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The Intersection of Race/Ethnicity and Gender in Occupational Segregation

Changes over Time in the Contemporary United States

Abstract: *In this article, we examine changes in the types of occupations that members of various racial/ethnic-gender groups have entered. We are interested in two trends that we believe may have contributed to differences in occupational concentration: budget reductions and policy changes in Equal Employment Opportunity Commission (EEOC) enforcement procedures, and the continuing increases in women's educational attainment. Using whites, African Americans, and Hispanics in our analysis, we evaluate race and ethnic differences by gender, and gender differences by race and ethnicity; thus, we pay particular attention to the intersection of race/ethnicity and gender in these processes. Our results suggest that white men have maintained their advantage in the occupational hierarchy in the period under investigation, and that white women have made more progress than any other group. For women,*

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educational investment reaps rewards, although these benefits continue to be unequal. At the same time, the rewards accruing to white men, above and beyond the additive effects of their race and gender, have not changed over time; white women's progress has not intruded on this. Instead, white women's progress is a result of changes in two additive effects: the cost of being female has declined over time and the white advantage has increased. To the extent that changes in EEOC policies have had a negative impact on occupational desegregation, the impact is racialized but not gendered.

Occupational gender segregation in the United States has been extensively studied and researchers have recently turned their attention to occupational race and ethnic segregation as well. Kaufman (2002), for example, found that almost one-third of black or white workers would have to change occupations to achieve full integration, while Reskin, McBrier, and Kmec (1999) noted that, proportionately, minorities were substantially underrepresented in over half the establishments studied by Kalleberg et al. (1996).[1] Moreover, Tomaskovic-Devey et al. (2006) and Tomaskovic-Devey and Stainback (2007) demonstrated that workplace desegregation for blacks and Hispanics in 2002 remained at 1980 levels.

Available research, though scanty, has also found occupational race and ethnic segregation within genders and occupational gender segregation within races and ethnicities. Reskin and Cassirer (1996) and Catanzarite (2003), for example, found much racial and/or ethnic segregation among female workers, demonstrating that the widely used measure, percentage of women, masks very important racial and ethnic differences (Catanzarite 2003). Finally, Jacobs and Blair-Loy (1996) found high levels of gender segregation among African Americans. Although these findings suggest that race, ethnicity, and gender can interact in complex ways, we know very little about how they intersect within the occupational structure.

We do know, however, that both occupational race/ethnic and gender segregation are consequential. A number of studies have documented their effect on authority hierarchies (Elliot and Smith 2004; Kluegel 1978; McGuire and Reskin 1993; Smith and Elliot 2002), and occupational gender segregation has consistently been found to affect wages (Cohen and Huffman 2003; Cotter, Hermsen, and Vanneman 1999; England 1992; Huffman and Velasco 1997; Reskin and Roos 1990). Research has also demonstrated that it contributes to gender inequality in a variety of countries (Aisenbrey and Bruckner 2008; Evertsson et al. 2009; Grusky et al. 2010; Occhionera and Nocenzi 2009; Semyonov and Herring 2007; Smyth and Steinmetz 2008).

Although evidence is mixed on whether occupational race/ethnic segregation

is a major cause of wage inequality, a body of evidence is accumulating to suggest that, indeed, it is (Browne et al. 2001; Catanzarite 1998, 2002, 2003; King 1992; Kmec 2003; Reskin 1999; Tomaskovic-Devey 1993). Very little work, however, has examined the characteristics of occupations associated with race/ethnic and gender segregation, and even less work has looked at changes in this over time.

In this article we examine changes in the types of occupations that members of various racial/ethnic-gender groups have entered. Since research has shown that the forces generating inequality vary by both race and ethnicity (Browne 1999; Elliott and Smith 2004), we include whites, blacks, and Hispanics in our analysis.[2] We are interested in two particular trends that we believe may have contributed to changes in occupational concentration. First, recent research suggests that policy changes and budget reductions in the Equal Employment Opportunity Commission (EEOC) may have limited the agency's ability to monitor employment practices (Stainback, Robinson, and Tomaskovic-Devey 2005), and we wonder whether this may have had an impact on the types of occupations that underrepresented groups have entered. Second, white and minority women have surpassed their male counterparts in educational attainment (DiPrete and Buchmann 2006), and we are interested in whether these increases in human capital investments are reflected in changes in the nature of occupational attainment within and between races and ethnicities. We pay particular attention to the intersection of race/ethnicity and gender in these processes.

We use occupational characteristics to measure occupational type and we ask, for example, whether white women have entered occupations requiring high levels of education more often than either white men or black or Hispanic women. In doing so, we extend our understanding of occupational segregation by analyzing the relationship between specific characteristics of occupations and group attainment. We also contribute to the literature on intersectionality by examining the overlap of race/ethnicity and gender as dimensions differentiating groups. In these ways, we contribute to the larger project of understanding the ways that gender and race/ethnicity combine in producing systems of inequality.

Using data taken from Current Population Surveys, we begin by examining changes over time in indexes of dissimilarity. Next, with occupational characteristics as dependent variables, we use analysis of variance to examine differences in the types of detailed occupations that each group has entered in recent years. We are interested in comparisons dating back to about 1980, thus capturing a time period within which we would expect the effects of changes in EEOC enforcement to have been felt. Available data allow us to come close

to that starting point: we examine changes between 1983 and 2002, the longest recent period with reconcilable occupational classification schemes.

