Issues Concerning Discrimination and Measurements of Discrimination in U.S. Labor Markets

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"Can't we all just get along?" That was the question posed at a press conference by Rodney King in the aftermath of the 1992 Los Angeles riots, which occurred on the eve of the acquittal of several Los Angeles police officers who were videotaped brutalizing him. The answer to this question has been addressed by a Nobel Laureate in economics, W. Arthur Lewis (1985): "Economic (group) equality is a necessary, but not a sufficient condition for racial peace." Therefore, in any society with some degree of intergroup inequality, if members of a particular group are persistently and disproportionately relegated to the lower rungs of that society, intergroup conflict is inevitable. Furthermore, the likelihood of this conflict is heightened if that inequality is the result of a dominant group's subordination of another group's ability to attain human capital, and/or transform its human capital into labor market outcomes. This subordination is referred to as discrimination.

Measuring Discrimination

The previous paragraph described the inevitable conflict that results from discrimination and group inequality, but, empirically, how does one actually measure discrimination? There are obvious problems associated with simply asking an individual if he/she is a victim of discrimination. An individual may experience discrimination and not interpret it as such, or an individual may not experience discrimination but perceive that they were subjected to discrimination. However, misinterpreting degrees of discrimination experienced would not be a problem if there was consistency in the manner that the degrees are misinterpreted, since those interpretations could at least serve as an indicator of its presence.

There are also means of detecting discrimination that are qualitative in nature. Darity and Mason (1998) point out thirteen employment discrimination cases from 1983 to 1997 where the defendants were found guilty with awards ranging from $240,000 to $176 million (one of the thirteen cases was still pending when the article went to press).

A second qualitative study (Kirshenman and Neckerman, 1991) uncovered evidence of statistical discrimination from a series of interviews of sales, customer service, clerical, and low-skilled employers in Chicago and surrounding Cook county. Statis-

tical discrimination occurs when individuals are judged according to the moment structure (mean and variance) of their group's characteristic distribution, rather than their own characteristics.

Although it may be ethically or legally wrong to rely on group distributions of characteristics when evaluating an individual, if the cost of learning individual characteristics relative to the cost of ascribing group distribution characteristics exceed the difference in the return from selecting that individual versus the expected return from selecting an individual on the bases of group characteristics, then statistical discrimination can be economically efficient. However, Darity and Mason (1998, p. 83) point out the unlikelihood of statistical discrimination persisting over time:

> "If average group differences are perceived but not real, then employers should learn that their beliefs are mistaken. If average group differences are real, then in a world with anti-discrimination laws, employers are likely to find methods of predicting the future performance of potential employees with sufficient accuracy that there is no need to use the additional 'signal' of race or gender. It seems implausible that with all the resources that corporations put into hiring decisions, the remaining differentials are due to an inability to come up with a suitable set of questions or qualifications for potential employees."

In the Cook County study, Kirshenman and Neckerman (1991) found that employers used race as an identifier of an individual's class and residential location. Employers equated black and Hispanic with low class, black with Chicago residence, and white with middle class and suburban residence. Also, employers equated being poor and from Chicago with having a low work ethic and deficient skills.[1] The following is an example of how the authors inferred statistical discrimination from one of the employers:

> After explaining that he hired "the best applicant" the owner of the transportation firm added, "Probably what I'm trying to say is we're not social minded. We're not worried about solving the problems of sociology. We can't afford to." But, despite not being worried about the "problems of sociology," employers have become lay social theorists, creating numerous distinctions, among the labor force that then serve as bases for statistical discrimination

[1] I suspect that some of the employers used politically correct terminology like "poor" and "inner-city" to disguise their racist tendencies.

(Kirshenman and Neckerman, 1991, p. 209).

In addition, the authors found that when ranking differences in work ethic by ethnicity, 37 percent ranked blacks last, 1.4 percent ranked Hispanics last, 7.6 percent ranked both blacks and Hispanics last, and 51.4 percent saw no difference or could not categorize the groups in a straightforward manner (no whites were ranked last). However, the 51.4 percent who saw no difference was not an unwavering result – a large portion of these employers qualified their responses by stating that their answers were contingent on group members possessing the same human capital endowments.

