

# Racial harassment, job satisfaction, and intentions to remain in the military

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**Abstract** Our results indicate that two thirds of active-duty military personnel report experiencing offensive racial behaviors in the previous 12 months, whereas approximately one in ten reports threatening racial incidents or career-related discrimination. Racial harassment significantly increases job dissatisfaction irrespective of the form of harassment considered. Furthermore, threatening racial incidents and career-related discrimination heighten intentions to leave the military. Finally, our results point to the importance of accounting for unobserved individual- and job-specific heterogeneity when assessing the consequences of racial harassment. In single-equation models, the estimated effects of racial harassment on both job dissatisfaction and intentions to leave the military are understated.

**Keywords** Job satisfaction · Racial harassment · Quits

**JEL Classification** J16 · J28

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## 1 Introduction

An increase in the racial and ethnic diversity of the US population has left many employers managing more heterogeneous groups of workers than ever before. On the one hand, workplace diversity appears to facilitate greater creativity and lead to more scope for problem solving, whereas, on the other hand, diversity can also result in greater discontent among workers. This tension has led to a large literature—across the range of social science disciplines—that seeks to investigate issues related to race and ethnicity in the workplace.<sup>1</sup>

Diversity issues are particularly salient for the US military. Historically, the military has been relatively integrated when compared to other social institutions and has consequently provided a key source of socioeconomic mobility for black Americans (Ellison 1992; Moskos and Butler 1996). The military has become even more racially and ethnically diverse over time. Between 1973, when the all-volunteer force was established, for example, and 1999, minority representation within the active-duty officer corps grew from 4.2 to 16.9% despite the overall downsizing of the defense forces in the late 1980s (DOD undated, p. 92; Dansby et al. 2001).<sup>2</sup> Unfortunately, this increased diversity has not come without cost. In particular, reports of racial and ethnic harassment are common in the US military (Antecol and Cobb-Clark 2007), and the US military spends millions of dollars each year supporting equal opportunity practices (Edwards 2001). The development of effective policies for managing diversity and limiting discord is vital in light of these costs and suggests that, in the future, the military may find “the equal opportunity climate of its units is one of its primary criteria of mission effectiveness” (Knouse 1991, p. 386).<sup>3</sup>

Our objective is to contribute to the literature on workplace diversity by examining the consequences of racial harassment for individuals’ job satisfaction and intended job change.<sup>4</sup> To this end, we utilize data on a sample of active-duty personnel in the US military captured in the Armed Forces Equal Opportunity Survey (AF-EOS 2000), which provides us with direct information about the nature

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<sup>1</sup> See Milliken and Martins (1996) for a review of the organizational psychology literature on the effects of workplace diversity. Lazear (1999) examines the incentives for diversity in team building, whereas Alesina and La Ferrara (2005) consider the relationship between ethnic diversity and economic performance generally. Finally, Hamilton et al. (2004) present empirical evidence on the impact of team diversity on productivity.

<sup>2</sup> In 1999, minorities made up fully 36.4% of all active-duty personnel (Dansby et al. 2001, p. 221).

<sup>3</sup> Similar arguments can be made regarding sexual harassment and the integration of women into the US military (Antecol and Cobb-Clark 2006). In particular, sexual harassment has been linked to a reduction in unit cohesion and combat readiness (Rosen and Martin 1997).

<sup>4</sup> In the analysis, we will also consider harassment of Asians and Hispanics. Although harassment of these groups is more likely based on ethnicity rather than race, we will continue to refer to this as “racial” harassment for simplicity.

and extent of harassment individuals have faced.<sup>5</sup> Large samples, detailed information, and the ability to identify unique military installations (workplaces) make the data especially well suited to the task at hand. Given our interest in the consequences of racial harassment, we develop a simultaneous-equation model in which harassment affects job satisfaction directly and—through the job satisfaction equation—has indirect effects on intended quits. This specification allows the error terms to be correlated across equations and, consequently, accounts for the effects of any unobserved individual- and job-specific effects—related to, for example, specific military jobs or individuals' attitudes toward work—that jointly determine more than one of our outcomes of interest. Explicitly accounting for this endogeneity is important in producing consistent estimates of the consequences of racial harassment.