We believe that occupational-level data are the best choice for this type of analysis. Although much evidence suggests that such data underestimate the degree of segregation in individual establishments (Bielby and Baron 1984; Huffman and Velasco 1997; Petersen and Morgan 1995; Tomaskovic-Devey 1993, 1994), national and firm-level analyses have been found to generate similar patterns (Tomaskovic-Devey and Skaggs 2002). Since information on detailed occupational categories are not available for individual firms, we can examine trends over time with much more detailed units of analysis using occupational-level data. Thus, they are appropriate for the type of investigation that we are undertaking.

Intersectionality

Theories of intersectionality stress that race and gender are not merely additive, but represent independent, interactive, systems of control (King 1989), and researchers have begun to incorporate this insight into their study designs. England, Christopher, and Reid (1999), for example, ask whether the factors explaining pay differences across ethnic groups are the same for men and women, and whether the factors explaining differences between men and women are the same across ethnic groups. Cotter, Hermsen, and Vanneman (1999) examine the degree to which race and gender both structure earnings inequality, as well as the effects of occupational segregation for men and women in four racial/ethnic groups. Other work has found that inequality processes affect racial, ethnic, and gender groups differently (Dickerson et al. 2010; Mintz and Krymkowski 2010). McCall (2005) found that patterns of race, gender, and class inequality differed by place and economic circumstance, demonstrating that the sources and structures of inequality are multiple and potentially conflicting.

Browne and Misra (2003) point out, however, that few studies of labor markets have used intersectionality in these ways. They argue that specifying the conditions under which the intersection of race and gender condition labor-market outcomes is important to countering neoclassical economic theory, which sees race and gender-based inequality as naturally occurring. Moreover, McCall (2005) demonstrates that the labor force is an effective location for examining intersectionality, since it allows us to look at inequality among multiple social groups empirically. Following these leads, we pay particular attention to the ways that changes in occupational concentration differ by race/ethnicity and gender and how the two systems might interact.

Occupational Race and Gender Segregation: Theoretical Perspectives

Although the relationship between race/ethnicity and gender in occupational segregation has not been extensively studied, the literature on occupational gender segregation is very well-developed. When considered in conjunction with research on both occupational race segregation and wage inequality, it provides a strong foundation for thinking about the question of segregation more broadly. Here we draw on these literatures to identify relevant organizational characteristics to examine.

Research in these areas has used both the economic and organizational factors of demand-side approaches (Bielby and Baron 1986; McCall 2001a, 2001b; Tomaskovic-Devey 1993), and the worker characteristics (Okamato and England 1999) and labor pool composition (Bygren and Kumlin 2005; Krymkowski and Mintz 2008) of supply-side models to identify characteristics that explain labor force participation. Following this, we use both demand- and supply-side theories to examine the details of occupational race/ethnicity and gender segregation. As Tomaskovic-Devey and Skaggs (2002) note, however, the two types of theories are not mutually exclusive, but may provide complementary explanations of the processes at work.

Theories of Discrimination and Public Policy: The Role of the EEOC

Recent research on occupational stratification has begun to examine the role of the state in decreasing inequality, and this work has found that public policies can have important implications for labor force participation, both on the national (Western and Pettit 2005) and international levels (Pettit and Hook 2005). Many have speculated, for example, that federal policies banning segregation in the workplace have played an important role in countering the discrimination that contributed to occupational segregation (Reskin 1993), and empirical research has found that laws flowing from the Civil Rights Act of 1964 have, indeed, had positive effects on the employment outcomes of white women and people of color (DiPrete and Grusky 1990; Stainback, Robinson, and Tomaskovic-Devey 2005).

Here we are interested in the effect of state action on occupational attainment, and we focus on changes over time at the EEOC. Stainback, Robinson, and Tomaskovic-Devey (2005) report that the decade of the 1980s saw drastic changes at the EEOC, including reductions in both budgets and enforcement capacities; it also saw a gradual slowdown in occupational desegregation, at least for African Americans. Others have found an increase in the wage

gap between whites and blacks among federal employees around this period (Zipp 1994) and stalled progress in wage equality between white and minority women (Browne and Kennelly 1999).

While the next decade brought the Civil Rights Act of 1991, EEOC attention shifted from race/sex complaints to age and disability issues, and the positive rhetoric of the time period was not accompanied by any increase in resources (Stainback, Robinson, and Tomaskovic-Devey 2005). Browne and Askew (2005) found that the 1990s brought a widening wage gap between white women and women of color, and Percheski (2008) and Cohen, Huffman, and Knauer (2009) found a marked decrease in women's entry into managerial occupations.

These results are consistent with Stainback, Robinson, and Tomaskovic-Devey's (2005) conclusion that political eras are consequential (see also Kalev and Dobbin 2006). Indeed, they argue, regulatory shifts slowed and eventually stopped racial integration. Moreover, underresourcing may help to explain why in the first decade of the twenty-first century, few workers who filed formal complaints received a remedy (Hirsh 2008) and why legal intervention was not particularly effective in generating occupational race desegregation (Hirsh 2009). Note, however, that research is not completely consistent on this: Skaggs (2008, 2009) found that in the supermarket industry, at least, legal action leads to an increased number of African Americans in management, which suggests that additional research is necessary to understand the role of government enforcement policies on workplace equality.

We are interested in the relationship between state action and occupational attainment, particularly in whether modifications in EEOC enforcement practices might have contributed to changes in occupational composition over past two decades. Prior work suggests that statistical discrimination and social closure theorize discrimination in ways that are useful in thinking about occupational segregation (Bielby and Baron 1986; England 1992; Fernandez and Sosa 2005; Kaufman 2002; Tomaskovic-Devey 1993; Tomaskovic-Devey and Skaggs 2002). We use these theories as vehicles for examining changes in occupational composition. We ask if the extant trends are consistent with speculation about increasing discrimination flowing from regulatory change.

