shifts in the composition of both low-wage jobs and workers have potentially created new incentives and opportunities for employers to enact racial preferences in hiring. First, low-wage job growth has been concentrated in service industries, in positions that place a heavy emphasis on self-presentation, interaction with customers, and other personality-related attributes (Moss & Tilly, 2001). As discussed above, employers consistently express concerns over the “soft skills” of black men, implying a potential skills mismatch between the skill requirements of new job growth and the perceived skill profile of black male job seekers. Further, because many of the qualities valued by employers for contemporary low-wage jobs are difficult to evaluate from a written application or brief meeting, generalized negative perceptions of minority workers may be more difficult for individual minority applicants to disconfirm (Biernat & Kobrynowicz, 1997).

Second, low-wage labor markets today are characterized by increasing heterogeneity of the urban minority work force, with low-skill African American workers now more likely to compete with other minority groups—low-skill Latino workers, in particular. Interviews with employers in Los Angeles and Chicago suggest consistent preferences for Latinos over African

Americans, with Latino workers viewed as more pliant, reliable, and hard-working (Waldinger & Lichter, 2003; Kirschenman & Neckerman, 1991). Given these racial preferences among employers, growing competition within the low-wage labor market may leave black men vulnerable to discrimination relative not only to whites, but increasingly from Latinos as well.

Finally, low-wage labor markets are increasingly supplied by workers with criminal records. Nearly a third of black noncollege men have prison records by their mid-thirties, adding to employers' reservations about black male job applicants (Pettit & Western, 2004; Pager, 2007b). The high rate of incarceration makes a criminal record a newly important source of stigma that is worth studying in its own right. More than this, we can view a criminal record as an extreme and authoritative signal of the kinds of problematic behaviors that employers ascribe to young black men. In this context, separating the effects of criminal stigma from race provides a useful benchmark for measuring racial stigma. In the first effort in this direction, Pager's (2003) research in a Milwaukee field experiment compared racial and criminal stigma among matched pairs of job seekers. Fielding a pair of black and a pair of white job applicants (in which one member of each pair was randomly assigned a criminal record), Pager found that a black applicant with no criminal background experiences job prospects similar to those of a white felon. That blackness confers the same disadvantage as a felony conviction helps calibrate the deeply skeptical view of young black men in the eyes of Milwaukee employers.

The growing importance of soft skills, ethnic heterogeneity, and job seekers with criminal records suggest the persistence or increasing incidence of discrimination in contemporary low-wage labor markets. Whether based on statistical generalizations or inaccurate stereotypes, preconceived notions about the characteristics or desirability of black

men relative to other applicant types will likely structure the distribution of opportunity in contemporary low-wage labor markets along racial lines.

Methods for Studying Labor Market Discrimination

Racial discrimination in the labor market is typically studied by comparing the wages of whites and minorities, statistically controlling for human capital characteristics. Estimates from a variety of social surveys suggest that the black-white difference in hourly wages among men usually range between about 10 and 20 percent (e.g., Cancio et al 1996; Neal and Johnson 1996; Darity and Meyers 1998). Though widely used, this residual method, in which discrimination is defined as the unexplained race difference in wages, is sensitive to the measurement of human capital. Where race differences in human capital are incompletely observed, the effect of discrimination may be over-estimated (e.g., Neal and Johnson 1996; Farkas and Vicknair 1996).

Residual estimates of discrimination infer employer behavior from data on workers' wages. Field experiments, by contrast, offer a more direct approach to the measurement of discrimination. This approach, also referred to as an audit methodology, involves the use of matched teams of job applicants—called testers—who apply to real job openings and record responses from employers. In studies of racial discrimination, black and white testers are assigned equivalent resumes and are matched on a variety of characteristics like age, education, physical appearance, and interpersonal skills. Because black and white testers are sent to the same firms, and testers are matched on a wide variety of characteristics, much of the unexplained variation that confounds residual estimates of discrimination is experimentally controlled.

In part because of taxing logistical requirements, the use of in-person audit studies of employment remains rare, with only a handful of such studies conducted over the past 20 years (Cross et al. 1990; Turner et al. 1991; Bendick et al., 1991; Bendick et al. 1994; Pager, 2003).³ Moreover, the typical emphasis on a single comparison group leaves several significant features of contemporary urban labor markets unexplored.

By studying both race and criminal background, the Milwaukee audit study represents an important starting point for this project (Pager 2003). The Milwaukee study focused on the influence of the criminal justice system on labor market stratification by studying the effect of a criminal record for black and white job seekers. Though race emerged as a key theme in the study's findings, the topic of racial discrimination was not a central focus. Moreover, the research design yielded only indirect evidence of racial discrimination because black and white testers did not apply to the same employers. Our ability to investigate when and how racial discrimination occurs, therefore, is limited in this context.

The current study updates and extends earlier research in several ways. First, we focus directly on the question of racial discrimination, both in conceptualization and design. This emphasis allows us to situate our research within ongoing debates about discrimination, and to provide a rigorous design for detecting racial discrimination. Second, we move beyond standard two-race models of discrimination by including matched black, white, and Latino job seekers, reflecting the racial heterogeneity of large urban labor markets. To our knowledge, this is the first study of its kind to simultaneously examine the employment experiences of three racial/ethnic groups. Third, to help calibrate the magnitude of racial preferences, we

³ For a summary of the results of earlier audit studies, see Heckman and Siegelman (1993) and Pager (2007a). Less costly are correspondence studies, which rely on resumes sent by mail rather than in-person applications. In-person audit studies have been used more often for investigations of housing discrimination, in which the requirements of matching and supervision are less stringent than in the employment context (e.g., Yinger, 1995).

compare applicants affected by varying forms of stigma; specifically, we compare minority applicants to white applicants just released from prison. Where the Milwaukee study attempted this comparison across teams, the present analysis provides a direct test by comparing the outcomes of minority and ex-offender applicants who visited the same employers. Finally, we extend our analysis from the quantitative evidence of differential treatment to a rich set of qualitative data allowing for an exploration of the *process* of discrimination. Drawing from the extensive field notes taken by testers which describe their interactions with employers, we provide a unique window into the range of employer responses that characterize discrimination in contemporary low-wage labor markets.

Research Design and Methods

The New York City Hiring Discrimination Study sent matched teams of testers to apply for 341 real entry-level jobs throughout New York City over nine months in 2004. The testers were well-spoken, clean-cut young men, aged 22 to 26. Most were college-educated, between 5 feet 10 inches and 6 feet in height, recruited in and around New York City. They were matched on the basis of their verbal skills, interactional styles (level of eye-contact, demeanor, and verbosity), and physical attractiveness. Testers were assigned fictitious resumes indicating identical educational attainment, and comparable quality of high school, work experience (quantity and kind), and neighborhood of residence. Resumes were prepared in different fonts and formats and randomly varied across testers, with each resume used by testers from each race group. Testers presented themselves as high school graduates with steady work experience in entry-level jobs. Finally, the testers passed through a common training program to ensure

uniform behavior in job interviews. While in the field, the testers dressed similarly and communicated with teammates by cell phone to anticipate unusual interview situations.

We fielded two teams, with each team including a white, Latino, and black tester. To help ensure comparability, the Latino testers spoke in unaccented English, were U.S. citizens of Puerto Rican descent, and like the other testers, claimed no Spanish language ability. The first team tests a standard racial hierarchy, with the white tester serving as a benchmark against which to measure variation in racial and ethnic discrimination. To calibrate the magnitude of racial stigma, the second team compares black and Latino testers to a white tester with a criminal record. The criminal record was typically disclosed in answer to the standard question on employment applications, “Have you ever been convicted of a crime? If yes, please explain.” When asked, testers were instructed to reveal that they had recently been released from prison after serving 18 months for a drug felony (possession with intent to distribute, cocaine). In addition, following Pager (2003), the white tester’s criminal record was also signaled on the resume by listing work experience at a state prison, and by listing a parole officer as a reference.⁴

For both teams, employers were sampled from job listings for entry-level positions, defined as jobs requiring little previous experience and no more than a high school degree. Job titles included restaurant jobs, retail sales, warehouse workers, couriers, telemarketers, customer service positions, clerical workers, stockers, movers, delivery drivers, and a wide range of other low-wage positions. Job listings were randomly drawn each week from the classified sections of *The New York Times*, *The Daily News*, *The New York Post*, *The Village*

⁴ Results from Pager (2003) suggest that providing information about a criminal record to employers who do not request the information does little to affect hiring decisions.

Voice, and the online service, *Craigslist*. The broad range of job listings allows for extensive coverage of the entry-level labor market in New York. From the available population of job listings, we took a simple random sample of advertisements each week. Testers in each team applied to each job within a 24-hour period, randomly varying the order of the applicants.