Studying the effect of racial harassment on job satisfaction is of interest because job satisfaction itself is a measure of overall well-being (Clark 1996, 1997).<sup>6</sup> Additionally, job satisfaction is an important predictor of individual behavior. The psychology literature, for example, provides evidence that low job satisfaction is correlated with increased absenteeism (Clegg 1983), lower worker productivity (Mangione and Quinn 1975), and increased incidence of mental and physical health problems (Locke 1976). More importantly for our purposes in this study, job satisfaction is also related to both intentions to quit (Shields and Wheatley Price 2002b; Shields and Ward 2001; Laband and Lentz 1998; Gordon and Denisi 1995) and actual quit behavior (Kristensen and Westergård-Neilsen 2004; Clark 2001; Bertrand and Mullainathan 2001; Clark et al. 1998; Freeman 1978) with estimates derived from panel data demonstrating that the causality runs from job satisfaction to future quitting behavior.

Moreover, assessing the effect of racial harassment on job satisfaction and intended job change is helpful in expanding our understanding of the consequences of labor market discrimination more generally. In particular, previous research suggests that workers' self-reports of harassment and discrimination are closely related to subsequent labor market behavior. Older workers who report experiencing age discrimination and women who report experiencing gender discrimination are more likely to separate from their employers for example (Johnson and Neumark 1997; Neumark and McLennan 1995), whereas women's labor supply appears to be particularly sensitive to racial discrimination and sexual harassment (Goldsmith et al. 2004). Given the need to recruit and retain high-quality personnel (see Hosek and Sharp 2001) and the close link between personnel's stated intentions regarding reenlistment and actual reenlistment behavior (Chow and Polich 1980; Rostker et al. 1993), we would expect the costs of racial harassment to the military to be

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<sup>5</sup>Empirical estimates of labor market discrimination are generally derived from residual differences in aggregate outcomes once observable productivity-related characteristics have been taken into account. Omitted variables, unobserved heterogeneity, and measurement error can all confound residual-based estimates of labor market discrimination, however, leading to an increased interest in the use of direct survey data to measure discrimination (e.g., Kuhn 1987; Hampton and Heywood 1993; Laband and Lentz 1998; Johnson and Neumark 1997; Antecol and Kuhn 2000; Shields and Wheatly Price 2002a, b; Antecol and Cobb-Clark 2006, 2007).

<sup>6</sup>See Clark (1996), Clark and Oswald (1996), Heywood and Wei (2006), and Shields and Ward (2001) for reviews of the economics literature on job satisfaction.

substantial if harassment results in men and women failing to enlist or once enlisted, choosing to end their military careers.

Racial harassment is a particularly blatant form of racism that is discriminatory by its very nature (see Shields and Wheatly Price 2002a). Despite a vast literature on the effects of labor market discrimination on the aggregate wages of different groups, little attention has been paid to the consequences of discrimination for other outcomes of interest, and even less attention has been directed toward the effects of racial harassment per se (see McClelland and Hunter 1992).<sup>7</sup> This is unfortunate because psychologists studying prejudice argue that the forces driving discrimination and harassment per se are likely to differ (Brewer 1999).

Our results indicate that two thirds of active-duty military personnel report experiencing offensive racial behaviors in the previous 12 months, whereas approximately one in ten report threatening racial incidents or career-related discrimination. Racial harassment significantly increases job dissatisfaction irrespective of the form of harassment considered. Furthermore, threatening racial incidents and career-related discrimination heighten intentions to leave the military, although there is no significant effect of racially offensive behavior on the intended job change of active-duty personnel. Finally, our results point to the importance of accounting for unobserved individual- and job-specific heterogeneity when assessing the consequences of racial harassment. In single-equation models, the estimated effects of racial harassment on both job dissatisfaction and intentions to leave the military are understated.