The next type of research design, audit studies, provides examples of detecting discrimination that are quantitative in nature. This approach is a case/control experiment that matches virtually identical pairs that vary only in terms of the hypothesized risk-factor for discrimination. The Urban Institute employed pairs of black and white male actors in Chicago and Washington, D.C., and matched pairs of Hispanic white and non-Hispanic white male actors in Chicago and San Diego to test for racial and ethnic labor market discrimination. Their study revealed that black males received rejection notices three times more frequently than their white male counterparts, and that Hispanic white males received three times as many rejections as non-Hispanic white males. The results from this study were published in the appropriately titled book, Clear and Convincing Evidence (Fix, Galster, and Struyk, 1993).

Provided that pairs are properly matched, audit studies offer perhaps the most compelling evidence of discrimination. However, there are legal and ethical issues regarding their use. They are controlled experiments in which the subjects do not have the ability to accept or refuse participation. In addition, the subjects must incur an imposed cost from recruiting applicants, who had no intention of accepting a job offer.

James Heckman (1998) assigns less confidence in the ability of audit studies to measure labor market discrimination. In particular, Heckman offers three main criticisms of the Fix, Galster, and Struyk (1993) audit study: (1) the study did not emphasize a marginal analysis when measuring discrimination, (2) the sampled population was limited to jobs advertised through newspapers, thereby excluding the main avenue of youth employment "…jobs found through networks and friends" (Heckman, 1998, p.104), and (3) matched pairs may have differed with respect to characteristics that were observable to the perspective employers, but unobservable to the study designers.

The first line of criticism arises from Heckman's belief that a distinction should be made between average and marginal discrimination. He argues that:

> "(a) well-designed audit study could uncover many firms that discriminate, while at the same time the marginal effect of discrimination on the wages of employed workers could be zero…(A)udit evidence…is entirely consistent with little or no market discrimination at the margin…There may be evil lurking in the hearts of firms that is never manifest in consummated market transactions" (Heckman, 1998, pp.102-103).

This argument is based on the presumption that economic values are set at the margin and that competitive forces may limit the ability of bigoted employers to extend their will beyond the confines of their particular firms. This argument implicitly assumes that the neoclassical assumptions of a perfectly competitive market are satisfied. There is considerable debate concerning the degree to which competitive conditions are actually satisfied in labor markets. Furthermore, provided that groups have similar productivity, persistent group inequality resulting from labor market discrimination is inconsistent with competitive markets in neoclassical theory.[2] If there exist two groups that are equally qualified, yet an employer chooses to hire members from a dominant group at a higher wage, and/or offer greater opportunities to dominant group members, then there would exist a profit incentive for another firm to employ the cheaper subordinate group's labor at a lower cost. In addition, if unequal wages are offered for the same job, the profit incentive will encourage firms to hire less expensive labor from the subordinate group rather than the more expensive dominant group labor. This demand for subordinate labor will have the tendency to bid up the price of subordinate group labor until group wage inequality is erased. Therefore, if labor market discrimination does actually persist, neoclassical theory is inaccurate unless labor markets are not behaving competitively, where competition is defined by neoclassical theory.

Heckman's second line of criticism states that the main route of youth employment, "jobs found through networks of friends," is under-sampled by the audit focus on jobs advertised through the newspaper (Heckman, 1998, p.103). Although Heckman may not be inclined to agree, this criticism suggests that the Fix, Galster, and Struyk (1993) audit evidence actually underestimates discrimination.

James H. Johnson and Walter Farrell (1998) used data from the Los Angeles component of the Multi City Study of Urban Inequality (MCSUI) and measured the impact of racially/ethnically heterogeneous social network on income. They found a signifi-

[2] This view is put forth by Darity (1997, p.807) in which he states that "(o)rthodoxy denies the persistence of discrimination as a market-based phenomenon."

cant and positive relationship between racially/ethnically heterogeneous social networks for blacks and Hispanics, but not for whites. This result suggests that institutional barriers that limit ethnic/racial social interaction serve as an additional discriminatory labor market mechanism for blacks and Hispanics, but not for whites. Furthermore, since it is more likely for this mechanism to be prevalent in jobs found through networks of friends as opposed to those found through newspaper advertisements, the Fix, Galster, and Struyk (1993) measure of discrimination is likely to be biased downward.