Our dependent variable recorded any positive response in which a tester was either offered a job or called back for a second interview. Callbacks were recorded by voicemail boxes set up for each tester. For employer i ($i=1, \dots, N$) and tester t ($t=W, B$, or L for white, black, or Latino), a positive response, y_{it} , is a binary variable that scores 1 for a job offer or callback, and 0 otherwise. We define the level of differential treatment as the ratio in positive response rates for each comparison, $r_{WB} = \bar{y}_W / \bar{y}_B$, where \bar{y}_t is the proportion of positive responses for testers of race t . Under the null hypothesis of equal treatment, $r_{WB}=1$, the proportion of positive responses received by each racial group is equal. For data on matched pairs, several statistical tests have been proposed that use within-pair comparisons to account for the correlation of observations from the same pair (e.g., Heckman and Seigelman 1993; Agresti 1990). In our case, where three testers are sent to the same employer, we have a matched triplet and information from all three testers should ideally contribute to an inference about a contrast between any two. Ghosh, Chen, Ghosh and Agresti (2000) suggest that matched pairs can be fit with a hierarchical logistic regression with a random effect for each pair. We generalize their approach to our matched triplets, fitting a random effect for each employer. If the probability of a positive response is given by $E(y_{it})=p_{it}$, the hierarchical model is written,

$$\log\left(\frac{p_{it}}{1-p_{it}}\right) = \alpha_i + \beta B_{it} + \gamma L_{it}$$

where B_{it} is a dummy variable for blacks, L_{it} is a dummy variable for Latinos, and the random effects for employers, α_i , is given a normal distribution. The employer effects, α_i , induce a correlation among observations from the same employers and reduce standard errors as in the usual matched-pair inference. The models are estimated with Markov Chain Monte Carlo methods. Intervals for the ratios (r_{WB} , r_{WL} , and r_{BL}) are constructed by taking random draws from the posterior predictive distribution of y_{it} . Alternative methods that adjust for clustering by employer yield similar results to those reported below.

The Problems of Matching

The quality of audit results depends on the comparability of the testers. Because race cannot be experimentally assigned, researchers must rely on effective selection and matching to construct audit teams in which all relevant characteristics of testers are similar—something that may leave substantial room for bias. Heckman and Seigelman (1993) have argued that researchers know little about the hard-to-observe characteristics highly prized by employers. If testers are poorly matched, evidence of discrimination may be merely an artifact of idiosyncratic tester characteristics.

Bertrand and Mullainathan (2004) remove tester effects in a “correspondence test” which sent resumes with common white and African American names to employers in Boston and Chicago. Their design allows the random assignment of resume characteristics to white- and black-sounding names, largely removing concerns about unobserved characteristics. Resumes with white names were 50 percent more likely to receive callbacks from employers than those with black names (9.7 vs 6.5 percent). Studies of this kind provide some reassurance that results from the body of audit research are not driven by tester effects alone.

Because we rely on in-person audits for our study of low-wage labor markets, the effective matching of testers becomes a key concern.⁵ We reviewed over 300 applicants to identify our final team of 10 testers.⁶ Successful applicants were subject to two lengthy screening interviews and a written test, a far more probing job selection process than the testers encountered in their fieldwork.⁷ Each tester passed through a standard training period, was required to dress uniformly, and was subject to periodic spot checks for quality control.⁸

Despite these measures, uncontrolled tester effects remain a threat to inferences about discrimination. We assess the sensitivity of our results to testers in four ways. First, each tester may have a unique effect, but the average effect of the testers may be zero. In this case, the observations from each tester will be correlated and standard errors that ignore this clustering will tend to be too small. We allow for this possibility by fitting an additional random effect for each tester in our hierarchical logistic regression.⁹ Second, each tester may have a unique effect, but these effects may not average to zero. To assess the sensitivity of our results to each tester we perform a type of cross-validation in which the treatment effect is recalculated for a reduced data set, sequentially omitting those employers associated with each individual tester.

⁵ In-person audits allow for the inclusion of a wide range of entry-level job types (which often require in-person applications); they provide a clear method for signaling race, without concerns over the class-connotations of racially distinctive names (e.g., Fryer & Levitt, 2004); and they provide the opportunity to gather both quantitative and qualitative data, with information on whether or not the applicant receives the job as well as how he is treated during the interview process.

⁶ These 300 applicants had already been pre-screened for appropriate age, race, ethnicity, and gender.

⁷ Indeed, as an employer him/herself, the researcher must identify subtle cues about applicants that indicate their ability to perform. Whether or not these cues are explicit, conscious, or measurable, they are present in a researcher's evaluation of tester candidates as they are for employers' evaluations of entry-level job applicants. Like employers, researchers are affected by both objective and subjective/subconscious indicators of applicant quality in their selection and matching of testers in ways that should ultimately improve the nuanced calibration of test partners.

⁸ On several occasions we "tested the testers," for example by hiding a video cameras in the offices of confederate employers, allowing us to monitor testers' compliance with the audit protocol and for use as a training tool to better synchronize the performance of test partners (not counted among results).

⁹ Additional models (not shown here) test for fixed effects of several individual testers, finding no significant differences across testers within each race group.

Confidence intervals below are based on models including employer and tester random effects. These results are compared to cross-validation treatment effects based on subsets of the data in which individual testers are sequentially omitted. Third, we recalculate our key results for each unique combination of testers matched in teams over the course of the fieldwork (Appendix B). These results, though sensitive to small sample sizes for some combinations, tend to support the consistency of effects across a number of tester comparisons.

As a final investigation of tester effects, we consider the possibility that the expectations or behaviors of testers may influence the audit results in nonrandom ways. For example, if a black tester expects to be treated poorly by employers, he may appear more withdrawn, nervous, or defensive in interactions. The nature of the interaction may then create a self-fulfilling prophecy, in which the tester experiences poor outcomes, but for reasons unrelated to his race (Steele & Aronsen, 1995). We can assess these tester effects by analyzing the degree to which personal contact between testers and employers is associated with widening racial disparities. Overall we find no evidence that testers' interpersonal style or expectations are associated with increasing discrimination; if anything, personal contact appears to weaken the effect of race, suggesting that the performance of the testers worked to minimize rather than exaggerate our measures of racial bias (See Appendix A).

The problem of imperfect matching among testers is a well-understood vulnerability of audit experiments, and one to which we devoted considerable attention. Ironically, however, the achievement of perfect matches can itself produce distortions in the hiring process. Because audit partners are matched on all characteristics that are most directly relevant to hiring decisions (e.g., education, work experience, physical appearance, etc.), employers may be forced to privilege relatively minor characteristics simply out of necessity of breaking the

tie (Heckman, 1998: 111). If employers care only marginally about race, but are confronted with applicants equal on all other dimensions, this single characteristic may take on greater significance in that particular hiring decision than is true under normal circumstances when evaluating real applicants who differ according to multiple dimensions.

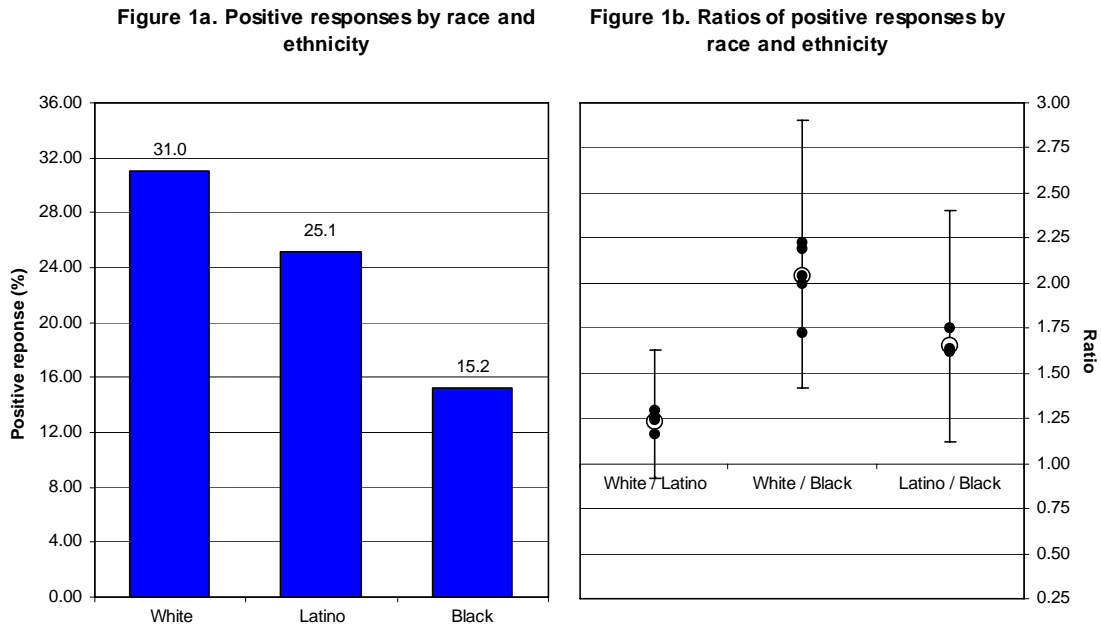
The design of our study, which focuses on the early stages of the hiring process, avoids situations in which employers must choose only a single applicant. By using “callbacks” as one of our key dependent variables, we include cases which represent an employer’s first pass at applicant screening.¹⁰ Indeed, employers typically interview an average of eight applicants for each entry-level job they fill (see Pager, 2007). If race represents only a minor concern for employers, we would expect all members of our audit team to make it through the first cut. If race figures prominently even in the first round of review, we can infer that this characteristic has been invoked as more than a mere tie-breaker. In these cases, the evidence of race-based decision-making is quite strong.