Statistical discrimination argues that employers use real or perceived differences between groups of workers to evaluate the potential of individual job applicants. In this way, hiring discrimination may be a rational response of employers striving to maximize profits in the face of real or imagined differences among workers. Tomaskovic-Devey and Skaggs (1999) note that a weak version of this model assumes that stereotypes and beliefs about productivity may be more important than any reality, especially in conjunction with the

persistence of preconceived notions based on race (Pager and Quillian 2005) and gender (Reskin and Roos 1990).

Variables drawn from statistical discrimination have helped us to understand the processes that generate occupational segregation. Training demands are particularly relevant, given employers' reluctance to invest in workers who might be undependable or transient (Bielby and Baron 1986; Kaufman 1986; Tomaskovic-Devey and Skaggs 2002). This includes women, who may be thought unreliable, given possible family responsibilities (Correll, Benard, and Paik 2007; Ridgeway and Correll 2004; Trappe and Rosenfeld 2004) and blacks, who are sometimes stereotyped by whites as less dependable than their white counterparts and less hardworking than either whites or Hispanics (Fox 2004).

Race and gender intersect in this process, suggesting that gender prejudices are racialized (Smith and Elliott 2005). Browne and Kennelly (1999), for example, found that although employers in Atlanta believed that women's family demands made them unreliable workers, their stereotype about African-American women as single mothers was particularly stigmatizing.

Generalizing from these findings, we suspect that white men will enter occupations with high, job-specific, training requirements more often than any other group; that white women will do so more often than other women, black women especially; that African-American and Hispanic men will do so more often than their female counterparts; and that Hispanic men and women will do so more than African Americans.[3]

Statistical discrimination may also provide a framework for understanding the relationship between other stereotypes and hiring outcomes, and here we are interested in their role in the gendered nature of skilled manual occupations. Previous research has found empirical support for the salience of stereotyping in occupational gender segregation. Reskin and Roos (1990), for example, suggest that hiring is influenced by employers' notions of gender-appropriate work, and Bielby and Baron (1986) point out that many employers expect men to excel in mechanical ability and women to do well at clerical work. Charles and Grusky (2004) found that occupational gender segregation remains pervasive in the manual sector and suggest that the stereotypically male characteristics embodied in these types of occupations may help to explain why this is so.[4]

Thus, given the types of male-stereotyped skill requirements associated with manual work, we assume that men will enter these occupations more often than women. Drawing on the race-based stereotypes discussed above, we again anticipate that white men will do so more often than other men, black men especially, and that Hispanic men will do so more often than African-American men. We draw from other literature that describes the stereotype

of the "strong" black woman (Beauboeuf-Lafontant 2005), and, considering this in conjunction with Baunach and Barnes's (2003) point that black women are more likely than white women to be stereotyped about skills, we assume that black women will enter these occupations more often than their white or Latina counterparts.

A second theory of discrimination, social closure, assumes that discrimination is a vehicle for maintaining advantage, and that status groups attempt to maximize the opportunities and advantages of group members. Thus, dominant groups, white and male workers for our purposes, are thought to work actively to preserve their positions in the labor force by trying to exclude others (Tomaskovic-Devey 1993).[5] One of the limitations of the theory, however, is that it has not identified the processes through which this occurs, but harassment is part of many workers' experiences. As Reskin (1993) points out, men's exclusionary behavior can dissuade women from entering an occupation and men can actively sabotage women's work. Moreover, employers may be complicit in this process (Reskin and Roos 1990). Recent work has also documented the racial component of perceptions about workplace abuse: 37 percent of workers of color versus 10 percent of white workers reported experiencing on the job discrimination. Black workers reported the highest numbers at 44 percent (Krieger et al. 2006).

We do not have information on either hiring decisions or exclusionary practices, but Tomaskovic-Devey (1993) suggests that behaviors designed to exclude women and minority men are particularly forceful in better jobs. He found that as job desirability increases, the percentage of women or African-American men decreases, and, in the most desirable jobs, gender segregation is greater than race segregation. Drawing on these findings, we assume that with the relaxation of EEOC policy enforcement discussed above, men will have entered "desirable" occupations more often than women, and that whites will have done so more often than nonwhites. We use data on earnings and authority as measures of occupational attractiveness.

Tomaskovic-Devey (1993) points out that social closure is an active strategy, and that the ability and desire to exclude subordinated groups vary with organizational and cultural structures. A number of studies have identified organizational formalization as one such structure, arguing that formal rules and procedures maximize meritocratic hiring practices (Petersen and Saporta 2004; Reskin, McBrier, and Kmec 1999). This literature typically uses organizational size and public sector location as indicators of formalization, and research suggests that racial equality appears to be more pronounced in these settings (Smith 2002). Results on organizational size, though, have not been consistent. Some studies using size as a measure failed to find it useful in explaining either race or gender segregation (Kaufman 2002) while

others found that it was positively related to both occupational gender (Bielby and Baron 1986; Bygren and Kumlin 2005) and race segregation (Kaufman 1986). Given the theoretical importance of formalization in an era of declining EEOC enforcement practices, we believe that organization size warrants further investigation and, hence, include it in our analysis.