The rest of Heckman's critique is largely based on his characterization that there are productivity-linked employment attribute differences between the matched pairs of actors in audit studies, which are observable to perspective employers but unobservable to the study designers. However, it is not obvious what productivity-linked attributes are observable to employers but not to study designers.

Heckman extends his criticism of uncontrolled attributes arguing that there may be some minimum employment qualification threshold levels and that ethnic/racial groups may be differently distributed around these levels. He points out that most actors regardless of ethnicity/race were not hired. Hence, there may be some minimum qualification threshold, which most actors could not satisfy. Further, even if average unobservable ethnic/racial differences were the same, if both groups on average did not meet the minimum threshold requirement, then the group with the greatest variance of unobservable characteristics would yield more hired actors. Their greater propensity to cluster in the distribution tails would produce more cases that satisfy the minimum employment qualifications. Hence, the discriminatory results from audit studies could be the result of a greater variance of uncontrolled characteristics for the white group.

This is a valid criticism if the white actors did in fact have a greater variance of uncontrolled characteristics. On the other hand if black actors had a greater variance of uncontrolled characteristics, then the audit measures of discrimination could be biased downward. Heckman does not offer any evidence or explanations for a greater variance of uncontrolled characteristics for the white group. Finally, this line of criticism is a moot point if there are no uncontrolled productivity-linked characteristics between the subject pairs (i.e., if the pairs were properly matched at the studies onset).

Thus far, I have discussed direct methods for detecting discrimination, but the most common measures of discrimination are indirect. They are executed by examining group residuals after controlling for all other productivity-related factors. Unfortunately relying on residuals always leaves open the criticism that the differences in the residuals are the product of omitted variables that are productivity-linked. However,

omitted variable arguments potentially can be made against virtually all statistical models. So regardless of whether one is trying to capture discrimination or any other phenomenon, the goal is to specify and estimate a model as completely as possible. Therefore, any omitted variable criticism ought to include an alternative specification with a sound theoretical background.

Assuming a correctly specified model and no demographic inconsistencies in reported information, I know of two ways to measure discrimination indirectly: (1) the dummy variable approach and (2) the Blinder-Oaxaca approach. In the first approach a dichotomous variable indicating group affiliation is included as an explanatory variable, and if after estimating the model, that variable has a significant effect, there is evidence that affiliation with that group as opposed to the reference group leads to an effect on the outcome. The dummy variable approach is the more common of the two methods: however it has a strong potential for bias due to model mis-specification.

This bias occurs when groups of observations within the sample process explanatory variables in a dissimilar manner. So if we assume discrimination exists and that characteristics are processed differently for different groups, then there exists a strong potential for a mis-specified model.

Nevertheless, the problem can be corrected by including interaction terms for a group identifying variable; in this case the ethnic/racial group dummy variable, and all the other explanatory variables. If the significant effect were found for an interaction term, it would imply that the particular characteristic is treated differently. However, the inclusion of too many interaction terms may make a model overly cumbersome, and lead to a substantial loss of degrees of freedom, which is a problem for samples that are not large.

The Blinder-Oaxaca approach (Blinder 1973; Oaxaca 1973) is another way to avoid the potential for a mis-specified model. It involves a decomposition of group inequality into differentials caused by inferior or superior characteristics and differentials caused by inferior or superior rates of return. The first component of the gap is computed by comparing group mean differentials for a given set of coefficients, which is an estimate of inequality from different group characteristics. The second component of the gap is computed by comparing group coefficient differentials for a given set of characteristics, which is an estimate of inequality from different group outcome generating capabilities. The second component is often used as a measure of differential treatment of a given set of endowments, interpretable as discrimination or nepotism (Darity, Guilkey, and Winfrey 1996). Since the coefficients of the groups are not restricted to be the same, there should not be a mis-specification problem due to different group productivity.