Experimental Results

The primary results from the audit study focus on the proportion of applications submitted by testers which elicited either a callback or job offer from employers, by race of the applicant. Our first team assesses the effects of race discrimination by comparing the outcomes of equally qualified white, Latino, and black applicants. Positive response rates for each race-ethnicity group are reported in Figure 1a. In applications to 171 employers, the white tester received a callback or job offer 31.0 percent of the time, compared to a positive response rate of 25.2

¹⁰ Positive responses recorded in this study were fairly evenly split among callbacks and job offers. Employers who made offers on-the-spot were typically those hiring more than one applicant, thus similarly avoiding a situation in which a forced-choice becomes necessary. In fact, rates of job offers were more evenly distributed by race relative to callbacks (see Tables A1 and A2).

percent for Latinos and 15.2 percent for blacks. These results show a clear racial hierarchy, with whites in the lead, followed by Latinos, and blacks trailing behind.



Note: Hollow circles in Figure 1b indicate point estimates of the ratio. Solid circles indicate ratios obtained by sequentially dropping testers from the analysis. 95% confidence intervals were estimated from a logistic hierarchical regression with employer and tester random effects. Number of employers = 171.

Figure 1.b shows the contrasts between the three race groups. Once we adjust for employer and tester effects, the confidence interval for the white-Latino ratio of 1.23 includes one.¹¹ By contrast, the white-black ratio of 2.04 is substantively large and statistically significant. The positive response rate for blacks is also significantly lower than the rate for Latinos. The points on the figure show the cross-validation results obtained by sequentially dropping audits associated with each individual tester. In each case, all ratios remain consistently greater than

¹¹ Note that in a model pooling the audits from the two teams, with main effects for team and criminal background, the white-Latino gap becomes statistically significant. The generality of this result certainly deserves more study. The Puerto Ricans of New York that our Latino testers represented are a longstanding community of U.S. citizens. In other local labor markets where markers of citizenship and accent are more prominent sources of difference, evidence of ethnic discrimination may well be stronger.

one, indicating that employers treat blacks less positively regardless of which testers are applying for jobs. Overall, these results indicate that white and Latino job applicants are significantly preferred by employers relative to equally qualified blacks. The findings suggest that a black applicant would have to search twice as long as an equally qualified white applicant before receiving a callback or job offer from an employer.

The results from this first comparison indicate the strong racial preferences of employers; but the magnitude of this preference remains somewhat abstract. To calibrate the effects of race against another stigmatized category, the ex-offender, we repeated the experiment, this time assigning a criminal record to the white tester. Figure 2 shows the percentage of positive responses—job offers or callbacks—received by each tester. In this experiment, whites with criminal records obtained positive responses in 17.2 percent of 169 job applications, compared to 15.4 for Latinos, and 13.0 percent for blacks.¹² The racial advantage experienced by white testers narrows substantially in this comparison, and yet still the white applicant with a criminal record does just as well if not better than his minority counterparts with no criminal background.

¹² Note that the overall rate of positive responses is lower for all testers relative to the results presented in Figure 1. This is likely due to the staggered fielding of teams and resulting differences in the composition of employers audited across the two periods of time.

Figure 2a. Positive responses by race, ethnicity, and criminal record

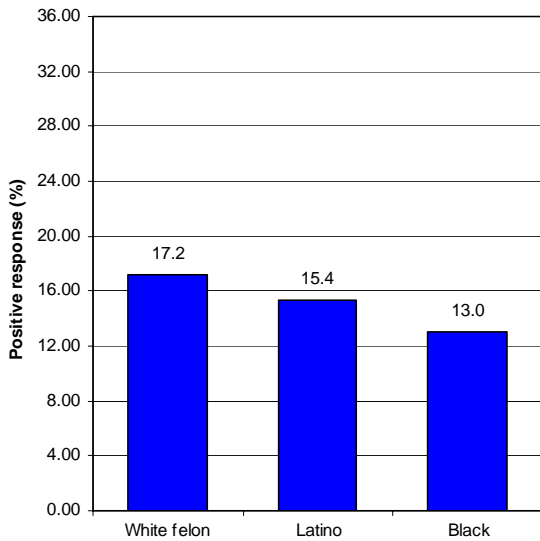
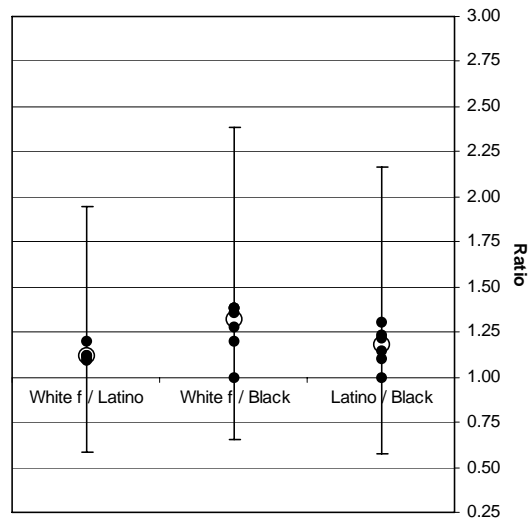


Figure 2b. Ratios of positive responses by race, ethnicity, and criminal record



Note: Hollow circles in Figure 2b indicate point estimates of the ratio. Solid circles indicate ratios obtained by sequentially dropping testers from the analysis. 95% confidence intervals were estimated from a logistic hierarchical regression with employer and tester random effects. Number of employers = 169.

Figure 2b shows that the white-Latino ratio is close to one and the confidence interval overlaps one by a large margin. The white-black ratio is now a statistically insignificant 1.32, compared to a significant ratio of 2.04 when the white tester had a clean record. As in the previous experiment, Latinos were preferred to blacks, but in this case the difference is not significant. As before, the cross-validation treatment effects, obtained by dropping employers associated with one particular tester, are all close to one. These results indicate that, regardless of which testers were sent into the field, employers differentiated little among the three applicant groups.

The comparison of a white felon to black and Latino applicants with clean backgrounds provides a vivid calibration of the effects of race on hiring decisions. While ex-offenders are disadvantaged in the labor market relative to applicants with no criminal background, the stigma of a felony conviction appears no greater than that of minority status. According to

these results, New York employers view minority applicants as essentially equivalent to whites just out of prison.

Theories of statistical discrimination point to the very high incarceration rates among young black men as a key explanation for employers' indifference between white felons and blacks with potentially unobserved criminal histories. Current estimates suggest that roughly 18 percent of young black men with high school degrees will experience incarceration by their early 30s (Pettit & Western, 2004), and a larger fraction are surely affected by lower level convictions and arrests. Still, that known information about a serious criminal conviction among a white applicant is viewed with no more concern than the assumed characteristics of a young black man points to the strength and intensity of contemporary racial attitudes. Overcoming these negative expectations, even for a candidate with otherwise appealing characteristics, requires the negotiation of a number of significant hurdles not present for white job seekers. In the following section, we examine the specific types of hurdles encountered by our minority testers in their search for low-wage work.

Race at Work: An Examination of Interactions between Applicants and Employers

The strong evidence of hiring discrimination from the field experiment provides a clear measure of the continuing significance of race in employer decision-making. These numbers, however, tell us little about the process by which race comes to matter. Fortunately, the in-person design of the experiment allows us to further supplement the experimental findings with qualitative evidence from testers' field notes reporting their interactions in job interviews. These detailed narratives directly report on employers' deliberations and help to suggest when and how race comes into play.

This analysis examines cases in which testers had sufficient interaction with employers for content coding. Consistent with the notion that contemporary forms of discrimination are largely subtle and covert, many cases contained little that would lead us to anticipate the differential treatment that followed. Of those that do, however, we observe several consistent patterns in employers' responses. In particular, three categories of behavior stand out and are examined in detail below: categorical exclusion, shifting standards, and race-coded job channeling. The first type of behavior, categorical exclusion, is characterized by an immediate or automatic rejection of the black (or minority) candidate(s) in favor of the white applicant. Occurring early in the application process, these decisions involve little negotiated interaction, but rather appear to reflect a fairly rigid application of the employers' racial preferences or beliefs. A second category of behavior, shifting standards, reflects a more dynamic process of decision-making. Here we observe cases in which employers' evaluations of applicants appear actively shaped or constructed through a racial lens, with similar qualifications or deficits taking on varying relevance depending on the race of their bearer. Finally, a third category of behavior moves beyond the hiring decision to a focus on job placement. Race-based job channeling represents a process by which minority applicants are steered toward particular job types, often those characterized by greater physical demands and reduced customer contact.

