ABSTRACT
(JEL Classification Code(s): J 31, J 71)

"*Perceptions of Discrimination, Effort to Obtain Psychological Balance, and Relative Wages: Can We Infer a Happiness Gradient*?"

There is a substantial literature that finds a linkage between happiness and relative economic well being as measured by earnings or wages. There is also a well documented racial gap in wages. One explanation for this is disparate treatment or discrimination. Many black workers report perceiving that they face workplace discrimination in general and with respect to specific events such as hiring and promotion. This paper explores how such workers respond to these feelings, under the assumption that perceived exposure to discrimination cause psychological discomfort that workers seek to eliminate. We identify three alternative strategies for attaining psychological equilibrium when facing discrimination--*waiting*, *shirking*, and *notification*--each of which generates different predictions for intra-racial and inter-racial wage differences. Using data drawn from the *Multi City Study of Urban Inequality*, which contains information on perceptions of discrimination, we derive estimates of the relative wage effects of perceived discrimination to shed light on the which hypotheses is consistent with the data. We find evidence of a wage hierarchy with whites workers who believe they are treated fairly at the top and all other workers falling behind by an equivalent amount. Our evidence suggest that when confronted with hiring discrimination black workers appear to give greater effort to overcome this hurdle, as predicted by the *notification* hypothesis. However, when black workers sense that they face promotion or workplace discrimination, the evidence is consistent with their reducing effort to bring their output level down, and hence in line with their pay level.

A number of questions remain to be explored including; are there systematic differences in the characteristics of those who report believing they face discrimination and those who believe they are treated fairly? does the skin shade of blacks who believe they are subject to discrimination, or the amount of time these individuals have spent with their current employer, influence the strategy they adopt to reach psychological balance?

Arthur H. Goldsmith*
Department of Economics
Washington and Lee University
Lexington, VA 24450
Office: (540) 463-8970
Fax: (540) 463-8639
e-mail: GoldsmithA@wlu.edu

Darrick Hamilton
Milano – The New School of Management and Urban Policy
The New School
72 Fifth Avenue
New York, NY 10011
Office: (212) 229-5400, ext. 1514
Fax: (212) 229-5335
e-mail: hamiltod@newschool.edu

William Darity, Jr.
Department of Economics
University of North Carolina at Chapel Hill
Chapel Hill, NC 27514
Office: (919) 966-2156
Fax: (919) 966-4986
e-mail: darity@unc.edu

"Perceptions of Discrimination, Effort to Obtain Psychological Balance, and Relative Wages: Can We Infer a Happiness Gradient?"

I.   OVERVIEW

There is ample evidence that blacks receive lower wages than whites with comparable characteristics and background (Goldsmith, Hamilton, and Darity 2006a; Couch and Daly 2002; Altonji and Blank (1999), and Darity and Mason 1998). Estimates of the racial wage gap for males typically range between 12-15 percent[1] Social psychologists report that relative income is an important determinant of happiness or well-being. Thus, to the extent that black workers face wage discrimination there is likely to be an associated gap in well-being.

This paper offers, and tests, a theory of how a person's perception that they face workplace discrimination influences their behavior, and hence, their wages. The theory is developed by extending the neoclassical theory of wage determination to incorporate the insights of Festinger's (1957) theory of cognitive dissonance--one of the most innovative and prominent theories of behavior in social psychology. [2]

Our model advances the notion that workers simultaneously derive satisfaction from both the wage they earn and from being in psychological balance which is governed by a perception of "*fair*" treatment. We interpret Festinger as asserting that thoughts or cognitions that do not "fit" together, result in dissonance and that thoughts must be largely consistent for a person to attain psychological balance. In our view, a person who believes they faces wage discrimination is thrust into an unbalanced psychological state since they think they are not treated fairly--the wage they receive falls short falls of their perceived contribution to the revenues of the firm that is governed by their skills and effort. This person can be expected to make cognitive adjustments in an effort reach psychological balance.

---

[1] However, smaller wage differences between black and white workers, on the order of 7 percent, have been reported by Altonji and Blank (1999), and Neal and Johnson(1996) when only premarket controls and the *AFQT* are included as a wage regressor.

[2] Economists previously have used cognitive dissonance theory to explain economic development (Hirschman, 1965), the accumulation of debt (Maital, 1982), job choice over safe and hazardous employment (Akerlof and Dickens, 1982), and labor supply (Goldsmith et. al 2004). Akerlof and Dickens (1982) and Goldsmith et. al (2004) formally merge neoclassical theory and cognitive dissonance theory rather than present cognitive dissonance theory as an alternative explanation for behavior. See Earl (1992) for a review of the literature in which economists make use of cognitive dissonance theory, and Earl and Wicklund (1999) for a brief discussion of rational decision making and cognitive dissonance.

Employers may discriminate by undervaluing the talents of minorities, due to negative stereotypes they hold. If employers learn the error-or-their-ways by observing workers then employees who believe they are discriminated against can simply wait for their employer to adjust their perspective and the wage they pay, leading them to psychological equilibrium. Another approach might be to reduce their effort level so their productivity falls into line with their wage. This strategy will result in a negative relation between wages and perceptions of wage discrimination. Alternatively, workers who believe they are subject to wage discrimination may decide that greater effort will break down negative stereotype beliefs about themselves held by employers. The idea is that this will lead employers to upgrade their evaluation of the worker's productivity and to pay them a higher wage. In this scenario, workers who believes they are subject to wage discrimination will actually earn a higher wage. Thus, the impact on a worker's wage of perceived exposure to wage discrimination is unclear.