## 2 The armed forces equal opportunity survey

We use data drawn from the public-use 1996 US AF-EOS combined with a randomized variable extracted from the confidential file that allows us to identify separate military installations. These data are uniquely suited to the analysis at hand. The public-use file provides us with detailed information on perceived racial harassment, job satisfaction, and intentions to remain in the military, as well as demographic and human capital characteristics. Additionally, the public-use AF-EOS contains information about the equal opportunity climate, as well as social prescriptions regarding interracial interactions. The ability to identify unique military installations is extremely important for our purposes, as it allows us to construct installation-specific measures of these organizational factors.<sup>8</sup>

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<sup>7</sup>Exceptions are Shields and Wheatly Price (2002b) who examine the effect of racial and ethnic harassment on both job dissatisfaction and the intention to leave nursing. Additionally, Laband and Lentz (1998) and Antecol and Cobb-Clark (2006) study the effect of sexual harassment on the job satisfaction and intended job change of female lawyers and female military personnel, respectively.

<sup>8</sup>Installations are a particularly meaningful measure of organizations in our case because they reflect geographically separate groups of individuals who live and work together and whose day-to-day experiences are ultimately under the command of a single individual. In particular, DoD directives make equal opportunity a commander's responsibility (Dansby and Landis 2001).

The AF-EOS data generalize to personnel in the Army, Navy, Marine Corps, Air Force, and Coast Guard with at least 6 months of active-duty service who are below the rank of admiral or general. To conduct the AF-EOS, a non-proportional stratified random sample of active-duty personnel was drawn from the Defense Manpower Data Center's (DMDC) April 1996 Active-duty Master File (ADMF). This sample was stratified on the basis of service, location, pay level, and race/ethnicity. In particular, minority groups were oversampled to ensure adequate numbers of minority respondents were available for analysis. AF-EOS questionnaires were then mailed to sample members between September 1996 and January 1997. From an initial eligible sample of 73,496 individuals,<sup>9</sup> usable questionnaires were returned from 39,855 individuals for an overall response rate of 52.7% (Elig et. al. 1997; Wheelless et. al. 1997).

We restrict our analysis to individuals with non-missing military installation codes because these codes are needed to construct our measures of equal opportunity climate and social prescriptions regarding interracial interactions (see Section 3 below). Unfortunately, installation codes are not generally available for overseas personnel and members of the Coast Guard, and so, these individuals have also been excluded from the sample.<sup>10</sup> Moreover, we only consider installations for which we have a sample of at least ten active-duty members to have sufficient precision for our installation-level measures.<sup>11</sup> These restrictions produce a final sample of 17,879 individuals including 5,142, 4,253, 4,802, and 3,682 white, black, Hispanic, and Asian active-duty personnel, respectively, with non-missing values for the key variables of interest.<sup>12</sup>

Personnel in the sample were asked which of the 31 separate racial harassing incidents—initiated by another military member or a Department of Defense civilian—they had experienced in the previous 12 months. These incidents range from being subjected to offensive racist remarks and being told racist jokes to being evaluated unfairly or being physically assaulted because of race. Following Scarville et. al. (1997), we combine the responses to the 31 separate items in the 1996 AF-EOS into three

<sup>9</sup>Although the initial non-proportional stratified random sample consisted of 76,754 active-duty personnel, 3,258 of them were found to be ineligible for the target population because they had left the military service (Elig et al. 1997; Wheelless et al. 1997).

<sup>10</sup>Approximately 40% (70%) of overseas personnel (members of the Coast Guard serving in the USA) have missing installation codes, whereas roughly 13, 6, 4, and 4% of members of the Army, Navy, Marine Corps, and Air Force serving in the USA, respectively, have missing installation codes.

<sup>11</sup>Similar results are found if we consider only those installations with at least 50 active-duty members and are available upon request.