By observing the interactions that characterize each of these behavior types, we directly view the processes by which discrimination takes place. At the same time, we emphasize that this discussion is intended as a descriptive exercise rather than a formal causal analysis. Indeed, the categories we identify are not mutually exclusive; some of the same processes may be operating simultaneously, with employers' shifting evaluations of applicant skills leading to differential patterns of job channeling, or assumptions about the appropriate race of the

incumbent of a particular position leading to forms of categorical exclusion. Likewise, we note that this typology cannot account for all of the differential treatment we observe—indeed, at least half such cases were made on the basis of little or no personal contact between applicant and employer, leaving the nature of the decision entirely unobserved. With these caveats in mind, we nevertheless view the analysis as providing a unique contribution to the study of racial discrimination, revealing mechanisms at work that observational research can rarely identify.

Categorical Exclusion

Few interactions between our testers and employers revealed signs of racial animus or hostility toward minority applicants. At the same time, a close comparison of test partners' experiences show a number of cases in which race appears to be the sole or primary criterion for an employer's decision. With little negotiation or deliberation over the selection decision, these employers' decisions seem to reflect a preexisting judgment regarding the adequacy or desirability of a minority candidate. The uncompromising nature of the employer's decision can be characterized as a form of categorical exclusion.

A clearcut case of categorical exclusion was provided when all three testers were present for an interview and received a perfunctory decision. Zuri, an African American tester, reports his experience applying for the warehouse worker position: *“The original woman who had herded us in told us that when we finished filling out the application we could leave because “there’s no interview today, guys!” ...When I made it across the street to the bus stop ...the woman who had collected our completed applications pointed in the direction of Simon, Josue and myself [the three test partners] motioning for us to return. All three of us went*

over.... She looked at me and told me she “needed to speak to these two” and that I could go back.” Zuri returned to the bus stop, while his white and Latino test partners were both asked to come back at 5pm that day to start work. Simon, the white tester, reports, “She said she told the other people that we needed to sign something—that that’s why she called us over—so as not to let them know she was hiring us. She seemed pretty concerned with not letting anyone else know.”

In this context, with no interview and virtually no direct contact with the employer, we observe a decision that appears based on little other than race. The job is a manual position for which Zuri is at least as able, and yet he is readily passed over in favor of his white and Latino counterparts.

This case is unusual in that the three testers were rarely present at a given location at the same time. More often, evidence of differential treatment was found only after comparing the testers’ reports side by side. But here too we observed several hiring decisions in which race appeared to be the sole or primary source of differentiation. In one case, for example, the three testers inquired about a sales position at a retail clothing store. Joe, one of our African American testers, reports: “[The employer] *said the position was just filled and that she would be calling people in for an interview if the person doesn’t work out.*” Josue, his Latino test partner, was told something very similar: “*She informed me that the position was already filled, but did not know if the hired employee would work out. She told me to leave my resume with her.*” By contrast, when Simon, their white test partner, applied last, his experience is notably different: “*...I asked what the hiring process was—if they’re taking applications now, interviewing, etc. She looked at my application. ‘You can start immediately?’ Yes. ‘Can you*

start tomorrow?’ Yes. ‘10 a.m.’ She was very friendly and introduced me to another woman (white, 28) at the cash register who will be training me.”

A similar case arose a few weeks later at an electronics store. Joe, the African American tester, was allowed to complete an application but was told that his references would have to be checked before he could be interviewed. Meanwhile, Simon and Josue, his white and Latino partners, applied shortly thereafter and were interviewed on the spot. Joe’s references were never called, while Simon received a callback two days later offering him the job.

When evaluated individually, these interactions did not indicate racial prejudice or discrimination. And yet, side by side, we see minority applicants encounter barriers not present for the white applicant, with employers citing excuses for putting off the black or minority candidate (e.g., “the job has already been filled”; or “we’d have to check your references before we can proceed”), which in the white applicant’s case appear not to apply. To be sure, certain cases may capture random error—perhaps the position became available between the testers’ visits, leading to the employer’s differential response. Still, the consistency of the pattern in these data suggest that random error is unlikely to be a dominant factor. Indeed, of the 171 tests conducted by the first team (no criminal background), white testers were singled out for callbacks or job offers 15 times, whereas there was only a single case in which a black tester received a positive response when his white or Latino partner did not.¹³

¹³ There were an additional 13 cases in which both white and Latino testers received positive responses, and 7 in which the Latino tester alone was selected (see Appendix B)..[I delete this sentence because the quantitative section makes this same point]

These cases of categorical exclusion, though directly observed in just a small number of the audits (5 of the 47 cases of differential treatment across the two teams), reveal one form of discrimination in which racial considerations appear relatively fixed and unyielding. Before black (or minority) candidates have the chance to demonstrate their qualifications, they are weeded out on the basis of a single categorical distinction.¹⁴

Categorical exclusion represents one important form of discrimination. These rather abrupt interactions reveal little about the underlying motivation that drives employers' decisions, but demonstrate the sometimes rigid barriers facing minority job seekers. In these cases, black/minority applicants are discouraged or dismissed at the outset of the employment process, leaving little opportunity for a more nuanced review.

Shifting Standards

Making it past the initial point of contact was not the only hurdle facing minority applicants. Indeed, among those who recorded more extensive interaction with employers, we observe a complex set of racial dynamics at work. On the one hand, personal contact with employers was associated with significantly improved outcomes for all testers and a narrowing of the racial gap (see Appendix A). The interpersonal skills of the testers seemed to reduce the influence of racial bias, or at very least not to exacerbate it. And yet, even in the context of this more personalized review, we see evidence of subtle bias in the evaluation of applicant qualifications. In particular, a number of cases reveal how the “objective” qualifications of

¹⁴ The denominator represents the total number of cases of black-white differential treatment from the first (n=28) and second (n=19) teams. In calculating the numerator, a number of additional cases of differential treatment at the initial stage of review are not included here. At least half of the tests were completed with very little or no contact with the employer (with similar rates of contact by race). In such cases, differential treatment may reflect categorical exclusion (based on a visual assessment of the candidate), shifting standards (based on a review of the completed applications), random error, or something else.

testers appear to be re-interpreted through the lens of race. Though testers' resumes were matched on education and work experience, employers at times appeared to weigh qualifications differently depending on the race of the applicant. In the following interactions, we see evidence that the same deficiencies of skill or experience appear to be more disqualifying for the minority job seekers (n=11).

In one case, Joe, an African American tester, was not allowed to apply for a sales position as a result of his lacking direct experience. He reports: "*When [the employer] called me she handed me back my resume and told me they didn't have any positions to offer me...She said... I needed a couple years of experience.*" The employer voices similar concerns with Kevin, Joe's white partner. Kevin writes: "*[The employer] looked at my resume and said, 'There is absolutely nothing here that qualifies you for this position.'*" And yet, despite his clear lack of qualifications, Kevin was then offered the sales job and asked to come back the next morning. In interactions with both testers the employer clearly expresses his concern over the applicants' lack of relevant work experience. In the case of the white applicant, however, this the lack of experience does not end up representing grounds for disqualification, whereas the black applicant is readily dismissed.

In another case, Josue, a Latino tester, applied for a job as a line cook at a mid-level Manhattan restaurant. He reports: "*[The employer] then asked me if I had any prior kitchen or cooking experience. I told him that I did not really have any, but that I worked alongside cooks at [my prior job as a server]. He then asked me if I had any 'knife' experience and I told him no... He told me he would give me a try and wanted to know if I was available this coming Sunday at 2 p.m.*" Simon, his white test partner, was also invited to come back for a trial period. By contrast, Joe, the black tester found, "*they are only looking for experienced line*

cooks.” Joe continued, *“I started to try and convince him to give me a chance but he cut me off and said I didn’t qualify.”* Though none of the testers had direct experience with kitchen work, the white and Latino applicants were viewed as viable prospects, while the black applicant was rejected because he lacked experience.

In other cases, real skill or experience differences were perceived among applicants despite the fact that the testers’ resumes were designed to convey identical qualifications. In one case, for example, the testers applied for a job at a moving company. Joe, the African American applicant, spoke with the employer about his prior experience at a delivery company. Nevertheless, *“[the employer] told me that he couldn’t use me because he is looking for someone with moving experience.”* Josue, his Latino partner, presented his experience as a stocker at a delivery company and reports a similar reaction: *“He then told me that since I have no experience... there is nothing he could do for me.”* Simon, their white test partner, presented his identical qualifications to which the employer responds more favorably: *“To be honest, we’re looking for someone with specific moving experience. But because you’ve worked for [a storage company], that has a little to do with moving.”* He wanted me to come in tomorrow between 10 and 11 for an interview.” The employer is consistent in his preference for workers with relevant prior experience, but he is willing to apply a more flexible, inclusive standard in evaluating the experience of the white applicant than in the case of the minority applicants. The shifting standards used by employers, offering more latitude to marginally skilled white applicants than similarly qualified minorities, suggests that even the evaluation of “objective” information can be affected by underlying racial considerations.