A number of studies have attempted to determine if worker self-reports of exposure to workplace discrimination are closely aligned with conventional statistical measures of wage discrimination (Kuhn 1987; Hallock, Hendricks, and Broadbent 1998, Darity, Shapre and Coleman 2006). However, there is a paucity of empirical work attempting to offer an explanation for how perceptions of discrimination might influence wages. Neumark and McLennan (1995) assert that people who believe they face workplace discrimination have less of an incentive to invest in human capital leading to lower wages. Our approach differs from theirs in that we investigate how perceptions of discrimination might influence wages for workers with a given level of skills as they seek psychological equilibrium. Using data drawn from the *Multi City Study of Urban Inequality* (*MCSUI*) we estimate wage equations to shed light on how individuals who believe they face discrimination respond.

This paper is organized as follows. In Section II we present Festinger's theory of cognitive dissonance and integrate this with the conventional neoclassical theory of wage determination,. In addition, we discuss how a perception of wage discrimination may lead to cognitive dissonance that destroys psychological balance. Strategies for restoring psychological balance are identified and their influence on the racial wage gap is determined. Section III documents the frequencies of perceptions of wage discrimination because of race for our subsample of white and black workers drawn from the *MCSUI*. The data are described in this section along with our empirical procedures. In addition, we

present estimates of the influence of perceived wage discrimination on wages. Concluding thoughts are offered in Section IV.

II.   COGNITIVE DISSONANCE AND PSYCHOLOGICAL EQUILIBRIUM

A.   Cognitive Dissonance Theory

Festinger's theory of cognitive dissonance posits a link between attitudes and cognitive processes that may lead to behavioral change.[3] His theory suggests that individuals seek harmony between their cognitions or thoughts. Festinger hypothesized that disharmony makes a person uncomfortable and tense. The discomfort fostered by dissonance motivates cognitive changes designed to restore harmony.

Festinger (1957, 9) defined anything a person perceives to "*know*" about themselves, others, and their environment as a cognitive element. The relation between any two cognitive elements may be dissonant, consonant, or irrelevant. A dissonant relation exists between two cognitive elements when, in the perceiver's mind, they do not seem to "*fit*" together (1957, 13). Festinger proposed that the amount of dissonance associated with any two inconsistent cognitive elements grows with the importance of these elements to the perceiver. He expects the importance of a cognitive element to depend on two factors, the intensity with which an attitude or belief is held and the proximity of the element to the individual's self-perception. Finally, as the magnitude of the inconsistency rises so does the pressure to eliminate or, at least, to reduce it. Festinger believed that dissonance is typically resolved by altering an inconsistent cognition, reducing its importance, or through the availability of new information.

The next section explores how Festinger's theory of cognitive dissonance can explain the behavior of person's that believe they face wage discrimination leading to changes in their wage rate.

B.   Perceptions of Wage Discrimination, Workplace Effort, and Cognitive Dissonance

Consider a firm that hires white (w) and black (b) workers from a pool of labor, and believes initially that all the members of a racial group are homogenous. Suppose the firm has an initial expectation (E) of worker productivity and believes that the

---

[3] There is a substantial body of empirical research showing that people who behave in different ways also vary predictably in their attitudes, which are thoughts or cognitions. For a review of the empirical literature on the relationship between attitudes and behavior see Ajzen and Fishbein (1980).

marginal product of black workers is less than the expected productivity of white workers, $\left(MP^E\right)_b < \left(MP^E\right)_w$, although black and white workers are actually equally productive. Following conventional neoclassical economic theory suppose the firm pays workers a real wage (W) equivalent to their expected marginal product MP^E since firms only observe, and hence learn, an employee's actual productivity over time.

(2.1) $\left\{(W)_b = \left(MP^E\right)_b\right\} < \left\{(W)_w = \left(MP^E\right)_w\right\}$

The racial wage gap identified in equation (2.1) is the result of statistical discrimination, since the firm has formed an inaccurate perception of black worker productivity based on stereotypical beliefs (Arrow, 1973; Coate and Loury, 1993; Lundberg and Startz, 1983).[4] This type of discrimination may well occur at firms since research by social psychologists (Fiske et al. 2002; Fiske and Ruscher 1993) provides empirical evidence that persons tend to hold negative stereotypes based on race and ethnicity.[5]

Workers are presumed to form their own expectation of their productivity $\left(\widetilde{M}\widetilde{P}^E\right)$. Psychologists Carver and Scheier (1981, pp.186) argue that individuals establish a target or goal called a "standard" to guide their behavior. In our view, the typical person who takes a job establishes a standard of being "*treated fairly*," which entails earning a real wage at least equal to their judgement of their marginal product.

(2.2) $(W) \geq \left(\widetilde{M}\widetilde{P}^E\right)$

We assert that psychological balance or equilibrium occurs when workers believe they are treated fairly. In addition to having a sense of their own productivity, workers are assumed to know the firms judgment of the productivity of white workers, since firms tout this as the performance level of the ideal worker.