Findings on the role of public-sector location have proved more useful. McGuire and Reskin (1993) point out that government employment facilitates access to managerial jobs for black and white women and for black men, and Wilson (1997) found that the mechanisms through which blacks and whites attained job authority were more alike in public than private organizations. Similarly, Semyonov and Lewin-Epstein (2009) found racial earnings inequality to be larger in the private sector. We wonder whether formalized procedures are able to counter discrimination in an environment of decreasing scrutiny, and, thus, we ask whether formalized structures minimize tendencies toward social closure. Following the literature, then, we use organizational size (Bygren and Kumlin 2005; Stainback, Robinson, and Tomaskovic-Devey 2005) and public sector employment (Catanzarite 2003) as measures. We expect women to have entered occupations disproportionately located in large organizations or in the public sector more often than men, and minority men and women to do so more than their white counterparts.

Human Capital Theory

Human capital theory, with its roots in neoclassical economics, is well-known in studies of labor market participation. It assumes that individuals invest in skills, be they educational or vocational, with the expectation that these investments will generate attractive returns in job and wage prospects. In the context of occupational segregation, education has been particularly important in thinking about minority men and women, given the educational differences between whites, on the one hand, and blacks and Hispanics, on the other. Here, the question has been fundamental: To what extent do differences in education levels explain occupational outcomes?

A number of studies have found education to be a significant factor in explaining both racial differences in wages (England, Christopher, and Reid 1999; Jacobs and Blair-Loy 1996; Tomaskovic-Devey 1993) and the employment gap between white women, on the one hand, and Hispanic and black women, on the other (England, Garcia-Beaulieu, and Ross 2004). Other work suggests that human capital is particularly salient for Hispanics. England, Christopher, and Reid (1999), for example, found that level of education and cognitive skills accounted for all or most of the wage gap between whites and Latinos, while Browne and Askew (2005) found educational differences to

be pivotal in the widening wage disparity between Latinas and white women. Similarly, Elliott and Smith (2004) found that among higher-status workers, power differences between Latino and white men appear to be the result of educational differences. When African Americans are compared to whites, however, level of education accounted for only about half the wage gap for men and three-quarters for women.

Men and women have been relatively well-matched in educational attainment (Kalleberg and Reskin 1995), and, thus, we should not be surprised that, as Tam (1997) points out, level of education has not accounted for the gendered nature of wage inequality. This has been true for whites and blacks, and for Hispanics who have educational experiences beyond high school (Elmelech and Lu 2003).

In recent years, however, women have made substantial gains in educational attainment and are now more likely than their male counterparts to attend college, graduate, and enroll in postgraduate study (Bae et al. 2000; Reynolds and Burge 2008). Between 1980 and 2000, for example, women increased from 52.3 percent to 56.1 percent of the undergraduate population; 49.9 percent to 57.9 of the graduate school population; and 28.2 percent to 46.6 percent of students in professional schools (Freeman 2004). Moreover, when we examine gender differences by race and ethnicity, we see that both white and Hispanic women's increases in postsecondary enrollments have outpaced their male counterparts (National Center for Educational Statistics 2005). And while white men remain the best-educated group in our study, their proportion of increase in postsecondary completion rates has been less than any group, save Hispanic men. Between 1980 and 2000, the proportion of white men with a bachelor's degree or higher rose from 22.8 percent to 30.8 percent, compared to 14.4 percent to 25.5 percent for white women, 7.7 percent to 16.4 percent for African-American men, 8.1 percent to 16.8 percent for African-American women, 9.2 percent to 10.7 percent for Hispanic men, and 6.2 to 10.6 percent for Hispanic women (U.S. Bureau of the Census 2005).

We are interested in whether these changes in educational attainment contribute to changes in the distribution of relevant groups across occupational types. To address this question, we ask whether increased college graduation rates have led to changes in access to occupations that require high levels of education and to those considered attractive. We define attractive occupations as those high in earnings or authority. Based on changes in the percentage of increase in higher educational completion rates by group between 1980 and 2000, we predict that proportionately, white women will have moved into these types of occupations more often than white men; that African-American and white women have done so more often than Latinas; African-American men

more so than either white or Hispanic men; white men more than Hispanic men; and white women and Latinas more than their male counterparts.

Finally, we include two variables as controls. First, occupational growth consistently has been found to contribute to increases in the share of women in detailed occupational categories, and, although we do not fully understand the process through which this occurs (Reskin 1993), it is probably a result of increased demand for certain types of work. To ensure that our independent variables are not actually tapping this, we include occupational growth in our analysis.[6] Second, students of occupational segregation point out that racial and ethnic group concentration varies by region, and research has either examined local labor markets or included regional measures in national analyses (Catanzarite 2000, 2003; England, Garcia-Beaulieu, and Ross 2004; McCall 2001a, 2001b; Tomaskovic-Devey et al. 2006). Following this lead, we also include region as a control variable.

Data and Methods

Our data come primarily from various March Current Population Surveys, which are joint efforts of the U.S. Census Bureau and the Bureau of Labor Statistics (King et al. 2010). To examine changes in the nature of occupational segregation, we compare the types of occupations women and members of minority groups found themselves in at two different time points: 1983 and 2002. This time frame is attractive for two reasons. First, the occupational classification schemes employed by the Census Bureau during these years (1980 and 1990) are highly compatible. We can thus compute each occupational-level characteristic of interest from a single, common source. Second, this time period seems very well-suited to test our hypotheses about the impact of recent changes in equal-opportunity enforcement and educational attainment.

As much as possible, we construct our occupational data so that it refers to the midpoint of the 1983–2002 period. Therefore, the measures of earnings, education, employment in the public sector, and firm size are aggregated individual-level data from the pooled 1991–94 March Current Population Surveys. For each detailed, three-digit census occupation code, we compute the mean earnings for all workers with earnings, the mean number of years of education, the mean proportion employed in the public sector, and the mean firm size.