<sup>12</sup>A unique feature of the AF-EOS data is that it contains basic demographic information for both respondents and non-respondents. We find that, while whites and Asians were disproportionately likely to respond to the survey, blacks are underrepresented among respondents. Moreover, respondents are less likely to be in the Marines and more likely to be in the Air Force. These differences—while significant—are generally minor, suggesting that the characteristics of the two groups are much the same. Similar results are found when comparing our analysis sample to both non-respondents and respondents who were excluded from our analysis (i.e., members of the coast guard, personnel serving at small military installations (i.e., less than ten active-duty personnel), overseas personnel, installations with missing zip codes, installations with missing identifiers, and characteristics with missing information). Unfortunately, however, we can only speculate about the ways in which the harassment experiences of these individuals might differ from the individuals in the sample.

broad categories: (1) offensive encounters, (2) threatening encounters, and (3) career-related incidents. We then create three indicator variables that equal one if a respondent reported experiencing at least one of the behaviors in each category (see Table A.1 in Appendix) and zero otherwise. While the latter essentially measures racial discrimination, the former two are more sensibly thought of as racial harassment per se.<sup>13</sup> For ease of exposition, however, we shall refer to all three measures collectively as “harassment.”<sup>14</sup>

Table 1 (column 1) presents the mean incidence (and standard deviation) of each type of harassment, as well as the overall incidence of harassment by racial group membership. Overall, offensive encounters are the most frequently reported form of racially harassing behavior (65.1%), with career-related (12.7%) and threatening incidents (8.9%) occurring less frequently. This general pattern holds within racial groups, although there is substantial diversity in perceived harassment across groups. No racial group uniformly reports a higher incidence of every type of harassing behavior. In particular, reports of offensive encounters are highest among Hispanics (77.5%), whereas reports of threatening encounters and career-related incidents are highest among Asians (14.2%) and among blacks (28.7%), respectively. White personnel are less likely to report all types of harassing behavior than are their non-white counterparts, although the majority (60.9%) of white personnel also report being subjected to racially offensive encounters. Although it is difficult to make direct comparisons, it is interesting to note that, while the incidence of racial harassment reported by white military personnel is substantially higher than that reported by white British nurses, harassment levels among non-white military personnel and British nurses are often quite similar (see Shields and Wheatly Price 2002a).

In addition to asking active-duty personnel about the incidence of racially harassing behavior in the military, the AF-EOS survey also collected information about how satisfied individuals were with certain aspects of military life. Specifically, individuals were asked the following questions. First, how satisfied are you with your job as a whole? Second, suppose that you need to decide whether to remain in the military. Assuming you could remain, how likely is it that you choose to do so?<sup>15</sup> We consider the following measures of job satisfaction and intended job change in the military. “Dissatisfied” equals one for individuals reporting that they are either dissatisfied or very dissatisfied with their job as a whole and zero otherwise, and “quit” equals one for individuals reporting that they are either unlikely or very unlikely to remain in the military.

<sup>13</sup>Scarville et. al. (1997) used a principal component analysis with orthogonal rotation to assign each of the 31 types of encounters into six broad categories. As four of their categories (assignment/career, evaluation, punishment, and training/test scores) all pertain to racial discrimination with respect to aspects of one’s military career, we have combined these four categories into one broad category that we label “career-related.” The remaining categories are identical to those considered by Scarville et. al. (1997). See Table A.1 in Appendix for a detailed list of the question wording and specific behaviors that make up each type of racial harassment.

<sup>14</sup>Given the disjuncture between standard measures of discrimination and perceptions of discrimination (Antecol and Kuhn 2000), we suspect that—even if harassment could be objectively measured—it is perceptions of harassment that are important in understanding individual behavior.

<sup>15</sup>Responses to the first question include: very dissatisfied, dissatisfied, neither, satisfied, and very satisfied. Responses to the second question include: very unlikely, unlikely, neither, likely, and very likely.