Suppose white workers expectations of productivity are equivalent to their firm's expectations of their performance, so white workers are in psychological equilibrium

(2.3) $\left(\widetilde{M}\widetilde{P}^E\right)_w = \left(MP^E\right)_w = (W)_w$

---

[4] Another form of statistical discrimination is when perceived group characteristics, held by an employer, are applied to an individual. Thus, if an employer believes that people with poorer quality schooling make less satisfactory workers, and that blacks on average posses inferior schooling, then they may judge a black worker on the basis of this negative racial stereotype, *S*, rather than their own background--instead of putting forth the time and effort to accurately assess the quality of their schooling.

[5] See Fiske and Ruscher (1993) for a review of the literature in social psychology on negative stereotyping and minority group status.

Suppose there are two groups of black workers. Group 1 is composed of black employees who are in psychological balance since they form an expectation of their productivity in line with the judgement made by the employer

(2.4) $\quad \left(\widetilde{M}\widetilde{P}^E\right)^1_b = \left(MP^E\right)_b = (W)_b$

Group 2 contains black workers who believe, accurately, that they are just as productive as white workers

(2.5) $\quad \left[\left(MP^E\right)_b = (W)_b\right] < \left(\widetilde{M}\widetilde{P}^E\right)^2_b = \left(MP^E\right)_w = (W)_w$

but, these workers are not in psychological balance since, their pay is determined by the employers judgement of their productivity which falls short of their own assessment.

All black workers at this firm are subject to statistical discrimination since the firm has formed an unjustifiably low expectation of black worker productivity. However, only the black workers in Group 2 recognize that they face statistical discrimination since Group 1 workers attribute the racial wage gap to a difference in productivity. Moreover, the workers in Group 2 experience cognitive dissonance, since their desire to be *treated fairly* , $(W)_b = \left(\widetilde{M}\widetilde{P}^E\right)^2_b$,and their belief that they are not (see equation 2.5 above), due to discrimination, are cognitions that do not match. Workers in this predicament may attempt to restore psychological balance by altering their effort on-the-job. Of course one way to eliminate this source of cognitive uncomfort would be to simply quite their job, but this reaction is often not pragmatic so we focus on alternative strategies below.

A standard assumption of neoclassical economics is that a worker's effort on the job, ε , contributes to their productivity, $MP(\varepsilon)$, and that as their effort rises so does their marginal product, $\frac{\partial(MP(\varepsilon))}{\partial(\varepsilon)} > 0$. Worker effort is expected to depend on a number of factors including competition from the jobless and the extent of employer monitoring (Shapiro and Stiglitz 1984), and pay relative to what they might expect to earn for comparable work with other employers (Akerlof 1982).[6] Following Akerlof we assert that a worker's perception of how they are treated by their employer with respect to wages may influence their level of effort. However, our approach differs from Akerlof's in two ways. First, the extent to which people alter their effort is governed by a desire to be in psychological equilibrium. Second, we allow effort to act as a signal of skills or as a

---

[6] According to Akerlof workers have an impulse to increase effort due to the pleasure associated with being over paid.

mechanism for breaking down stereotypes about talent. In the next section we identify and describe three different strategies--*retaliatory exertion or shirking*, *waiting*, and *notification*--a worker can adopt to restore psychological balance if they believe they face statistical discrimination.

1.   **Statistical Discrimination: Worker Strategies to Restore Cognitive Equilibrium**

When a worker believes they are treated unfairly, leading them to experience cognitive dissonance, they can alter their level of effort in hopes of restoring cognitive balance by creating a situation where the wage falls in line with their perceived productivity. However, the direction of the change in effort is expected to depends on their assumptions about the behavior of firms.

Economists Farmer and Terrell (1996) developed a theory of racial wage differences based on the idea that employers underestimate the skills of minority workers, a form of statistical discrimination, but that over time through direct exposure to minority workers they learn their assumptions are false and update accordingly. In a recent paper Goldsmith, Hamilton, and Darity (2006b) find evidence consistent with the notion that employers undervalue the skills that minority workers bring to the job, but that as employers get to know minority workers they raise the value they apply to skills acquired with other firms. We formalize this perspective by assuming that as time, *t*, advances employers learn, *L*, more about their workers, $\frac{\partial L(t)}{\partial (t)} > 0$. If they come to realize that the racial beliefs or negative stereotypes (*S*) they hold about black worker productivity are false they will adjust those stereotypes and they will begin to break down or improve, $\frac{\partial S}{\partial L}\frac{\partial L}{\partial (t)} < 0$. This learning, in turn, will leading to a more favorable view of black worker productivity, $\frac{\partial \left(MP^E \right)_b}{\partial S}\frac{\partial S}{\partial L}\frac{\partial L}{\partial (t)} > 0$.