For the training and authority variables, we also computed mean values for each detailed, three-digit census occupation code. Information on training comes from a supplement to the January 1991 Current Population Survey. In this survey, respondents were queried about the number of weeks of formal and informal on-the-job training they acquired in their current occupation.

Our measure is the occupational mean of the sum of these two quantities. Data on the authority level of an occupation come from the pooled General Social Survey (1989–2006).[7] Authority level is measured using a three-point scale: 2 denotes someone who supervises but is not supervised; 1 refers to someone who supervises and is supervised; 0 indicates an individual who does not supervise anyone. We utilize a dummy variable at the individual level to measure skilled manual work, denoting all persons who held occupations in the "Precision Production, Craft, and Repair" occupational group as skilled manual workers.

Occupational growth is measured by the ratio of the number of incumbents in a detailed occupation from the pooled 1998–2000 Current Population Surveys to the same number from the pooled 1985–88 Current Population Surveys. We measure region on the individual level and use the nine major census regions: New England, Middle Atlantic, South Atlantic, East North Central, West North Central, East South Central, West South Central, Mountain, and Pacific.

For the measures of authority, earnings, education, public sector, size of firm, and training, we analyze our data by means of an analysis of variance. This technique treats each occupational characteristic as a dependent variable and generates a predicted mean level (and associated standard error) of each characteristic by group and time period. Occupational growth and region are entered as covariates. For skilled manual work, we use logistic regression analysis to examine the estimated percentage of each group involved in this type of work by time period, controlling for region. We then compare changes in these characteristics over time across the various groups in order to test our hypotheses.

Findings

Table 1 examines changes in indexes of dissimilarity between 1983 and 2002 by race, ethnicity, and gender. Three things are of note in these statistics. First, the gender differences are much larger than the racial and ethnic differences, indicating that gender remains the major dimension along which occupations segregate. These findings also underscore Jacobs and Blair-Loy's (1996) point that, unlike gender, there are no occupations in which minorities predominate, at least on the national level.

Second, most of the differences between Hispanics and the other groups have increased over time. Presumably, this is a result of the continuing immigration of Hispanics of relatively low socioeconomic status, although Browne and Askew's (2005) findings that wage inequality between white women and Latinas was not driven by educational differences suggests caution with such

Table 1

Indexes of Dissimilarity for Various Ethnic, Race, and Gender Comparisons

Comparison groups	1983	2002
African-American men and Hispanic men	.25	.29
African-American men and white men	.37	.32
Hispanic men and white men	.33	.36
African-American men and African-American women	.60	.52
Hispanic men and Hispanic women	.61	.56
White men and white women	.61	.52
African-American women and Hispanic women	.26	.24
African-American women and white women	.35	.28
Hispanic women and white women	.29	.31

assumptions. Finally, for both African Americans and whites, changes between men and women within racial groupings are larger than within gender, race changes. In the case of the male–female comparison among whites, for example, the index declined by nine percentage points, the largest change in the table. This suggests that although levels of occupational gender segregation are still quite striking, it is here that we find most movement over time. This is consistent with patterns found on the establishment level for firms in the private sector (Tomaskovic-Devey et al. 2006).

Table 2 lists the predicted mean level of each occupational characteristic that we consider, by year, for our six racial/ethnic-gender groups.[8] Looking at the baseline year of 1983, we see well-known aspects of occupational segregation. First, white men were employed in occupations with the highest levels of authority, earnings, and job training. Second, white women were most likely to be found in occupations featuring high levels of education, but their advantage over white men was quite small in comparison to the advantage of whites over minorities. Third, women of all ethnic and racial groups had occupations with higher levels of representation in the public sector than their male counterparts, and they were more likely to work in occupations found in large firms.

Thus, we have some evidence that in our initial period, formalization worked in favor of women and members of minority groups. Finally, women were less likely to do skilled manual work than their male counterparts, and black men were less likely to do so than either white or Hispanic men. In contrast, white women were less likely to do this type of work than minority

Table 2

Predicted Levels of Occupational Characteristics by Ethnicity, Race, and Gender

	White men	White women	Black men	Black women	Hispanic men	Hispanic women
1983						
Authority	.562	.431	.429	.365	.443	.351
Earnings	25,913.450	19,227.506	20,099.619	16,522.781	20,136.489	16,239.075
Education	12.926	13.139	12.187	12.535	12.078	12.416
Proportion in public sector	.122	.168	.143	.180	.103	.141
Skilled manual work	20.694	1.817	15.094	2.104	19.641	3.233
Size of firm	442.079	471.497	457.023	485.964	431.165	464.740
Training	2.598	1.749	1.788	1.523	1.833	1.394
2002						
Authority	.578	.492	.442	.414	.446	.375
Earnings	26,743.351	21,636.556	21,255.889	18,577.245	19,262.511	16,344.992
Education	13.098	13.412	12.527	12.975	12.038	12.510
Proportion in public sector	.128	.188	.155	.198	.103	.142
Skilled manual work	17.652	1.530	12.145	1.302	21.861	2.636
Size of firm	441.743	475.991	469.928	500.653	403.179	457.596
Training	2.638	1.989	2.052	1.884	1.739	1.433

Table 3

Changes in Occupational Means over Time

	White men	White women	Black men	Black women	Hispanic men	Hispanic women
Authority	.017	.061	.013	.049	.003	.025
Earnings	829.901	2,409.050	1,156.270	2,054.464	–873.978	105.917
Education	.171	.273	.339	.440	–.041	.094
Proportion in public sector	.005	.020	.011	.019	.001	.001
Skilled manual work	–2.995	–.282	–2.963	–.803	2.300	–.617
Size of firm	–.337	4.493	12.905	14.690	–27.986	–7.143
Training	.040	.241	.264	.361	–.094	.038

women. These latter findings suggest that ethnic, racial, and gender stereotyping may be operating.