Even in cases where the white tester presented himself as a felon, we see some evidence that this applicant was afforded the benefit of the doubt in ways that his minority

counterparts were not. In applying at an auto dealership, for example, the three testers were met with very different reactions. Joe, the black tester, was informed at the outset that the only available positions were for those with direct auto sales experience. When Josue, his Latino partner, applied, the lack of direct auto sales experience was less of a problem. Josue reports: *“He asked me if I had any customer service experience and I said not really.... He then told me that he wanted to get rid of a few bad apples who were not performing well. He asked me when I could start....”* Josue was told to wait for a call back on Monday. When the employer interviewed Keith, their white ex-felon test partner, he was first given a stern lecture regarding his criminal background. The employer warned, *“I have no problem with your conviction, it doesn’t bother me. But if I find out money is missing or you’re not clean or not showing up on time I have no problem ending the relationship.”* And yet, despite the employer’s concerns, Keith was offered the job on the spot. The benefit of the doubt conferred by whiteness persists here even in the context of a white applicant just released from prison. Reservations about relevant work experience and concerns over possible problem behaviors associated with a criminal background are set aside as the employer selects the white felon applicant but not the similarly qualified black or Latino applicants with no criminal background.

A pattern in these interactions, when compared side by side, is the use of double standards—seeking higher qualifications from blacks than non-blacks, or viewing whites as more qualified than minorities presenting equivalent resumes. Recent research emphasizes employers’ use of race as a proxy for difficult-to-observe productivity characteristics (Moss and Tilly 2001; Waldinger and Lichter 2003). Where we have detailed field notes on job interviews, the interactions we observe suggest that employers also use race in interpreting and weighting observable skill characteristics. Standards appeared to shift as employers evaluated

the qualifications of various applicants differently depending on their race or ethnicity (see also Biernat and Kobrynowicz, 1997; Yarkin et al., 1982).

Race Coded Job Channeling

The first two categories of differential treatment focus on the decision to hire. Beyond this binary decision, employers also face decisions about where to place a worker within the organizational hierarchy. Here, at the point of job placement, we observe a third category of differential treatment. In our review of the testers' experiences, we noticed that applicants were at times encouraged to apply for jobs different than the ones initially advertised or the ones about which they had inquired. In many cases, these instances of channeling suggest a race-coding of job types, whereby employers prefer whites for certain positions and minorities for others. For example, in one case, Zuri, a black tester, applied for a sales position at a lighting store. A sign on the glass in front of the store indicated, "Salesperson Wanted." Zuri describes the following interaction: *"When she asked what position I was looking for I said I was open, but that since they were looking for a salesperson I would be interested in that. She smiled, put her head in her hand and her elbow on the table and said, 'I need a stock boy. Can you do stock boy?'"* Zuri's white and Latino test partners, by contrast, were each able to apply for the advertised sales position.

Another African American tester, Joe, was similarly channeled out of a customer service position in his application to a Japanese restaurant. Joe reports: *"I told her I was there to apply for the waiter position and she told me that there were no server positions. I told her it was advertised in the paper, and she said there must have been a mistake. She said all she had available was a busboy position. I told her since there was no waiter position, I would*

apply for the busboy.” Meanwhile later that day, Kevin, his white test partner, was hired for the server position on the spot.

We also observed channeling of the Latino testers. Josue’s fieldnotes of an audit at a clothing retailer begins by describing the “young white 20-something women running the place.” One of the women interviews him and asks about past work experience. She asks him what job he’s applying for—“*I told her ‘sales associate,’*” Josue replied, presenting a resume on which the most recent job listed was as a sales assistant at a sporting goods store. “*She then told me that there was a stock position and asked if I would be interested in that.*” Josue ended up getting the stocker job, and was asked to start the next day.

In many cases, these instances of channeling are coded as “positive responses” in the initial analyses. Indeed, our key concern is about access to employment of any kind. But this general focus masks another form of the racial bias at work. A closer analysis of the testers’ experiences suggests that decisions about job placement, like hiring more generally, often follow a racial logic. We coded all instances of job channeling across both our teams and counted 53 cases (compared to 172 positive responses). By comparing the original job title to the suggested job type, these cases were then categorized as downward channeling, upward channeling, lateral channeling, or unknown. Downward channeling is defined as (1) a move from a job involving contact with customers to a job without, say from server to busboy; (2) a move from a white collar position to a manual position, say from sales to stocker; or (3) a move in which hierarchy is clear, say from supervisor to line worker. Upward channeling is defined as a move in the opposite direction. We focus on these two types of channeling for our current analysis. After eliminating cases in which all testers within a team were similarly

channeled, we have 23 additional cases of differential treatment unrecorded by our initial measurement of job offers and callbacks.

Like hiring criteria, job placement is also patterned by race (see Table 1). Black applicants were channeled into lower positions in 9 cases, Latinos were channeled down in 5 cases, whereas whites experienced downward channeling in only 1 case. Many of these cases were restaurant jobs in which the tester applied for a position as server but was steered to a job as busboy or dishwasher. Almost all were cases in which the original position required extensive customer contact while the suggested position did not (e.g., salesperson to stocker). Sometimes, testers were guided into lower positions because their resumes indicated limited work experience, but racial differences in channeling suggest insufficient work experience was more penalizing for minorities than whites. The one case of downward channeling among white applicants involved a tester presenting a criminal background.

Table 1. Job Channeling by Race^(a)

original job title	suggested job
Blacks channeled down	
Server	Busser
Counter person	Dishwasher/porter
Server	Busboy
Assistant manager	Entry fast food position
Server	Busboy/runner
Retail sales	Maintenance
Counter person	Delivery
Sales	Stockboy
Sales	Not specified ^(b)
Latinos channeled down	
Server	Runner
Sales	Stock
Steam cleaning	Exterminator
Counter person	Delivery
Sales	Stock person
Whites channeled down	
Server	Busboy
Latinos channeled up	
Carwash attendant	Manager
Warehouse worker	Computer/office
Whites channeled up	
Line Cook	Waistaff
Mover	Office / Telesales
Dishwasher	Waistaff
Driver	Auto detailing
Kitchen job	“Front of the house” job
Receptionist	Company supervisor

(a) This table includes all cases of channeling, except when all testers on a team were channeled similarly.

(b) Employer told tester “sales might not be right for you...”

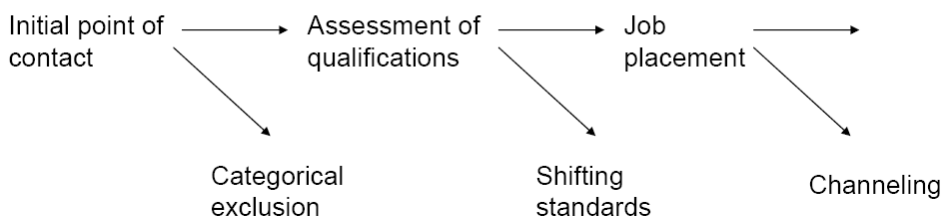
In fact, whites were more often channeled up than down. In at least six cases, white testers were encouraged to apply for jobs that were of a higher-level or required more customer contact than the initial position they inquired about. In one case, the white tester was even encouraged to apply for a supervisory position, despite limited work experience. Kevin reports: *“[The employer] then asked me if I had any experience in construction. I told him I did not. He asked if I would be okay working with people that have thick accents like his. I told him that was fine. He then told me that he wanted me to be his new company supervisor.”*

Employers thus appear to have strong views about what kind of person is appropriate for what kind of job, either based on their own assumptions of worker competence, or assumptions about what their clients expect/prefer in the appearance of those serving them. Consistent with the testers’ field notes, employers appear to apply more stringent hiring criteria to minority workers, preferring whites for jobs requiring greater skill or responsibility. In addition, minorities are disproportionately channeled out of customer service positions, consistent with other research in which employers view minority applicants as lacking communication skills or as otherwise discomfiting for customers. Though our testers presented highly effective styles of interpersonal communication, the cursory review process for these jobs often seemed to leave group membership more salient than any individuating characteristics. In addition to whether or not the tester gets the job then, the type of job also reveals a racialization of employment decisions.

The three types of differential treatment we observe illustrate how employers enact their racial preferences in the hiring process. We see little evidence of outward hostility or racial animus in these interactions, but rather more subtle forms of discouragement or rejection. At multiple points in the hiring process, black (minority) applicants face additional hurdles or

barriers that reduce their chances of employment and affect the quality of jobs for which they are considered. The processes identified in the preceding discussion are schematically illustrated in Figure 3. At each of the three decision points, we see pathways deflected by various forms of racial bias. Subtle differences in employers' responses—often imperceptible to the applicants themselves—together produce a pattern of outcomes systematically affected by race.