Thus, black workers facing statistical discrimination could adopt a strategy of *waiting* to reach a psychological balance. The idea would be to simply wait until employers revise their judgment of black workers productivity until it conforms with the productivity of white workers, $\left(MP^{E'} \right)_b = \left(MP^E \right)_w > \left(MP^E \right)_b$, whom they are just as productive as. Of course, as the employer revises their estimate of black worker productivity they will pay black employees a higher wage. Suppose black workers do not

change the assessment of their performance on-the-job. Recall that the initial situation for black workers in Group 1 and in Group 2 are respectively

(2.6) $\quad \left\{ (w)_b = \left(MP^E \right)_b \right\} = \left(\tilde{M}\tilde{P}^E \right)_b^1 < (W)_w$

(2.7) $\quad \left\{ (w)_b = \left(MP^E \right)_b \right\} < \left(\tilde{M}\tilde{P}^E \right)_b^2 = (W)_w$

　　　As a result of waiting and firms ultimately forming an accurate assessment of black workers the situation for black workers in Group 1 is now

(2.6a) $\quad \left[(w')_b = \left(MP^{E'} \right)_b \right] = (W)_w > \left(\tilde{M}\tilde{P}^E \right)_b^1$

(2.7a) $\quad \left\{ (w')_b = \left(MP^{E'} \right)_b \right\} = \left(\tilde{M}\tilde{P}^E \right)_b^2 = (W)_w$

Notice that black workers all received a wage increase resulting in them being paid a wage equivalent to that of white workers, and both groups of black workers are now in psychological equilibrium. However, for black workers in Group 1, their new wage exceeds their own forecast of their productivity. Of course, *waiting* might be a lengthy process, in which case the workers who recognize they are facing discrimination, those in Group 2, will suffer cognitive discomfort for an extended period. If these workers believe that employers are slow to learn they may embrace an alternative strategy to establish psychological equilibrium.

　　　The black workers in Group 2 who understand that they face statistical discrimination may engage in a strategy of *retaliatory exertion* or *shirking* to eliminate the cognitive dissonance they experience and thus gain psychological balance. This strategy entails reducing their effort enough $\left(\varepsilon' < \varepsilon \right)$ to lower their assessment of their own

marginal product to $\left(\tilde{M}\tilde{P}^{E'} \left(\varepsilon' < \varepsilon \right) \right)_b^2 < \left(\tilde{M}\tilde{P}^E (\varepsilon) \right)_b^2$ until it is in line with the employers

perception of their performance level. However, the decline in effort must be below the threshold at which the employer discovers them, in which case they will fired. If Group 2 workers follow the *shirking* strategy then

(2.7b) $\quad \left\{ (w)_b = \left(MP^E \right)_b \right\} = \left(\tilde{M}\tilde{P}^{E'} \left(\varepsilon' \right) \right)_b^2 < (W)_w$

In this case the workers gains psychological balance but the cost is two-fold. First, their

behavior ultimately verifies the employers initial prejudicial judgement that black workers are less productive than white workers, which reinforces their impulse to both hold false stereotypes and to practice statistical discrimination. Second, Group 2 workers will earn a wage that is unchanged and persistently lower than it would have been had they not faced discrimination or had they *waited* for employers to learn they were discriminating. Thus, they are only likely to adopt a strategy of reduced effort if they both find the cognitive costs of psychological disequilibrium to be large and sense that employers are slow to alter stereotypical beliefs. The shirking strategy results in black workers in both groups earning the same wage, as is the case if Group 2 workers adopt the *waiting* strategy to reach psychological balance. However, if they opt to *shirk*, then all black workers--those who perceive that they are being discriminated against and those who think they are treated fairly--will earn less than white workers.

Faced with statistical discrimination, members of Group 2 may adopt behaviors to signal their differences from the stereotypical belief held by their employer. One strategy would be to exert such a high level of effort $\left(\varepsilon^{''} > \varepsilon\right)$ that managers take *notice* or learn $\left(\dfrac{\partial L}{\partial(\varepsilon)} > 0\right)$ that the negative racial stereotype beliefs they hold are inaccurate $\left(\dfrac{\partial S}{\partial(L)} < 0\right)$ which leads them to reduce the extent of their negative perceptions $\dfrac{\partial S}{\partial L}\dfrac{\partial L}{\partial(\varepsilon)} < 0.$ [7] This development, in turn, leads employers to favorably reassess their judgement of the workers productivity, $\dfrac{\partial\left(MP^E\right)^2_b}{\partial S}\dfrac{\partial S}{\partial L}\dfrac{\partial L}{\partial(\varepsilon)} > 0.$ However, we assume that racial stereotypes only respond to an adjustment in effort that exceeds a threshold level ε^{*} considered *extraordinary*. We refer to this as the *notification* approach to restore psychological balance.