The Blinder-Oaxaca decomposition requires two stages. In the first stage, a model predicting the outcome variable is estimated for each of the separate groups to generate group-specific means and coefficients. In addition, in this stage mean and coefficient weights must be produced in order to anchor group comparisons. Note that the product of the mean and coefficient weights should yield some weighted outcome, and that outcome cannot reside outside the range of outcomes generated by the different groups.

In the second stage, the group generated means and coefficients are applied to mean and coefficient weights in order to perform the decomposition. One may determine the difference in the outcome caused by a particular group's inferior or superior characteristics by subtracting the product of the mean and coefficient weights from the product of the particular group's means and the coefficient weights. Here, means are varied and coefficients are held constant. Alternatively, one may determine the difference in the outcome caused by a particular group's ability to process their endowments by subtracting the product of the mean and coefficient weights from the product of the mean weights and the particular group's coefficients. In this case, coefficients are varied and means are held constant.

There are two potential problems with the Blinder-Oaxaca approach (Jones and Kelly, 1984; Oaxaca and Ransom, 1994; Glinskaya and Mroz, n.d.). The first amounts to an index number problem; the choice of weights used to anchor comparisons of group means and coefficients can alter the decomposition results dramatically.

The second potential problem arises from trying to decompose further, by a specific explanatory variable. For example, Jones and Kelly (1984) examined what happens when trying to decompose gender differences in Australian wages by attained education. They formulated two indicators of education, years of schooling and age when left school, and found that the difference between the male and female intercept and the difference between male and female education coefficients changed by 40 percent and 50 percent respectively depending on their choice of education indicator. However, all hope is not lost; the total variation in the sum of all coefficients, intercept included, between male and female wages is independent of which education indicator was used. Hence, conclusions still can be made concerning the total variation in group means and group coefficients.

In addition, Jones and Kelly (1984) show that the inclusion of dichotomous variables requires an arbitrary normalization that will yield intercept and coefficient differentials that are sensitive to the choice of reference group. Furthermore, Glinskaya and Mroz (n.d.) illustrate that, not only will the choice of the omitted category affect the coefficient of the dichotomous variable and the intercept term, but the other explanatory variables also will likely be affected, since they must adjust to the change in the

intercept. However, as in the case of choosing an education proxy, the variation between group coefficients and intercept taken together remain unaffected by any arbitrary normalizations, so conclusions still can be made regarding total group variations in means and coefficients. Therefore, any interpretations of any isolated variable or set of covariate decompositions should be viewed with skepticism.[3]

Arguments Against the Presence of Discrimination in U.S. Wages

Indirect approaches to detect discrimination inherently rely on group residuals to measure discrimination, which also leaves open the criticism that what has been measured is not group treatment differentials, but rather some other group differential phenomena.

There are a group of authors who argue that the current male wage gap has little to do with labor market discrimination, but a lot to do with the structural adjustment of the U.S. economy that led to a movement away from low-skilled jobs towards high-skilled jobs, which in-turn lead to an increase in demand for high-skilled labor and a decrease in demand for low-skilled labor. Moreover, they suggest that black male skills are sufficiently deficient to explain the male wage gap.[4]

These opponents of the "discrimination hypothesis" include June O'Neill (1990), Ronald Ferguson (1994), Nan Maxwell (1994), and Derek Neal and William Johnson (1994). All of these authors support their position using the Armed Forces Qualifying Test (AFQT) which was administered in 1980 on the National Longitudinal Youth Survey (NLSY). The AFQT is a composite score from a series of questions designed by the U.S. military to measure the mathematical and verbal aptitude of potential enlistees. The authors find that wage differentials between black and white adult males effectively disappear when AFQT is included as a human capital control. Thus, they claim the increased disparity in wages is the result of black/white skill differentials rather than discrimination.

[3] Except for the practically impossible case of a model that has one possible indicator of every variable and no dichotomous explanatory variables.