Table 1 also reports the incidence of job dissatisfaction and intended job change by race and harassment experience. Overall, 16.8% of military personnel report dissatisfaction with their military jobs and 26.6% report intending to leave the military. In general, non-white personnel have levels of job dissatisfaction similar to whites, although intended job change is generally somewhat lower among minority personnel. For example, overall 27.6% of white personnel report intending to end their military career, which is slightly higher than the proportion of blacks (24.8%), Hispanics (25.0%), and Asians (20.0%) intending to make a career change. These results are consistent with previous research on civilian workers suggesting that—despite being in generally less attractive jobs—groups such as blacks and women often exhibit similar or higher levels of job satisfaction, a finding that has been attributed to lower expectations (Bartel 1981; Clark 1997).

Not surprisingly, job dissatisfaction and intentions to leave the military are higher among those reporting some form of racial harassment irrespective of race. Similarly, regardless of race, intentions to leave the military are higher among those reporting dissatisfaction with military employment. Dissatisfaction and intentions to leave the military are particularly high among those who have experienced racially threatening incidents and career-related discrimination. For example, overall 18.1% of black personnel report dissatisfaction with their military career, and 24.8% intend to leave the military. In contrast, fully 31.3% of black personnel reporting racially threatening incidents and 27.0% of those experiencing career-related discrimination are dissatisfied with their jobs, whereas more than a third intend to end their military employment.

### 3 The estimation strategy

Our interest is in assessing the consequences of racial harassment for military personnel's dissatisfaction with and intentions to leave military employment. One obvious strategy for addressing this issue is to incorporate measures of harassment directly into a job satisfaction and/or an intended job change equation. Although this approach has been used previously in the harassment literature (see for example, Laband and Lentz 1998; Shields and Wheatly Price 2002b; Antecol and Cobb-Clark 2006), these single-equation models assume that reported racial harassment is exogenous to reported job dissatisfaction and intentions toward future military employment. However, it is likely that unobservable individual- or job-specific characteristics may jointly determine both perceived harassment and the other outcomes of interest. For example, heterogeneity in individuals' perceptions of, tolerance for, or willingness to report unpleasant events in the workplace potentially influences both reports of racial harassment and personnel's satisfaction with military employment. Failure to account for this endogeneity would lead the single-equation estimates of the effect of harassment on job satisfaction and intended job change to be biased.<sup>16</sup> Consequently, we develop a simultaneous equations model in

<sup>16</sup>Antecol and Cobb-Clark (2006) find that endogeneity leads single-equation estimates of the effect of sexual harassment on job satisfaction and intended quits to be overstated. At the same time, Shields and Wheatly Price (2002b) conclude that, although significant correlations exist between the error terms in their racial harassment, job satisfaction, and intended job change equations, their results based on single-equation models are generally robust to endogeneity concerns.

**Table 1** Reports of racial harassment, job dissatisfaction, and intentions to quit the military

	Reports of behavior		Dissatisfaction		Quit	
	Mean	SD	Mean	SD	Mean	SD
Overall			0.168	0.374	0.266	0.442
Harass	0.659	0.474	0.192	0.394	0.286	0.452
Offense	0.651	0.477	0.191	0.393	0.286	0.452
Threat	0.089	0.285	0.301	0.459	0.394	0.489
Career	0.127	0.333	0.309	0.462	0.364	0.481
White			0.167	0.373	0.276	0.447
Harass	0.616	0.486	0.191	0.393	0.301	0.459
Offense	0.609	0.488	0.189	0.392	0.300	0.458
Threat	0.075	0.263	0.289	0.454	0.406	0.492
Career	0.075	0.264	0.356	0.479	0.387	0.488
Black			0.181	0.385	0.248	0.432
Harass	0.764	0.425	0.205	0.404	0.263	0.440
Offense	0.750	0.433	0.204	0.403	0.260	0.439
Threat	0.128	0.334	0.313	0.464	0.378	0.485
Career	0.287	0.452	0.270	0.444	0.356	0.479
Hispanic			0.156	0.363	0.250	0.433
Harass	0.785	0.411	0.179	0.383	0.263	0.440
Offense	0.775	0.417	0.179	0.383	0.264	0.441
Threat	0.105	0.307	0.349	0.477	0.405	0.492
Career	0.200	0.400	0.280	0.449	0.324	0.468
Asian			0.151	0.358	0.200	0.400
Harass	0.680	0.466	0.178	0.382	0.227	0.419
Offense	0.668	0.471	0.180	0.384	0.227	0.419
Threat	0.142	0.349	0.266	0.443	0.318	0.467
Career	0.164	0.370	0.311	0.464	0.333	0.472