The extraordinary level of effort associated with *notification* eliminates the employers negative stereotype regarding black workers in Group 2, making blacks in Group 2 equally as productive as white workers in the eyes of the firm. Moreover, the extraordinary level of effort put forth by workers in Group 2 also raises the employers assessment of their productivity relative to white workers, who put forth less effort. Thus,

---

[7] Psychologist Brehm (1966) describes such a behavioral alteration as reactance.

$$(2.7\text{c}) \quad \left\{ \left(W^{"} \right)^2_b = \left(MP^{E^{"}} \left(\varepsilon^{"} > \varepsilon^* \right) \right)^2_b \right\} > \left(W \right)_w$$

Given no alteration effort on the part of black workers in Group 1 the employer has no reason to alter their perception of the productivity of workers in this group or their wages

so $\left\{ (w)^1_b = \left(MP^E \right)^1_b \right\} < \left\{ \left(w^{"} \right)^2_b = \left(MP^{E^{"}} \left(\varepsilon^{"} > \varepsilon^* \right) \right)^2_b \right\}.$

The black workers in Group 2 are likely to increase their judgement of their own

productivity given their extraordinary level of effort, $\left(\widetilde{M} \widetilde{P}^{E^{"}} \left(\varepsilon^{"} > \varepsilon^* \right) \right)^2_b > \left(\widetilde{M} \widetilde{P}^E \right)^2_b.$

However, the *informed action* strategy will place them in a psychological equilibrium so long as their new view of their level of productivity does not exceed the employers view.

The strategy black workers adopt in their effort to overcome the cognitive dissonance caused by wage discrimination, will influence wages between whites and blacks and between blacks based on their view of whether they face discrimination. Table 2 presents the predicted wage effects for each of the three strategies to yield psychological balance--that are examined. If *notification* is adopted we expect a wage hierarchy resulting in $(w)^1_b < (W)_w < (W)^2_b.$ A *shirking* strategy produces a different outcome, $(w)^1_b = (W)^2_b < (W)_w$, while *waiting* yields neither intra-group or inter-group wage differences, $(w)^1_b = (W)^2_b = (W)_w.$

The next section describes the empirical procedures we use to estimate the link between workers perceptions that they face wage discrimination and the wages they receive. Our estimates are used to speculate on which, if any, of the strategies identified are adopted by those who believe they face discrimination.

III. DATA AND METHODOLOGY

A. Data

Data from the *Multi City Study of Urban Inequality* (*MSCUI*) is used in this study. The *Multi City Study of Urban Inequality* is an interview-based survey of close to 9,000 Households and 2,400 Firms administered in the cities of Los Angeles, Boston,

Atlanta, and Detroit between 1992 and 1994.[8] *MCSUI* respondents included whites, blacks, Hispanics, Asians, and persons coded as "other." In conducting the Household Survey, from which we use data, attempts were made to "race match," by assigning interviewers of a certain race or ethnicity to respondents of that same race/ethnicity. *MCSUI* data are well suited for our study because participants were asked whether they believed they had faced workplace discrimination due to race in general and during hiring, or when promotion decisions were made .

Exposure to promotion discrimination is captured by an affirmative response to the question *Have you ever felt at any time in the past that others at your place of employment got promotions or pay raises faster than you did because of your race*? Contact with hiring discrimination is gauged by the question *Have you ever felt at any time in the past that you were refused a job because of your race*? Respondents were also asked a more general question--*During the past year were you discriminated against at your work because of your race*? We believe respondents interpreted this as meaning exposure to wage discrimination, since the question is asked in the section of the survey seeking information about wages and fringe benefits.

We restrict the analysis to men ages 21-65 who were working, and who were not self-employed, when the *MCSUI* survey was conducted. Women and the elderly are excluded to minimize biases arising from selective labor force participation. We further restrict the *MCSUI* sample to blacks and whites to focus on black-white wage differences. Survey participants were asked to report their hourly wage. Persons who do not provide their wage are excluded from the sub-sample we analyse. In addition, workers who report an hourly wage below $2 or above $100 are considered outliers and are excluded. In the *MCSUI* data persons with reported earnings in excess of $100.000 are excluded as well. Moreover, we do not use data from Detroit since information from that metropolitan area was not collected on a number of variables contained in our study.

Data on a rich array of socioeconomic and demographic factors is provided by the *MCSUI* including information on a person's human capital, workplace characteristics if employed, the neighborhood where they reside at the time of the survey, and retrospective personal and family characteristics when the interviewee was a youth. Persons were excluded from our sample if they did not report information on the full set of variables used in our most fully specified wage equation. The *MCSUI* data we analyse (given the

---

[8] All Detroit and Atlanta respondents were interviewed in 1992 and 1993 respectively, while participants residing in Boston and Los Angeles were interviewed in either 1993 or 1994.

restrictions we impose) contains 948 observations, 513 whites and 435 blacks, when we estimate our preferred model specifications.

1.　　Summary Statistics

Table 1 reports summary statistics for whites and for blacks for all of the variables used in our analysis. The data are reported in a series of panels which correspond to sets of variables that are recursively introduced to the empirical analysis. The panels provide information on; wages and perceived exposure to discrimination, human capital, demographics, work place characteristics, family and personal characteristics as a youth--referred as "premarket factors"--and current neighborhood characteristics. Variable definitions are presented in Appendix Table 1.[9]

Mean hourly wages and perceptions of discrimination are reported in Panel A of Table 1. The typical black workers reports hourly pay of $12.61 while the average white respondent reports earning $15.94 per hour, a 21 percent difference. Blacks report much higher levels of perceived discrimination at work due to race than whites. Thirty percent of blacks, and 10 percent of whites, claim to have faced hiring discrimination. One in four blacks reports having been subject to promotion discrimination, but only 6 percent of whites feel they were treated unfairly regarding advancement. Moreover, 20 percent of the black respondents believes they faced wage discrimination while only 6 percent of whites hold this belief.