[4] A distinction can be made between pre-labor market discrimination and labor market discrimination. Pre-labor market discrimination is based on unequal treatment in acquiring human capital, while labor market discrimination takes human capital as given and is a measurement of differential treatment of given human capital. When discussing wage discrimination I am generally referring to labor market discrimination. Furthermore, I do not wish to suggest that advocates of the deficient skills hypothesis deny the significance of pre-labor market discrimination.

The debate does not end with the inclusion of AFQT in wage equations. A group of economists has emerged to challenge the use of AFQT as a valid control for school quality. William Rodgers and William Spriggs (1996) argue that AFQT are generated structurally differently for blacks and whites. Thus the use of AFQT as a proxy for skills will not yield unbiased estimates because it is confounded by race. Further, they show that if black characteristics were applied to white AFQT coefficients then wage gap residuals attributed to labor market discrimination would persist.

Darity and Mason (1998) support the claim that the AFQT is generated structurally different by race by pointing out that the test appears to overestimate interracial differences especially when compared to the Scholastic Aptitude Test (SAT) and National Assessment of Educational Progress (NAEP). Furthermore, they point out that there is no consensus concerning what the AFQT actually measures.

In addition, a study by Arthur Goldsmith, Jonathan Veum and William Darity, Jr. (1997) theorizes that psychological variables that measure self-esteem and locus of control should be included as human capital variables. The NLSY contains measures of self-esteem and locus of control. The authors find that the racial wage gap re-emerges with the inclusion of these variables, even when AFQT scores are included.

Other "discrimination hypothesis" critics argue that unexplained wage residuals are the result of inferior or superior culture rather than discrimination or nepotism. For example, Thomas Sowell (1981) believes that slavery and southern sharecropping have instilled negative work ethics that have not disappeared with time. Such traits include a poor sense of personal responsibility, lack of initiative, avoidance of work, irregular attendance, and abuse of tools and equipment, which are all detrimental to productivity.

In response to the "cultural capital hypothesis," Johnson, Bienstock and Stoloff (1995) used data from the Los Angeles component of the Multi-City Study of Urban Inequality (MCSUI) to examine the significance of cultural capital on male unemployment. They find that, when a criminal record indicator and a binary variable indicating dark-skinned blacks are included to predict employment, none of their indicators of cultural capital remain significant. Hence, they show that color, not culture, matters in labor markets.

Darity, Guilkey, and Winfrey (1996) also dispute the claim of culture rather than color. They used the 1990 U.S. Census Public Use Micro-data Sample (PUMS) to perform two Blinder-Oaxaca experiments. In the first experiment they controlled for color and allowed culture to vary by examining three culturally diverse ancestral groups of non-Hispanic blacks by gender: West-Indian, European, and "all other blacks." They speculate that the European black category is disproportionately com-

posed of mixed blacks who identify themselves as being racially black and having European ancestry, while the "all other blacks" category is mainly black descendants of U.S. slaves. West-Indian black is a self-explanatory category. Moreover, within gender they did not find significant differences in treatment of human capital between the three groups.

In the second experiment, they controlled for culture and allowed color to vary. By isolating on Hispanic ancestry, they compared Hispanic non-blacks to Hispanic blacks by gender. Moreover, for both males and females, black Hispanic human capital was more adversely treated than the non-black Hispanic capital. Therefore, this along with the former experiment, is a strong indication that color is of greater importance than culture in labor market treatment in the U.S.

There are other critics of the "discrimination hypotheses," who instead favor a genetic explanation of the wage gap. The main proponents are Hernstein and Murray (1994). Based on AFQT scores, they believe that racial group intelligence follows a bell shaped distribution, and that the black distribution is centered to the left of the white distribution.[5] Furthermore, the difference in racial distributions of intelligence will manifest in wage inequality.

In refutation of an argument that many classify as simply racist, there is an abundance of evidence, stemming from anthropologists, stating that race is a social rather than biological construct (David and Collins, 1991; Lieberman, et al., 1983; Lieberman, et al., 1989; Cooper, et al., 1981). Therefore, if race is not biologically linked, genetics cannot be the driving force of racial inequality.