Figure 3. Discrimination at Three Decision Points



Complementing the quantitative indicators of differential treatment, these qualitative observations provide a rare window into the *processes* by which discrimination occurs. The three categories of differential treatment observed in these data point to the range of experiences that constitute discrimination in the employment process.¹⁵ In a small number of cases, minority testers were disqualified early on in decisions that appear to reflect fairly rigid

¹⁵ To be sure, our study captures only a few of the many pathways in the employment process potentially affected by racial bias. Beyond our window of observation, the pathways of this diagram would presumably continue along later points in the employment process, including wage setting decisions, training opportunities, promotion, and termination decisions. This research represents one incremental contribution to understanding—and documenting—how race matters in contemporary low-wage labor markets.

preferences of employers. These instances of categorical exclusion represent one of the most extreme forms of discrimination, wherein minority applicants have little opportunity to overcome employers' potential concerns. By contrast, a larger number of interactions suggest a more complicated set of negotiations at play. In evaluating applicant qualifications, minority applicants, and black men in particular, appear to be held to a higher standard than their white counterparts, disqualified more readily or hired more reluctantly than their white partners with identical skills and experience. Further, racialized assessments of applicant quality and "fit" affect not only the decision to hire, but also decisions about job placement, with minority applicants more often channeled into positions involving less skill and/or less customer contact than otherwise similar whites. Together, these experiences illustrate how racial disadvantage is dynamically constructed and reinforced, with the assessment of applicant qualifications and suitability subject to interpretation and bias. While not an exhaustive catalogue of discrimination experiences, the fact that these dynamics are observed in naturalistic settings (with little prompting) attests to their relative frequency and regularity. Together, these experiences help to reveal how race shapes employers' evaluations in subtle but systematic ways, with important implications for structuring opportunity along racial lines.

Discussion

Sending trained testers with equivalent resumes to apply for entry-level jobs revealed clear evidence of discrimination among low-wage employers in New York City. Blacks were only half as likely to receive a callback or job offer relative to equally qualified whites; moreover black and Latino applicants with clean backgrounds fared no better than a white applicant just released from prison. The magnitude of these racial disparities provides vivid evidence of the

continuing significance of race in contemporary low-wage labor markets, with a racial hierarchy among young men favoring whites, then Latinos, and blacks as the candidates of last resort.

The episodes of discrimination recorded in this study were seldom characterized by overt racism or hostility. In fact, our testers rarely perceived any signs of clear prejudice. Instead, side by side comparisons of our testers' experiences reveals a pattern of subtle but consistent differential treatment. Minority applicants were disqualified more readily or hired more reluctantly than their white partners with identical skills and experience. Additionally, black and Latino applicants were routinely channeled into positions requiring less customer contact and more manual work than their white counterparts. Where we observe interactions between applicants and employers, we see a small number of cases that reflect seemingly rigid racial preferences on the part of employees. More often, differential treatment emerged in the social interaction of the job interview. Employers appeared to see more potential in the stated qualifications of white applicants, and more commonly viewed white applicants as a better fit for more desirable jobs.

The findings of discrimination presented here are particularly striking because the testers in this study represented a best-case scenario for low-wage job seekers. The testers were college-educated young men with effective styles of self-presentation. Though posing as high school graduates with more limited skills, these young men stood well above the typical applicant for these low-wage jobs. The effects of race among individuals with fewer hard and soft skill advantages may well be larger than those estimated here.

At the same time, while we find robust evidence of racial discrimination, we should be careful not to interpret these results as showing the level of discrimination actively experienced

by minority job seekers in the New York labor market. Our sampling design, based on employers not workers, over-represents small firms relative to their share of employment, thus including many restaurants and independent retailers for whom hiring is less bureaucratic, and who lack the human resource departments that manage the equal employment opportunity obligations of large firms (Dobbin et al. 1993). Nevertheless, our sampled employers well represent the kinds of low-skill service work that dominates low-wage urban labor markets.

A second limitation on the generalizability of our findings results from our sampling procedures based on classified advertisements. Surveys of job seekers suggest that 25 to 30 percent of non-college jobs are filled by classified ads, with the remainder filled through some combination of network referrals, walk-in applications, and employment agencies (Holzer, 1987). These search strategies may generate a different distribution of employers from that reported here. Some argue that the focus on jobs advertised through metropolitan newspapers understates the extent of discrimination. Firms who wish to discriminate, it is argued, are more likely to advertise job openings through more restrictive channels, such as through the networks of existing employees, employment agencies, or more selective publications (Fix & Struyk 1993:32; Petersen et al. 2000; Elliott 2000). Others, by contrast, argue that any random sample of employers will overstate the extent of discrimination actually experienced by job seekers. If black applicants can identify and avoid firms that discriminate, the actual incidence of labor market discrimination will be correspondingly reduced (Becker, 1957; Heckman, 1998). Of course, the ability of minority workers to avoid the effects of discrimination by self-selecting into non-discriminatory firms requires that a sufficient number of non-discriminatory employers exist; that there are no differences in the quality of jobs offered by employers who do and do not discriminate; and that the search costs necessary to locate non-discriminatory

employers are trivial. Future research using microdata to track the search patterns and outcomes of black and white job seekers would provide better leverage on this question. From our data, we can more safely conclude that job searches across a wide range of employers represented by the classified ads of five New York newspapers reveal substantial discrimination. Understanding how job seekers adapt to this reality remains a challenge for future research.

The findings for the New York City labor market reported here add to evidence of racial discrimination in employment reported from recent field experiments in Milwaukee, Boston, and Chicago (Pager, 2003; Bertrand & Mullainathan, 2004). By contrast, the significant evidence of discrimination found in these studies contrasts sharply with recent survey research showing small racial differences in wages (Farkas and Vicknair 1996; Neal and Johnson 1996). How might these disparate findings be reconciled? First, as noted above, the presence of discrimination in the labor market may lead workers to differentially sort across employers, such that minority job seekers queue for jobs offered by employers less likely to discriminate. These dynamics can lead to longer search or wait times for minority job seekers, even if not reflected in ultimate wage offers. Indeed, data from the late 1990s show that the unemployment spells of black men (3.1 months) are about twice as long as for whites (1.6 months) (Gottschalck 2003, 2), suggesting that the primary effects of discrimination on labor market outcomes may be reflected in employment differentials rather than wages.¹⁶

¹⁶ Johnson & Neal (1998), for example, find that, after controlling for cognitive ability and other human capital characteristics, black-white differences in *employment* among young men remain large and statistically significant. The importance of employment over wages for racial inequality in economic status is likely to be especially great for young noncollege men, for whom the overall level of wage dispersion is low. Later in the life course, as wage dispersion increases and labor force experience cumulates, the racial wage gap becomes more pronounced (e.g., Tomaskovic-Devey et al., 2005). For a historical example, see Whatley (1990), who shows that

Second, the experience of discrimination may further add to the psychic costs of the job search process, prompting some to opt out altogether. If discrimination discourages all but the most motivated and most able black job seekers, black wage earners would represent an increasingly select group. Through the 1990s, increasing numbers of young black men dropped out of the formal labor market, contributing to an artificial convergence of black and white wages (Western & Pettit, 2005). Without effectively accounting for the processes that precede labor force participation—including discrimination—wage estimates can account for only one incomplete picture of the larger employment process.

Our findings add to a large research program demonstrating the continuing contribution of discrimination to racial inequality in the post-civil rights era. Still, significant questions remain unanswered. The audit experiment necessarily focuses on the hiring behavior of employers but does not examine the skills, preferences, and networks of job seekers. We do not know, and few research designs have been devised to test, the relative magnitude of the effects of discrimination compared to the effects of the human and social capital. Such an analysis would need to study both employers as they screen job applicants, and workers as they search for jobs.

The effects of discrimination, relative to human and social capital, should also be defined broadly. As evidence of discrimination in the post civil-rights era has accumulated, new research should go beyond determining whether discrimination is present to consider how the effects of discrimination unfold over the life cycle and across social space. Episodes of discrimination may not only cause unemployment at a point in time, but have long-term

despite the substantial racial barriers to employment that existed among Northern firms after World War I, blacks and whites experienced remarkably similar wage rates.

effects, weakening the attachment of minority workers to the labor market and reducing labor force participation. Discrimination may produce broader cultural effects in which work itself is de-legitimated as a fair source of opportunity. The effects of discrimination may also vary across the population, concentrating perhaps among the young men whose employment rates are lowest. Tracing these larger and more varied effects of discrimination show both the advantages and limits of the experimental method used here. The experiment allows us to infer discrimination with great certainty, but the effects of discrimination are narrowly defined. The broader effects of discrimination – on the cultural dimensions of economic life and over the life course – are harder to pinpoint but may indicate more fundamental and intractable inequalities. Such a research agenda that includes these wider consequences is less skeptical that discrimination exists and more curious about its continuing effects on not just on employment inequality, but on American race relations more broadly.