Inspection of Table 1 reveals that on most variables there is substantial variation in mean values between whites and blacks. White workers have higher values on many variables that are known to contribute to wages such as years of schooling and tenure. In addition, the typical white worker relative to the average black employee in the sample, had more educated parents, was more likely to be raised in an intact family, and was less likely to have been poor as a youth. Thus, casual inspection of the wage and characteristic data reported in Table 1 suggests that the higher wages earned by whites relative to blacks may be due greater productivity.

Whether there is a link between perceived exposure to discrimination and wages, for black workers, and whether such a belief is associated with the racial wage gap is unclear. However, our theory suggests that workers who believe they face discrimination may engage in strategies to reach psychological equilibrium, such as *retaliatory exertion*,

---

[9] A concern is whether our sub-sample of employed persons who meet our restrictions differs markedly from the sub-sample of persons capable of working. Comparison of the means, for those variables that do not describe features of work, reveals little difference between those capable of work and those actually employed {table available upon request?}.

that may reduce the black-white pay gap.   In the next section we conduct a rigorous and systematic examination of the link between perceptions of workplace discrimination and wages using regression analysis to determine whether a workers wage is influenced by their belief they have been subject to discrimination and if such a belief influences the relative wages of white and black workers after controlling for conventional wage determinants.

B.   Methodology

We estimate reduced form wage equations using ordinary least squares to determine if within racial groups, and across racial groups, there is a difference in wages between those workers who believe they have been subject to workplace discrimination and employees who feel they have been treated fairly. The model we estimate is specified as follows

$$(3.1) \quad \ln w_i = \alpha + \beta(Black_i) + \gamma(PerDisc_i) + \psi(Black * PerDisc_i) + \lambda(X_i) + \mu_i$$

where $\ln w$ is the log of the wage a worker receives on their job. *Black* and *PerDisc* are indicator variables that identify black employee's and those workers who believe they have faced workplace discrimination. These indicators are interacted to determine if the impact of perceived exposure to discrimination varies for white and black workers. The vector *X* contains all of the other determinants of the wage rate.

Equations (3.1) is estimated three different times, once for each of the three alternative measures of workplace discrimination, using data drawn from the *MCSUI*. White workers who believe they have not faced workplace discrimination are the reference category for the model. Given this wage specification we are able to estimate the effect on the wage rate of perceived exposure to discrimination (W^{dis}) and to being

treated fairly (W^{nodis}) for white (w) and black (b) workers. Using these estimates we are able to construct a number of comparisons including those that shed light on how blacks that perceive they face discrimination respond in an effort to attain psychological balance ($W_{\mathrm{b}}^{\mathrm{dis}} - W_{\mathrm{b}}^{\mathrm{nodis}} = \gamma + \psi$; $W_{\mathrm{b}}^{\mathrm{dis}} - W_{\mathrm{w}}^{\mathrm{nodis}} = \beta + \gamma + \psi$; and $W_{\mathrm{b}}^{\mathrm{nodis}} - W_{\mathrm{w}}^{\mathrm{nodis}} = \beta$).

We estimate a number of different versions of equations (3.1). We begin our analysis by estimating a sparse OLS wage regression that contains only variables that indicate a person's race, and their belief about whether they have faced wage discrimination (Model 1) and move to regressions that add controls for an individual's skills and their socio-demographic characteristics (Model 2), and their work environment

characteristics, (Model 3)--yielding a garden variety wage equation.[10] Then we augment this conventional wage equation with family characteristics as a youth and current neighborhood descriptors (Model 4). Models 3 and 4 constitute our preferred model specifications, so our discussion of findings will focus on these models. We also estimate a model that extends Model 3 by adding controls for occupation of employment (Model 5). However, we recognize that a worker's race may influence his or her assignment to a job or type of work in which case occupation is not exogenous. Thus, caution should be used when interpreting our results from Model 5.

II.   EMPIRICAL RESULTS

Tables 3A, 3B, and 3C are summary table that presents our estimates of the impact of each of the three forms of perceived discrimination (workplace, hiring, and promotion) on wages for reduced form log wage regressions. Our findings for Models specifications 1-5 are presented in these tables. Intra-group effects are reported in rows (2) and (8) while our inter-group findings are presented in rows (6) and (9). Our estimates of the racial wage gap when white and black workers report similar views on exposure to discrimination are set out in rows (1) and (7). Coefficient estimates for all of the variables included in Model 3 and Model 4 are presented in Appendix Table 2. Virtually all of the estimated coefficients have the expected sign and are highly significant at conventional levels. Appendix Table 3 is a summary table that indicates which hypotheses our findings are consistent with for each of the measures of discrimination. Panel A of Appendix Table 3 summarizes our findings when white workers who believe they have been treated fairly is the reference group.