Additionally, there is a convincing study by Scarr, et al. (1977) that compares the contribution of genetics and color to intelligence. The study was based on a sample of 405 black and white Philadelphia twins aged 10 to 16 years. Blood was drawn from participants to identify markers that predict a subject's degree of African or European ancestry. They also used a spectrophotometer to measure skin shade. Although there was a positive and significant correlation between dark skin shade and African ancestry, there were many light-skinned blacks, and even some whites, who had more African blood markers than their darker-skinned counterparts. Next, they measured the correlation between various intelligence tests and ancestry, and the correlation between those same intelligence tests and skin shade.

[5] As mentioned earlier, there is no consensus about what AFQT actually measures (Darity and Mason 1998).

They found that performance on intelligence tests was not related to African ancestry, but was negatively related to skin shade. Thus, it is not genetics, but rather color that is driving the disparity in performance on intelligence tests. This is suggestive that darker-skinned individuals may receive adverse social treatment, which manifests in their scores, and moreover, that darker-skinned individuals may become socialized to believe that they are inferior, which also may be manifest in their subpar scores.

Discussion and Conclusions

The proceeding was an illustration of some of the issues concerning discrimination and measures of discrimination in U.S. labor markets. In addition, the paper began with a proposition put forth by W. A. Lewis (1985), which indicates that ethnic/racial conflict is inevitable in an environment of ethnic/racial inequality. Given this group inequality, Lewis specifies three approaches towards interracial peace: (1) a homogeneous state, (2) a plural state, and (3) a raceless state. To achieve a homogeneous state the ethnic/racial groups would have to divide the nation's resources and become independent states. Lewis illustrates the difficulty of carrying out a secession: "If partition cannot be effected equitably and without leaving too many people on the wrong side of the border, the racially homogeneous society is not attainable" (Lewis 1985, p. 15).

A plural society is based on the principle of "separate but equal institutions." Although this solution may seem theoretically appealing to some, it is not very practical in use. The best example is the Jim Crow U.S. South, where in 1896 the U.S. Supreme Court upheld the *Plessy v. Ferguson* decision that permitted states to impose racial segregation in schools and other public facilities. The results were separate but not equal institutions. By 1954 the U.S. Supreme Court unanimously reversed their prior decision in the *Brown v. Board of Education* case. Chief Justice Earl Warren stated:

> Separate educational facilities are inherently unequal. Therefore, we hold that the plaintiffs and others similarly situated for whom the actions have been brought are, by reason of segregation complained of, deprived of equal protection of the laws guaranteed by the Fourteenth Amendment (Franklin and Moss 1994, p. 412).

Lewis' third approach to interracial peace on the surface appears to be the most feasible; a raceless society is one where race is removed from public consideration, so that each group is guaranteed equal opportunity and consideration under the law. Lewis points out two problems with this approach. First, equality of opportunity may not necessarily lead to equality of outcomes, thus group disparities may still exist even after guaranteeing equal opportunity and treatment. Second, minority groups

have to be willing to adapt to majority group culture and customs, and risk losing significant elements of their own culture and customs, while the majority group has to be tolerant of the minority group and their cultural and customary differences. In Lewis' words:

> …[T]he raceless society is not feasible unless both majority and minority parties wish to live together on such terms; it also tends to move away from economic equality unless supported by *affirmative action*. The system can be made to work, but this requires continual effort (Lewis 1985, p. 23; *Emphasis added*).

So, if the U.S. has opted for a raceless solution to its ethnic/racial inequality and conflict, then it appears as though continual affirmative action is needed. Furthermore, the case for the use of affirmative action becomes stronger with more evidence that group human capital is treated differently (i.e., discriminatory treatment in labor markets). Hence there is a need for continual compensation for this unequal treatment and ethnic/racial inequality in general, as long as group inequality exists, otherwise the possibility of future ethnic/racial confrontations, similar to the 1992 Los Angeles riots, will continue.

[*] This paper is largely based upon research conducted by the author as part of his Ph.D. Dissertation at the Department of Economics, University of North Carolina at Chapel Hill.

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