Sampling weights used. Number of observations are 17,879, 5,142, 4,253, 4,802, and 3,682 for the overall, white, black, Hispanic, and, Asian samples, respectively. Harass equals one if offense, threat or career equals one and zero otherwise. See Appendix Table 1 for complete definitions of the harassment, discrimination, job dissatisfaction, and intentions to quit measures.

which we allow the error terms to be correlated across equations to take account of any unobserved heterogeneity.

### 3.1 The model

We begin with a structural model in which perceived racial harassment directly affects job dissatisfaction and—through the job dissatisfaction equation—has indirect effects on the intention to leave the military equation. We assume that harassment has no direct effect on intended job change beyond its effect in reducing job satisfaction. This specification seems to us to be both intuitively appealing and consistent with the empirical literature demonstrating the close link between job satisfaction on the one hand and both intended and actual quits on the other.<sup>17</sup> The cross-sectional nature of our data precludes assessing the effect of racial harassment

<sup>17</sup>To investigate this identifying assumption, we reformulated the estimation model, allowing harassment to have both direct and indirect effects on intended job change. The direct effect of harassment on intended quits was insignificant in our specifications, and the overall results were substantially the same. (These results are not presented here, but are available upon request).

and subsequent job dissatisfaction on actual quitting behavior. Consequently, we follow others in this literature and focus instead on individuals' intentions regarding their future employment decisions (see Shields and Wheatly Price 2002b; Shields and Ward 2001; Laband and Lentz 1998; Gordon and Denisi 1995). Consistent with the behavior of workers generally (see Steel and Orvalle 1984), previous research also establishes the close link between military personnel's stated intentions regarding reenlistment and actual reenlistment behavior (see Chow and Polich 1980; Rostker et al. 1993).

Given this framework, we adopt the following model

$$\begin{aligned} H_{ij}^* &= X_{ij}\beta_1 + EO_{ij}\beta_2 + T_{ij}\beta_3 + I_{ij}\beta_4 + \varepsilon_{ij}^H \\ D_{ij}^* &= H_{ij}\delta_0 + X_{ij}\delta_1 + EO_{ij}\delta_2 + T_{ij}\delta_3 + R_{ij}\delta_5 + \varepsilon_{ij}^{JS} \\ Q_{ij}^* &= D_{ij}\lambda_0 + X_{ij}\lambda_1 + EO_{ij}\lambda_2 + R_{ij}\lambda_5 + \varepsilon_{ij}^O \end{aligned} \quad (1)$$

where  $i$  indexes individuals,  $j$  indexes military installations,  $H_{ij}^*$  is the propensity to perceive racial harassment,  $D_{ij}^*$  is the propensity to be dissatisfied with one's job,  $Q_{ij}^*$  is the propensity to report intending to leave the military, and  $H_{ij}$ ,  $D_{ij}$ , and  $Q_0$  are the observed harassment, job dissatisfaction, intended job change outcomes (defined below), respectively. Further,  $X_{ij}$  is a vector of background characteristics (race, gender, education, years of active-duty service, officer status and service) and a constant term. Variable definitions and descriptive statistics are provided in Tables A.2 and A.3 in Appendix, respectively.