Appendix A. Robustness Checks

We examine the robustness of our primary results by examining racial and ethnic contrasts for different subsets of the data (Table A1). Though small numbers in certain cells lead to some instability in estimates, these breakdowns can help to examine the consistency of effects across the full range of the sample. To account for learning or adaptation by the testers we estimate effects for the first and second halves of the experimental period. In each period, whites and Latinos receive significantly more positive responses than blacks, and whites receive slightly more positive responses than Latinos. To examine whether our results depend strongly on any particular area within New York, we separate the experimental effects by location. Over half the audited employers were located in Manhattan. The pattern of black disadvantage was found throughout Manhattan and in the outer boroughs. To examine whether the tester first sent to an employer was more likely to be successful, the order in which testers were sent was randomized. Experimental effects are similar regardless of which tester interviewed first. Finally, we compare the outcomes of audits in which testers had little or no interaction with the employer to those characterized by more substantial personal contact. Here we see some evidence that personal contact reduces racial disparities in employment, consistent with the notion that individualizing information can help to offset the effects of negative stereotypes.

The bottom half of the table presents these same comparisons for the team in which the white applicants present evidence of a felony conviction. Across these comparisons we find treatment effects close to zero, supporting the finding that employers did not distinguish strongly between whites with criminal records and minority job seekers without. In short, these results indicate a large racial preference among New York employers for white job applicants over black applicants, smaller preference for whites over Latinos and Latinos over blacks; and little difference between white felons and minorities with clean backgrounds. All these results are robust to tester effects, experimental effects, and appear to be roughly uniform across New York City.

Table A1. Percentage of positive responses and race differences, by date, employer address, and race of first tester

Subsample (N)	White	Latino	Black	Race Differences ^a					
	(W)	(L)	(B)	W/L	W/B	L/B			
Total (171)	31	25.1	15.2	1.2	(0.02)	2	(0.00)	1.7	(0.00)
<i>Date^b</i>									
Feb 23 - Apr 7 (84)	29.8	23.8	9.5	1.3	(0.08)	3.1	(0.00)	2.5	(0.00)
Apr 8 - Jul 16 (84)	33.3	27.4	21.4	1.2	(0.04)	1.6	(0.00)	1.3	(0.05)
<i>Location^c</i>									
Below 34th St. (56)	23.2	21.4	12.5	1.1	(0.31)	1.9	(0.00)	1.7	(0.03)
34 th St. - 72nd St. (46)	30.4	21.7	17.4	1.4	(0.02)	1.8	(0.00)	1.3	(0.15)
Above 72nd St. (18)	33.3	22.2	5.6	1.5	(0.00)	6	(0.00)	4	(0.00)
Other (50)	40	34	20	1.2	(0.12)	2	(0.00)	1.7	(0.00)

<i>Race of first tester</i>									
White (68)	27.9	23.5	10.3	1.2	(0.11)	2.7	(0.00)	2.3	(0.00)
Black (45)	40	31.1	20	1.3	(0.06)	2	(0.00)	1.6	(0.01)
Latino (53)	28.3	22.6	18.9	1.3	(0.09)	1.5	(0.00)	1.2	(0.15)
<i>Type of positive response^d</i>									
Callback (171)	12.9	9.9	2.9	1.3	(0.10)	4.4	(0.00)	3.4	(0.00)
Job offer (171)	21.1	17	12.9	1.2	(0.02)	1.6	(0.00)	1.3	(0.02)
<i>Personal Contact^e</i>									
No personal contact (46) ^f	10.9	6.5	0	1.7	(0.09)	-	-	-	-
Personal contact (65)	52.3	46.2	29.2	1.1	(0.11)	1.8	(0.00)	1.6	(0.00)
	White felon	Latino	Black	Race Differences ^a					
Subsample (N)	(Wf)	(L)	(B)	Wf/L		Wf/B		L/B	
Total (169)	17.2	15.4	13	1.1	(0.25)	1.3	(0.08)	1.2	(0.17)
<i>Date^b</i>									
Mar 2 - Apr 13 (83)	16.9	13.3	10.8	1.3	(0.16)	1.6	(0.06)	1.2	(0.21)
Apr 14 - Aug 6 (82)	17.1	17.1	15.9	1	(0.43)	1.1	(0.35)	1.1	(0.34)
<i>Location^c</i>									
Below 34th St. (51)	9.8	7.8	3.9	1.3	(0.30)	2.5	(0.05)	2	(0.00)
34th St. - 72nd St. (46)	13	17.4	13	0.8	(0.74)	1	(0.42)	1.3	(0.14)
Above 72nd St. (7)	0	0	0	-	-	-	-	-	-
Other (62)	29	21	21	1.4	(0.08)	1.4	(0.09)	1	(0.46)
<i>Race of first tester</i>									
White (53)	20.8	18.9	13.2	1.1	(0.34)	1.6	(0.13)	1.4	(0.15)
Black (59)	18.6	15.3	15.3	1.2	(0.20)	1.2	(0.15)	1	(0.39)
Latino (52)	11.5	11.5	11.5	1	(0.44)	1	(0.42)	1	(0.41)
<i>Type of positive response^d</i>									
Callback (169)	11.2	9.5	5.3	1.2	(0.23)	2.1	(0.01)	1.8	(0.02)
Job offer (169)	5.9	6.5	7.7	0.9	(0.58)	0.8	(0.77)	0.8	(0.65)
<i>Personal Contact^e</i>									
No personal contact (75) ^f	8	8	4	1	(0.45)	2	(0.09)	2	(0.04)
Personal contact (39)	35.9	28.2	30.8	1.3	(0.12)	1.2	(0.24)	0.9	(0.58)

^aNumbers in parentheses are bootstrap p-values for a one-sided test of whether the ratio is less than or equal to one.

^bChanges over time capture several possible effects: learning or adaptation by testers, compositional changes in the types of employers brought into the sample at different points, and changes in the business cycle.

^cStreet addresses are for Manhattan.

^dBecause some testers received both a job offer and a subsequent callback, the sum of these two columns may be greater than the total listed above (in which a positive response is calculated by the presence of a callback *or* job offer)

^eAnalyses of “personal contact” include only those cases in which all tester partners experienced personal contact; those in the “no personal contact” analyses include those cases in which none of the tester partners experienced personal contact. This exclusion avoids any confounding effect of employers’ racial preferences as reflected in the decision to interview.

^fBecause the response rate for blacks in this subsample is zero, ratios in which blacks are in the denominator are undefined. For the purposes of this analysis, we represent this ratio as greater than the value of the numerator over one.

Appendix B. Results by Tester Teams

In the course of fielding two three-person teams of testers we used ten different testers: two Latinos, four African Americans, and four whites. In each three-person team consisting of a white, black, and Latino, the ten testers were combined into 6 different unique combinations. Before pooling the data across combinations of testers, Heckman and Seigelman (1993) recommend testing for the homogeneity of responses across combinations. The columns below represent mutually exclusive outcomes; overall response rates by race can be calculated by summing all columns in which a given race group is represented. A chi-square test within each team fails to reject the null hypothesis of homogeneity across combinations. With this evidence of homogeneity, we report treatment effects pooled across testers. Table B reports the detailed experimental results for each unique combination of testers.

Table B. Detailed Experimental Results, by Unique Combination of Testers^a

Group	Who Gets a Positive Response (%):								
	All	None	W + L	W + B	L + B	W	L	B	N
<i>White without criminal record (Posterior predictive probability of χ^2 statistic: 0.054)^b</i>									
1	11	69.2	4.4	3.3	0	7.7	4.4	0	91
2	7.5	67.9	11.3	0	0	9.4	3.8	0	53
3	36.4	18.2	0	0	0	18.2	18.2	9.1	11
4	33.3	33.3	33.3	0	0	0	0	0	6
5	28.6	57.1	14.3	0	0	0	0	0	7
6	0	66.7	0	0	0	33.3	0	0	3
Total	12.9	63.7	7.6	1.8	0	8.8	4.7	0.6	171
<i>White with criminal record (Posterior predictive probability of χ^2 statistic: 0.588)</i>									
1	3.7	75.3	2.5	2.5	1.2	7.4	4.9	2.5	81
2	4.9	56.1	2.4	2.4	7.3	14.6	7.3	4.9	41
3	2.8	77.8	8.3	2.8	2.8	2.8	0	2.8	36
4	0	60	0	0	20	0	20	0	5
5	0	75	0	0	0	0	0	25	4
6	0	100	0	0	0	0	0	0	2
Total	3.6	71	3.6	2.4	3.6	7.7	4.7	3.6	169

Note: W = white; L = Latino; B = black

^aColumns of “Who Gets a Positive Response” represent mutually exclusive categories (i.e., rows sum to 100%). Note that in the first experiment (no criminal record), there was only a single case (group 3) in which a black tester received a callback when neither of his test partners received one.

^bThe chi-square test is undefined with marginal counts of zero. We calculate a posterior predictive p-value by simulating counts under independence for nonzero cells.