The data in Table 2 for 2002 indicate that many of these patterns have been maintained over time. In Table 3 we present changes in the means of each occupational characteristic that we consider. The values are generally positive, indicating increases over time in higher levels of authority, earnings, education, proportion in the public sector, and training for all groups. Notable exceptions to this include the decline in occupational earnings, educational level, and average firm size of employment among Hispanic men, and the disproportionate decrease for almost all groups in skilled manual occupations.

Tables 4 and 5 present test statistics for the null hypothesis of no intergroup difference in change over time. Given the large number of tests in these tables, we use an alpha level of .01 instead of .05 to minimize the chance of type I error; this means that our critical value is ±2.576 instead of 1.96. These statistics speak most directly to the hypotheses discussed earlier in the article.

The theory of statistical discrimination predicts that employers would be less likely to hire women and minorities if a position requires extensive amounts of on-the-job training, and we speculated that declining EEOC enforcement of standards would encourage this tendency. Tables 4 and 5 indicate that this occurred in only some cases. Although the gender gap has declined over time for all groups, these changes were statistically significant only for whites. Differences between whites and African Americans decreased, but those between Hispanics and other groups increased in magnitude. These findings suggest that changes over time have favored white women and that blacks, but not Hispanics, have made progress when compared to whites.

We have also used changes in participation in skilled manual occupations

Table 4

***T*-Values for Within-Race, Gender Differences in Change**

	Whites	Blacks	Hispanics
Authority	–12.956	–3.988	–2.063
Earnings	–13.679	–2.914	–2.816
Education	–6.928	–2.573	–3.049
Proportion in public sector	–6.168	–1.155	–.083
Skilled manual work	–.294	1.253	2.168
Size of firm	–2.649	–.367	–3.792
Training	–10.107	–1.829	–2.211

Note: Because of the large number of tests in the table, a significance level of .01 (t = 2.576) is used to minimize type I errors.

Table 5

***T*-Values for Within-Gender, Race Differences in Change**

	White–black men	White–Hispanic men	Black–Hispanic men	White–black women	White–Hispanic women	Black–Hispanic women
Authority	.537	1.897	1.035	1.695	4.416	2.456
Earnings	–1.394	7.149	6.432	1.533	8.690	5.710
Education	–5.652	7.006	9.483	–5.691	5.058	7.987
Proportion in public sector	–1.201	.966	1.620	.323	3.280	2.458
Skilled manual work	.717	–5.553	–4.196	1.667	.213	–1.213
Size of firm	–3.581	7.344	8.202	–2.790	2.645	4.051
Training	–5.565	3.263	6.592	–3.026	4.219	5.495

Note: Because of the large number of tests in the table, a significance level of .01 (t = 2.576) is used to minimize type I errors.

as a measure of statistical discrimination. In Table 2 we see that the estimated proportion of most groups in this category has decreased over time. Amid this decrease, however, we were surprised to see that Tables 2 and 5 indicate that Hispanic men moved into these types of occupations more often than men in other groups.[9]

To make sense of these results we examined skilled manual work, asking if there were any changes in the occupation itself that might help us to interpret these findings, and we found that there have been. The number of people employed in this category decreased over time, as did average wages: in 1983 skilled manual workers earned 22.65 percent more than the overall median earnings while in 2002 they earned 11.51 percent less. We interpret this to suggest a classic case of queuing (Reskin and Roos 1990; Thurow 1969): as the occupation became less attractive, we suspect that white men fled and employers turned to alternative labor pools to fill positions. If so, Hispanic men would be a natural choice because of preconceived notions about the quality of their work.

Theories of social closure suggest that members of traditionally advantaged groups work to maintain their superior positions, and this has led us to expect little change over time for women and minorities in their access to "attractive" occupations. Our data suggest that possible social-closure processes have loosened by gender, but not by race. Both black and white women narrowed the authority and earnings gap with their male counterparts; Latinas did so for earnings but not authority. Minorities did not experience similar progress when compared to whites, but African-American men and women showed an earnings advantage over Hispanic men and women in 2002 that did not exist in 1983. We wonder if this latter result is tapping the recent influx of Hispanic immigrants with low levels of education. We also wonder whether the narrowing of authority and earnings gaps for women is due to increases in their educational attainment; we shall return to this issue shortly.

In our discussion of human capital theory, we noted that women and African-American men have invested heavily in education and we assumed that this would be reflected in increases in their participation in occupations with high educational requirements. Tables 4 and 5 suggest that this has occurred. Women in every group entered these occupations more often than men and white women did so most extensively; African-American men and women made progress when compared to their white counterparts. And consistent with our understanding of immigration trends, Hispanics experienced a decline in the educational requirements of the occupations that they entered when compared to other groups.

Previous literature has demonstrated that the benefits of educational investments vary by group, and we are interested in whether the progress women have made in attractive occupations—those characterized by high earnings and authority levels—are the result of moving into occupations requiring high levels of education. To address this question, we controlled for occupational education and recomputed our comparisons.