Social norms constraining interracial interactions are associated with both offensive racial encounters and career-related racial discrimination (Antecol and Cobb-Clark 2007), so it seems reasonable to expect that such social constraints would also directly affect personnel's satisfaction with and intentions to remain in military employment. Consequently,  $EO_{ij}$  is a vector—common to all equations—of six measures of racial diversity and the nature of interracial relations on the base. More specifically,  $EO_{ij}$  includes an index of social constraints that captures the extent to which social norms, at a particular base, appear to limit personnel's ability to socialize with colleagues of a different race in mess halls, recreation facilities, or while off-duty. Higher values of the index are associated with fewer constraints. Moreover,  $EO_{ij}$  includes measures of the racial diversity (percent white) and quality of race relations (positive race relations and racial confrontation) on the base. Weighted, installation-specific means of the social constraint index, racial diversity, and race relations measures are calculated and then assigned to each individual. Using aggregated responses in this way allows us to capture the nature of race relations at installations generally and avoid the potential endogeneity associated with individuals' perceptions of these issues. Finally, harassment in, dissatisfaction with, and intentions to leave military employment are all likely to depend on the extent to which individuals engage in interracial interactions in their work environment. Consequently,  $EO_{ij}$  includes two individual-level indicator variables that capture the effects of working with or being supervised by personnel of a different race or ethnicity.

Previous research indicates that the incidence of harassment is related to the extent to which the organization is successful in creating a climate in which such behavior is not tolerated (Williams et al. 1999; Shields and Wheatly Price 2002a;

Antecol and Cobb-Clark 2006, 2007). Consequently, the propensity to report racial harassment is assumed to be a function of  $I_{ij}$  which captures the extent to which respondents know about and feel free to access anti-harassment enforcement measures on the individual's base. Training in equal opportunity issues in the previous 12 months ( $T_{ij}$ ) is assumed to influence not only reported harassment but also job satisfaction in general.

Following Clark and Oswald (1996), we also allow job satisfaction to depend on respondents' relative outside opportunities. While the previous literature has generally modeled relative opportunities in terms of comparison income (see, for example, Hamermesh 1977; Lévy-Garboua and Montmarquette 1996; Clark and Oswald 1996; Clark 1996, 1997; Heywood and Wei 2006; Shields and Wheatly Price 2002b), this is problematic in our case because our data do not provide sufficient detail about the skills, experience, training, etc., of our sample of active-duty personnel to allow us to estimate the wage that each would command in the civilian labor force. Furthermore, a significant component of compensation in the military takes the form of difficult-to-value, often non-taxable, in-kind benefits such as family housing, housing allowances, medical and dental, child care, professional training, commissaries, etc. (Melese et al. 1992; Kilburn et al. 2001), making simple comparisons of relative civilian/military monetary income difficult. Instead, we include in the job dissatisfaction equation information about respondents' views of the relative civilian/military opportunities for individuals of their race with respect to promotion, pay and benefits, fair performance evaluation, acquiring education and training, as well as quality of life generally, along with measures of individuals' family situation (marital status and the presence of dependent children;  $R_{ij}$ ). These measures are also included in the intentions to quit equation as previous evidence suggests that one's family situation and perceptions of the relative benefits of civilian life have a direct effect on intended job change independent of their effect on job satisfaction (Rostker et al. 1993). We believe that individual perceptions of the relative merits of a military career are important for understanding personnel's job dissatisfaction and future career plans. Thus, in our case, these measures are directly of interest, and we are able to avoid a common estimation problem associated with subjective measures that are intended to proxy for objective measures (see Hamermesh 2004).

Given the framework discussed above, we estimate a trivariate probit model as follows:<sup>18</sup>

$$\begin{aligned} H_{ij} &= 1\left(H_{ij}^* > 0\right) = Z_{ij}^H \beta + \varepsilon_{ij}^H \\ D_{ij} &= 1\left(D_{ij}^* > 0\right) = Z_{ij}^D \delta + \varepsilon_{ij}^D \\ Q_{ij} &= 1\left(Q_{ij}^* > 0\right) = Z_{ij}^Q \lambda + \varepsilon_{ij}^Q \end{aligned} \quad (2)$$

<sup>18</sup>All estimation is preformed in Stata 8 using a trivariate probit estimation routine developed by Cappellari and Jenkins (2003). This routine is based on the GHK smooth recursive simulator that has been found to be quite accurate and is often used in computing functions involving multivariate normal integrals (see Greene 2000, pp. 196–197). The square root of the number of observations is used to determine the number of draws used by the trivariate probit estimation routine.