A.   Common Perceptions of Discrimination and the Racial Wage Gap

A racial wage gap suggests that there will be a racial happiness gap, *ceteris paribus*. We find no evidence of wage differences between black and white workers who believe they face discrimination (row 7) for each of our measures of discrimination (i.e., $W_b^{\text{dis}} = W_w^{\text{dis}}$). However, among workers who do not report exposure to discrimination (row 1), wages for black workers are 11.5 to 19 percent lower than for whites ($W_b^{\text{nodis}} < W_w^{\text{nodis}}$). Thus, the racial wage gap, which is well documented, appears to be

---

[10] Beginning with Model 3 the vector X contains city indicators for Los Angeles and Boston, with Atlanta (and hence 1992), serving as the reference category. A dummy variable is also included to identify if the respondents residing in Los Angeles and Boston were interviewed in 1993 or 1994.

confined to those workers who think they are treated fairly. We assume that white workers who believe they are treated fairly are the reference group for black workers when answering questions about exposure to discrimination. We now compare the wages of blacks who believe they are treated fairly (Group 1), and those who feel they face discrimination (Group 2), against the reference group and each other to shed light on how blacks who believe they face discrimination respond.

B.   Evidence on the *Waiting*, *Shirking*, and *Notification* Hypotheses; White Workers Who Do Not Face Discrimination as the Reference Group

We find no significant wage difference between black workers who believe they face discrimination and those who think they are treated fairly (row 8) for workplace and promotion discrimination, which is consistent with both the *shirking* and *waiting* hypotheses. But, we also find that blacks who believe they face promotion or workplace discrimination (row 6) and those think they are treated fairly ((row 1) earn significantly lower wages than whites who do not believe they face discrimination, both of which are predicted by the *shirking* response to perceived discrimination. Thus, the evidence points toward a downward adjustment of effort on the part of black workers who believe they are discriminated against so that their contribution to the firms revenue corresponds, rather than exceeds, their hourly pay.

A striking finding is that black workers who believe they are discriminated against earn wages that are about 8 percent higher than black employees who think they are not exposed to discrimination, and this difference is statistically significant. This outcome is predicted by the *notification* response or extraordinary effort to overcome the adverse stereotypes that the workers think they face. The *notification* strategy also predicts that white workers will earn more than black workers who believe they are treated fairly, and we find that as well. However, white workers earn substantially more than the black workers who identify themselves as facing hiring discrimination. This later findings suggests that although employers seem to recognize the greater effort and productivity of the workers who believe they face discrimination, they still do not think they are as productive as white workers.

C.   Is There a Wage Hierarchy?

If relative wages influence happiness, then a wage gradient or hierarchy is consistent with a happiness gradient. Our estimate reveal that $W_{\mathrm{w}}^{\mathrm{dis}}$ is less than $W_{\mathrm{w}}^{\mathrm{nodis}}$ by 16-19 percent (row 1) based on Model 3 for the various forms of perceived discrimination. As noted earlier we also find that blacks who believe they face discrimination have

significantly lower wages, on the order of 16 percent, than white workers who believe they do not face discrimination (row 6, $W_b^{dis} - W_w^{nodis}$). In addition, we find statistically equivalent wages for white workers who think they are treated unfairly and black workers who believe they are treated fairly (row 9, $W_w^{dis} = W_b^{nodis}$). Thus, we find evidence of a wage hierarchy where whites who sense they are treated fairly earn more than whites who believe they are discriminated against and black workers, regardless of their view of how they are treated (unless the perceived source of discrimination is hiring)--($W_w^{nodis} > W_b^{nodis} \approx W_w^{dis} \approx W_b^{dis}$). Thus, it is likely that the level of happiness is greater for whites who believe they are treated fairly, and happiness is roughly equivalent for other black and white workers.

III.   CONCLUDING REMARKS

There is a substantial literature that finds a linkage between happiness and relative economic well being as measured by earnings or wages. There is also a well documented racial gap in wages. One explanation for this is disparate treatment or discrimination. Many black workers report perceiving that they face workplace discrimination in general and with respect to specific events such as hiring and promotion. This paper explores how such workers respond to these feelings, under the assumption that perceived exposure to discrimination cause psychological discomfort that workers seek to eliminate. We identify three alternative strategies for attaining psychological equilibrium when facing discrimination--*waiting*, *shirking*, and *notification*--each of which generates different predictions for intra-racial and inter-racial wage differences. Using data drawn from the *Multi City Study of Urban Inequality*, which contains information on perceptions of discrimination, we derive estimates of the relative wage effects of perceived discrimination to shed light on the which hypotheses is consistent with the data. We find evidence of a wage hierarchy with whites workers who believe they are treated fairly at the top and all other workers falling behind by an equivalent amount. Our evidence suggest that when confronted with hiring discrimination black workers appear to give greater effort to overcome this hurdle, as predicted by the *notification* hypothesis. However, when black workers sense that they face promotion or workplace discrimination,

the evidence is consistent with their reducing effort to bring their output level down, and hence in line with their pay level.

A number of questions remain to be explored including; are there systematic differences in the characteristics of those who report believing they face discrimination and those who believe they are treated fairly? does the skin shade of blacks who believe they are subject to discrimination, or the amount of time these individuals have spent with their current employer, influence the strategy they adopt to reach psychological balance?

References

Akerlof, George, and Dickens, W. T., 1982. The economic consequences of cognitive dissonance. *American Economic Review*, 72(3), 307-319.