Table 6a

***T*-Values for Within-Race, Gender Differences in Change, Controlling for Occupational Education**

	Whites	Blacks	Hispanics
Authority	–11.041	–3.199	–.863
Earnings	–12.626	–1.506	–.846
Proportion in public sector	–3.744	–.160	1.204
Size of firm	–.379	.512	–2.940

Table 6b

***T*-Values for Within-Gender, Race Differences in Change, Controlling for Occupational Education**

	White–black men	White–Hispanic men	Black–Hispanic men	White–black women	White–Hispanic women	Black–Hispanic women
Authority	3.188	–1.135	–3.219	4.485	2.526	–.978
Earnings	4.057	2.934	–.787	8.415	7.044	–.234
Proportion in public sector	1.097	–1.921	–2.264	2.769	1.410	–.726
Size of firm	–1.809	5.299	5.344	–.962	1.029	1.492

Note: Because of the large number of tests in the table, a significance level of .01 (t = 2.576) is used to minimize type I errors.

Here the results differ by race. Comparing Table 4 with Table 6a we find that, for whites, controlling for occupational education had little impact on change over time in gender differences in authority and earnings. Among African Americans, however, occupational education explains about one-fourth of the decline in the gender difference for authority, and about half for earnings. It explains even greater proportions of the declines among Hispanics, more than half for authority and about two-thirds for earnings.

In Table 6b we present the results for the racial and ethnic comparisons after controlling for occupational education. Note that the differences between African Americans and whites are larger in Table 6 than in Table 4. This means that African-American increases in access to occupations requiring high levels of education masked a widening in the racial authority and income gaps. That

is, within occupations requiring a given level of education, racial inequality increased between 1982 and 2003. For the comparisons involving Hispanics, we find that occupational education in general explains a sizable portion of the increasing differences in access to attractive occupations between Hispanics and members of the other groups.

Finally, we have argued that formalization is particularly important in an era of declining government enforcement of antidiscrimination legislation, and we have found support for this idea. As Tables 4 and 5 demonstrate, public-sector employment has favored white women compared to white men and minority and Hispanic women compared to white and black women. Large firms, however, have been receptive to a more diverse population: White and Hispanic women increased their representation in large firms compared to their male counterparts, and black men and women have done so compared to whites. Hispanic men, however, suffered a decline over time in employment rates in these large firms.

As Table 6 illustrates, these results, too, are mediated by education. Among whites, we find that about 40 percent of the decline in the gender gap in access to public sector employment is explained by occupational education. And with regard to size of firm, occupational education explains nearly all of the change. For African Americans and Hispanics, the only significant change over time in gender differences had to do with size of firm among Hispanics, and occupational education explains nearly one-quarter of the decline in the gap.

The declines in racial differences in access to public sector jobs and to employment opportunities in large firms are also largely explained by occupational education. This is the case as well with respect to the increasing gaps between Hispanics and members of other groups.

Findings: Intersectionality

We have found that the groups that we are studying have entered different types of occupations. Given our interest in intersectionality, we now ask whether these outcomes are additive, or if they represent interactive systems of control. Examples of interaction include differing effects of gender within racial/ethnic groups and differing effects of race/ethnicity within genders.

We find considerable evidence of intersectionality in our data, but little indication that this has changed over time. For each of our occupational measures, there is a statistically significant interaction between race/ethnicity and gender (tests not shown), the nature of which we can see in Table 2. Examining the predicted means for 1983 and 2002 demonstrates, not surprisingly, that in both years white men were disproportionately employed in occupations

that carried authority, high earnings, and training levels. In fact, our ANOVA models indicate that the multiplicative effect of being a white man *above and beyond* the additive effects of being white and male amounted to .044 authority "points," $271 in earnings, and .477 weeks of training.[10]

We also see the impact of intersectionality when we examine occupations requiring high levels of education: Women in all groups were better represented in these positions than their male counterparts, but the gender gap among whites was smaller than among minorities, suggesting that the benefits of educational investment, when measured in this way, are greater for white than minority men. Moreover, all men did better than women numerically in skilled manual occupations, but being black and male had visible negative consequences, while for women, being Hispanic was a positive. For women in skilled manual work, more generally, race and ethnicity mattered: Black and Hispanic women were more likely to be employed in these occupations than white women, but this was not so for men.

The magnitudes of the interaction effects for employment in the public sector and for firm size, by contrast, were quite small. The only change that we found over time in the consequences of the overlap of race/ethnicity and gender is in occupations that were concentrated in large firms (tests not shown) and, here, we see that the female advantage increased among whites and Hispanics but not among blacks.

Conclusion

In this article, we were interested in whether changes in EEOC enforcement policies and the continuing increases in women's educational attainment might affect occupational segregation patterns. To explore these questions, we examined changes over time in the types of occupations that whites, blacks, and Hispanics have entered. Since we were particularly interested in questions of intersectionality, we examined racial and ethnic differences by gender and gender differences by race and ethnicity.

Our results suggest that white men have maintained their advantage in the occupational hierarchy in the twenty years that we studied, while white women have made more progress than any of the other groups under investigation. This is consistent with Stainback, Robinson, and Tomaskovic-Devey's (2005) finding that EEOC policy changes and budget reductions affected African Americans more than white women.

Although it is difficult to be sure of the role of EEOC enforcement trends on these findings, it is possible that policy changes may be responsible for some of the patterns that we uncovered. While we found little to suggest that changes in EEOC procedures might have facilitated the use of statistical

discrimination by employers as measured by on-the-job training opportunities, we found support for the idea that stereotypes played a role in changing employment trends within skilled manual occupations.