References

- Agresti, Alan. 1990. *Categorical Data Analysis*. New York, NY: Wiley.
- Aigner, Dennis J., and Glen G. Cain. 1977. "Statistical theories of discrimination in labor market." *Industrial and Labor Relations Review* 30:749-776.
- Altonji, Joseph G., and Charles R. Pierret. 2001. "Employer learning and statistical discrimination." *Journal of Economics* 116: 313-50.
- Becker, Gary S. 1957. *The Economics of Discrimination*. Chicago, IL: University of Chicago Press.
- Bendick, Marc, Jr., Charles Jackson, and Victor Reinoso. 1994. "Measuring Employment Discrimination through Controlled Experiments." *Review of Black Political Economy* 23: 25-48.
- Bendick, Marc, Jr., Charles Jackson, Victor Reinoso, and Laura Hodges. 1991. "Discrimination against Latino Job Applicants: A Controlled Experiment." *Human Resource Management* 30: 469-84.
- Bertrand, Marianne and Sendhil Mullainathan. 2004. "Are Emily and Greg More Employable than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination." *American Economic Review* 94:991–1013.
- Biernat, Monica and Diane D. Kobrynowicz. 1997. "Gender and race-based standards of competence: lower minimum standards but higher ability standards for devalued groups." *Journal of Personality and Social Psychology* 72: 544-557.
- Bodenhausen, Galen. 1988. "Stereotypic biases in social decision making and memory: Testing Process models of stereotype use." *Journal of Personality and Social Psychology* 55 (5): 726–737.
- Cancio, A. Silvia, T. David Evans, and David J. Maume. 1996. "Reconsidering the Declining Significance of Race: Racial Differences in Early Career Wages." *American Sociological Review* 61:541-56.
- Cross, Harry, Genevieve Kenney, Jane Mell, and Wendy Zimmerman. 1990. *Employer Hiring Practices: Differential Treatment of Hispanic and Anglo Job Seekers*. Washington, DC: Urban Institute Press.
- Darity, William Jr. and Patrick A. Mason. 1998. "Evidence on Discrimination in Employment: Codes of Color, Codes of Gender." *The Journal of Economic Perspectives* 12: 63-90.

- Darity, William Jr. and Samuel L. Meyers. 1998. *Persistent Disparity: Race and Economic Inequality in the United States Since 1945*. Cheltenham, UK: Edward Elgar.
- Darley, J.M. and P.H. Gross. 1983. "A Hypothesis-Confirming bias in labeling effects." *Journal of Personality and Social Psychology* 44:20-33.
- Dobbin, Frank, J. Sutton, J. Meyer, and W.R. Scott. 1993. "Equal Opportunity Law and the Construction of Internal Labor Markets." *American Journal of Sociology* 99:396-427.
- Dovidio, John F., and Samuel L. Gaertner. 2000. "Aversive racism and selection decisions." *Psychological Science* 11:315-319.
- Elliott, J.R. 2000. "Class, Race, and Job Matching in Contemporary Urban Labor Markets." *Social Science Quarterly* 81:1036-1052.
- Farkas, George. and K. Vicknair. 1996. "Appropriate Tests of Racial Wage Discrimination Require Controls for Cognitive Skill: Comment on Cancio, Evans, and Maume." *American Sociological Review* 61:557-60.
- Fix, Michael, and Raymond J. Struyk, eds. 1993. *Clear and convincing evidence: Measurement of discrimination in America*. Washington, DC: Urban Institute Press.
- Fiske, Susan. 1998. "Stereotyping, prejudice, and discrimination." Pp. 357-411 in *The handbook of social psychology*, edited by Daniel Gilbert, Susan Fiske, and Gardner Lindzey. Boston: McGraw Hill.
- Fryer, Ronald G. Jr., and Steven D. Levitt. 2003. "The causes and consequences of distinctively black names." NBER Working Paper 9938.
- Fryer, Ronald G. Jr., and Steven D. Levitt. 2004. "The causes and consequences of distinctively black names." *The Quarterly Journal of Economics* 119 767-805.
- Ghosh, Malay, Ming-Hui Chen, Atalanta Ghosh, and Alan Agresti. 2000. "Hierarchical Bayesian Analysis of Binary Matched Pairs Data." *Statistica Sinica* 10:647-57.
- Gottschalck, Alfred O. 2003. "Dynamics of Economic Well-Being: Spells of Unemployment, 1996-1999." Current Population Reports. Washington, DC: US Census Bureau.
- Heckman, James J. 1998. "Detecting discrimination." *The Journal of Economic Perspectives* 12:101-116.
- Heckman, James and Peter Siegelman. 1993. "The Urban Institute Audit Studies: Their Methods and Findings." Pp. 187-258 in *Clear and Convincing Evidence: Measurement of Discrimination in America*, edited by Michael Fix and Raymond Struyk. Lanham, MD: University Press of America.

- Holzer, Harry J. 1987. "Informal job search and black youth unemployment." *American Economic Review* 77:446-452.
- Holzer, Harry J. 1996. *What Employers Want: Job Prospects of Less-Educated Workers*. New York: Russell Sage Foundation.
- Holzer, Harry J. and Paul Offner. 2001. "Trends in Employment Outcomes of Young Black Men." Unpublished manuscript. Washington DC: Georgetown University.
- Johnson, William and Derek Neal. 1998. "Black-White Test Score Differences and Black-White Earnings Differences." in C. Jencks and M. Phillips (eds). *Black-White Test Score Differences*. Washington, DC: Brookings Institution.
- Kirschenman, Joleen and Katherine Neckerman. 1991. "'We'd Love to Hire Them, but...': The Meaning of Race for Employers." Pp. 203-234 in *The Urban Underclass*, edited by Christopher Jencks and P. Peterson. Washington, D.C.: Brookings Institute.
- Moss, Philip and Chris Tilly. 2001. *Stories Employers Tell: Race, Skill, and Hiring in America*. New York: Russell Sage.
- Neal, Derek, and William Johnson. 1996. "The Role of Premarket Factors in Black-White Wage Differences." *Journal of Political Economy* 104:869-895.
- Oettinger, Gerald S. 1996. "Statistical Discrimination and the Early Career Evolution of the Black-White Wage Gap." *Journal of Labor Economics* 14: 52-78
- O'Neill, June. 1990. "The Role of Human Capital in Earnings Differences between White and Black Men." *Journal of Economic Perspectives* 4.
- Pager, Devah. 2003. "The Mark of a Criminal Record." *American Journal of Sociology* 108: 937-975.
- Pager, Devah and Lincoln Quillian. 2005. "Walking the Talk: What Employers Say Versus What They Do." *American Sociological Review* 70(3):355-380.
- Pager, Devah. 2007a. "The Use of Field Experiments for Studies of Employment Discrimination: Contributions, Critiques, and Directions for the Future," *Annals of the American Academy of Political and Social Sciences* 609: 104-133.
- Pager, Devah. 2007b. *Marked: Race, Crime, and Finding Work in an Era of Mass Incarceration*. University of Chicago Press.
- Petersen, Trond, Ishak Saporta, and Marc-David L. Seidel. 2000. "Offering a Job: Meritocracy and Social Networks." *American Journal of Sociology* 106:763-816.

- Pettit, Becky and Bruce Western. 2004. "Mass Imprisonment and the Life Course: Race and Class Inequality in U.S. Incarceration." *American Sociological Review* 59:151-169.
- Roscigno, Vincent J., Lisette Garcia, Sherry Mong, and Reginald Byron. 2007. "Racial Discrimination at Work: Its Occurrence, Dimensions, and Consequences." *The New Black: Alternative Paradigms and Strategies for the 21st Century Research in Race and Ethnic Relations* 14:131-155.
- Steele, Claude M. and Aronson, Joshua. 1995. "Stereotype threat and the intellectual test performance of African Americans." *Journal of Personality and Social Psychology* 69 (5): 797-811.
- Tomaskovic-Devey, Donald, Melvin Thomas and Kecia Johnson. 2005. "Race and the Accumulation of Human Capital across the Career: A Theoretical Model and Fixed-Effects Application," *American Journal of Sociology* 111 (1): 58-89.
- Trope, Yaacov, and Erik P. Thomson. 1997. Looking for truth in all the wrong places? Asymmetric search of individuating information about stereotyped group members. *Journal of Personality and Social Psychology* 73 (2): 229–241.
- Turner, Margery, Michael Fix, and Raymond Struyk. 1991. *Opportunities Denied, Opportunities Diminished: Racial Discrimination in Hiring*. Washington, DC: Urban Institute Press.
- Yarkin, K.L., J.P. Town, and B.S. Wallston. 1982. "Blacks and Women Must Try Harder: Stimulus Person's Race and Sex Attributions of Causality." *Personality and Social Psychology Bulletin* 8: 21-24.
- Waldinger, Roger and Michael I. Lichter. 2003. *How the Other Half Works: Immigration and the Social Organization of Labor*. Berkeley, CA: University of California Press.
- Western, Bruce and Becky Pettit. 2005. "Black-White Wage Inequality, Employment Rates, and Incarceration." *American Journal of Sociology* 111:553–578.
- Whatley, Warren C. 1990. "Getting a Foot in the Door: 'Learning,' State Dependence, and the Racial Integration of Firms." *The Journal of Economic History* 50(1):43-66.
- Wilson, William Julius. 1996. *When Work Disappears: The World of the New Urban Poor*. New York: Vintage Books.
- Yinger J. 1995. *Closed Doors, Opportunities Lost: The Continuing Costs of Housing Discrimination*. New York: Russell Sage