Altonji, Joseph G., and Rebecca Blank. 1999. Race and Gender in the Labor Market." In Orley Ashenfelter and David Card, eds., *Handbook of Labor Economics*, Vol. 3A, chapter 31, Amsterdam: North Holland, pp. 3143-3260.

Ajzen, I. and M. Fishbein, 1980. Understanding Attitudes and Predicting Social Behavior. New Jersey: Prentice-Hall.

Arrow, Ken, 1973. The Theory of Discrimination. In *Discrimination in Labor Markets*, O. Ashenfelter and A. Rees, eds. Princeton, NJ: Princeton University Press.

Brehm, J.W., 1966. A Theory of Psychological Reactance. New York: Academic Press.

Carver, Charles S., and Michael F. Scheier, 1981. Attention and Self-Regulation: A Control- Theory Approach to Human Behavior, New York: Springer-Verlag.

Coate, S., and Glen C. Loury, 1993. Will Affirmative-Action Policies Eliminate Negative Stereotypes? American Economic Review, 83(5), pp. 1220-1240.

Couch, Kenneth; Daly, Mary C., 2002. "Black-White Wage Inequality in the 1990s: A Decade of Progress." *Economic Inquiry*, 40 (1), pp. 31-41.

Darity, William, A., and Patrick L. Mason, 1998. "Evidence on Discrimination in Employment: Codes of Color, Codes of Gender," *Journal of Economic Perspectives*, 12(2), pp. 63-90.

Darity, Jr., William, Rhonda Sharpe, and Major Coleman, 2006. "Are Claims of Discrimination Valid?: The Moral Hazard Effect." Working Paper, Department of Economics, University of North Carolina at Chapel Hill.

Earl, Peter, E., 1992. "On the Complementarity of Economic Applications of Cognitive Dissonance Theory and Personal Construct Psychology" in S. Lea, P. Webley and B. Young (Eds), *New Directions in Economic Psychology*, pp. 49-65. Brookfield, VT: Edward Elgar.

Earl, Peter, E., and Robert A. Wicklund, 1999. "Cognitive Dissonance" in Peter E. Earl and Simon Kemp (Eds), The Elgar Companion to Consumer Research and Economic Psychology, pp. 81-87.

Farmer, Amy, and Dek Terrell, 1996. "Discrimination, Bayesian Updating of Employer Beliefs, and Human Capital Accumulation." *Economic Inquiry*, 34, pp. 204-19.

Festinger, Leon, 1957. A Theory of Cognitive Dissonance Palo Alto, CA: Stanford University Press).

Fiske, Susan T., Amy Cuddy, Peter Glick, and Jun Xu. 2002. A model of (often mixed) stereotype content: competence and warmth respectively follow from perceived status and competition. *Journal of Personality & Social Psychology* 82: 878-902.

Fiske, Susan T., and Janet B. Ruscher. 1993. Negative interdependence and prejudice: whence the affect? In *Affect, cognition, and stereotyping: interactive processes in group perception*, edited by Diane M. Mackie and David Lewis Hamilton, San Diego, CA: Academic Press, pp. 239-68.

Goldsmith, Arthur H., Darrick Hamilton, and William Darity, Jr., 2006a. "*From Dark to Light: Skin Color and Wages Among African-Americans*." Working Paper, Washington and Lee University.

Goldsmith, Arthur H., Darrick Hamilton, and William Darity, Jr., Forthcoming, October 2006b. "Does a Foot-in-the-Door Matter? White-Nonwhite Differences in the Wage Return to Tenure and Prior Workplace Experience." *Southern Economics Journal*.

Goldsmith, Arthur H., Sedo, Stanley, Darity, William, Jr., and Darrick Hamilton, 2004. "The Labor Supply Consequences of Perceptions of Employer Discrimination During Job

Search and On-the-Job: Integrating Neoclassical Theory and Cognitive Dissonance?" *Journal of Economic Psychology*, 25(1), pp. 15-39.

Hallock, Kevin, F., Hendricks, Wallace, and Emer Broadbent, 1998. "Discrimination by Gender and Disability Status: Do Worker Perceptions Match Statistical Measures?" Southern Economic Journal, 65(2), 245-63.

Hirschman, A.O., 1965. Obstacles to development: a classification and a quasi-vanishing act. Economic Development and Cultural Change, 13, 385-393.

Kuhn, Peter J., 1987. "Sex Discrimination in Labor Markets: The Role of Statistical Evidence." *American Economic Review*, 77(4), 567-83.

Lundberg, S.J., and R. Startz, 1983. "Private Discrimination and Social Intervention in Competitive Labor Markets." *American Economic Review*, 73(3), pp. 340-347.

Maital, S., 1982. Minds, markets and money: Psychological foundations of economic behavior. New York: Basic Books.

Mason, Patrick L. 1997. "Race, Culture, and Skill: Interracial Wage Differences Among African Americans, Latinos, and Whites" *Review of Black Political Economy* 25(3):5-39.

Neumark, David, and Michele McLennan, 1995. "Sex Discrimination and Women's Labor Market Outcomes." *Journal of Human Resources*, 30(4), 713-40.

Shapiro, Carl, and Joseph E. Stiglitz, 1984. "Equilibrium Unemployment as a Worker Discipline Device." *American Economic Review*, 74(3), pp. 433-444.