Our findings on movement into attractive occupations are also consistent with a de-emphasis on EEOC enforcement and the possible endurance of social closure processes: after controlling for the educational requirements of an occupation, we found that whites continued to enter attractive occupations more often than minorities, with the gap in most cases *increasing*.

Taken together, we find these results suggestive. The role of the state in creating and maintaining occupational segregation has not been studied in detail and, given our findings that whites have done better in occupational attainment in recent years than other groups, state capacity in this regard is particularly important. This is underscored by our findings indicating that formalization did not result in the types of equalitarian hiring practices that we expected: taking occupational education into account, we found that the public sector particularly privileged white women, while large firms systematically excluded Hispanic men. Thus, in the absence of workplace mechanisms for producing inequality, understanding the potential impact of state policy in labor-force participation remains a very fruitful direction to pursue.

We also found that the continuing increase in the educational attainment of women and African-American men was reflected in the types of occupations that they entered. Both groups moved into occupations that required high levels of education at disproportionate rates. For African-American and Hispanic women, this mobility translated into increased access to occupations with authority and to those that paid relatively well, at least in comparison to their male counterparts. This, however, did not yet bring equality: While we see progress for white women and African-American women, white men still predominated in these positions. Given equal levels of occupational education, whites entered attractive occupations in greater proportion than minorities.

We also see in our results an emerging hierarchy between African Americans and Hispanics, which we think is driven, in large part, by differences in educational attainment. Blacks moved into well-paying occupations, those requiring higher levels of education, characterized by on-the-job training, and located in large firms more often than Hispanics. After controlling for education, most of these differences disappeared, although interestingly, Hispanic men entered occupations that carried authority more often than their black counterparts.

When we examine the intersection of race/ethnicity and gender, however, we see that the differences between African Americans and Hispanics are smaller than between them and white males. This is true for both the gender differences within racial and ethnic grouping and race and ethnic differences within genders. While this in itself is not surprising, we have found that in spite of the gains that

white women have made in the two decades under investigation, the advantage accruing to men who are white, above and beyond the additive effects of their race and gender, has not decreased. Indeed, white women's progress has not intruded on this. Conceptually, this advantage means that white men earn a higher premium for being male than other men, and, simultaneously, earn a higher premium for their whiteness than women. But where does this leave white women?

Our findings demonstrate that white women have made progress on many of the variables that we have considered. Indeed, when we look at job quality as measured by earnings and authority, we found that the gender gap among whites shrank over time. It is important to note, however, that even with this improvement, the gap between men and women remains largest for whites. When we compare white women to their black and Hispanic counterparts, however, we see improvement in their relative position: White women now have the highest levels of occupational earnings and authority.[11] The increased advantage white women enjoy over minorities is the result of the declining additive effect of gender, combined with the increasing additive effect of race (statistical tests not shown). From this we conclude that to the extent that changes in EEOC policy enforcement practices had had a negative impact on occupational desegregation trends, that impact is affects race but not gender. From our findings on intersectionality, then, we conclude that for occupational attainment, at least, race and gender still matter.

Notes

1. For the sake of brevity, we use the term "white" instead of non-Hispanic white or European American.

2. Although we examine Hispanics as one group, recent research has found important differences between groups within the larger category (England, Garcia-Beaulieu, and Ross 2004), suggesting more detailed analysis is a fruitful avenue for future research.

3. We realize that the theories we utilize pertain to individuals while our analysis is at the occupational level. We do not regard this as problematic, however, since associations at the individual level imply associations at the aggregate level.

4. A relevant supply-side argument suggests that women learn gender-appropriate aspirations in the socialization process (Shu and Marini 1998), though empirical support for women's choices as an explanation for occupational gender segregation is mixed (see, e.g., Jacobs 1989; Okamoto and England 1999; Reskin and Roos 1990). We agree with Buchmann and Charles (1995) and Tomaskovic-Devey and Skaggs (2002) that organizational and institutional factors, including the labor process itself, frame the contours within which labor market outcomes are negotiated. Nevertheless, gendered aspirations may play a role in this dynamic and, thus, supply- and demand-side processes may be operating simultaneously.

5. Waldinger (1996) points out that social closure is not a new phenomenon. As immigrants moved up the labor queue, they were replaced by newcomers in what was

often a smooth process. In instances of ethnic competition rather than succession, however, older groups fought to maintain a monopoly on their positions.

6. We do not include occupational growth in the skilled manual equations. This would be redundant because what we are examining there is the actual growth or decline of these types of occupations.

7. In order to maximize sample size, we utilized all survey years in which occupation was coded using the 1980 Census Occupational Classification Scheme.

8. Means and standard deviations for the occupational characteristics can be found in Appendix Table A1.

9. Statistical tests for the skilled manual analysis were performed using the predicted logits and their standard errors, but we present the percentages here for ease of interpretation.

10. These numbers were generated by pooling African Americans and Hispanics.

11. The reader may notice that this change in relative position did not occur when controlling for occupational education (see Table 6). This is because *at any one point in time* educational differences between white women and members of minority groups are so large that they erase the advantage of white women in 2002 (or increase their disadvantage in some cases in 1983). However, when looking at *changes over time* in Table 6, we do see an improvement in the position of white women when compared to members of minority groups (as we also saw in Table 2).

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Appendix Table A1

Means and Standard Deviations

Occupational characteristic	Mean	Std. deviation
Authority	.500	.327
Earnings	22,709.353	11,582.084
Education	13.001	1.465
Proportion in public sector	.149	.222
Size of firm	457.771	170.700
Training	2.171	1.916
Occupational growth	.922	.436

N = 192,088 (listwise).