where

$$\begin{aligned} Z_{ij}^H &= (X_{ij}, EO_{ij}, T_{ij}, I_{ij}) \\ Z_{ij}^D &= (H_{ij}, X_{ij}, EO_{ij}, T_{ij}, R_{ij}) \text{ and } \begin{pmatrix} \varepsilon_{ij}^H \\ \varepsilon_{ij}^D \\ \varepsilon_{ij}^Q \end{pmatrix} \sim N\left(0, \Sigma\right) \\ Z_{ij}^Q &= (D_{ij}, X_{ij}, EO_{ij}, R_{ij}) \end{aligned}$$

the variances of the error terms are normalized to 1.<sup>19</sup>

### 3.2 Identification

The above model is identified through the exclusion of institutional factors relating to anti-harassment enforcement ( $I_{ij}$ ) from the job dissatisfaction and intentions to quit equations and the exclusion of anti-harassment training ( $T_{ij}$ ) from the intentions to quit equation (see Table A.2 in Appendix). These restrictions have both theoretical and empirical appeal. On theoretical grounds, it is difficult to see why anti-harassment enforcement measures (i.e., awareness of and freedom to use harassment hotlines) would have a direct effect on job dissatisfaction or intentions to leave the military— independent of their indirect effect through the propensity to experience racial harassment. In particular, awareness that one's base has a harassment hotline and believing that there would be few repercussions for using it are unlikely to directly contribute to personnel's job satisfaction or career plans in any measurable way given that our job satisfaction and job change equations already include six detailed measures of an installation's equal opportunity climate including racial diversity, the quality of race relations, social constraints on interracial interactions, and interracial interaction in one's work environment.

It seems equally unlikely that anti-harassment training would directly factor into individuals' future career plans independently of these six measures of an installation's equal opportunity climate. After all, anti-harassment training is not particularly time intensive with 68.4% of personnel spending less than 4 hours in such training in the previous 12 months. Moreover, military employment is characterized by a great deal of mobility across job assignments and duty locations. Military personnel are, therefore, likely to be much less sensitive than other workers to the nature of their current work environment when making long-term career decisions. Given this, it seems reasonable to assume that anti-harassment training affects intentions to quit only indirectly through their effect on job satisfaction overall.

These are of course maintained assumptions; however, we explored the validity of these exclusion restrictions by using 2SLS to estimate a linear probability specification of equation (2). With two exceptions, the  $F$  statistic from both the first- and second-stage regression exceeds 10, indicating that weak instruments are

<sup>19</sup>This estimation framework also implicitly assumes that military personnel who are neither satisfied/dissatisfied (neither likely to remain/quit) are the same as military personnel who are satisfied (likely to remain). To investigate this, we re-estimate equation (2), replacing "dissatisfied" with "satisfied" [equaling one for individuals reporting that they are (very) satisfied with their job as a whole] and "quit" with "stay" [equaling one for individuals reporting that they are (very) likely to remain in military employment]. We also re-estimate equation (2), replacing dissatisfied with satisfied but leaving intentions to leave military employment. In both cases, the results did not substantially differ from those presented in the paper. Additional results are available upon request.

not a particular concern (see Staiger and Stock 1997).<sup>20</sup> Moreover, chi-squared over-identification tests provide no evidence that our excluded instruments are incorrectly omitted from the estimation equation (Hausman 1983). These results are presented in Table A.4 in Appendix.

#### 4 Racial harassment, job satisfaction, and intentions to quit

We begin by considering the determinants of racial harassment resulting from the trivariate probit estimation of equation (2). We then move on to consider the consequences of racial harassment for job satisfaction and intentions to remain in the military. For ease of interpretation, we report marginal effects (evaluated at means) and standard errors (calculated using the delta method).

##### 4.1 The determinants of racial harassment

Both blacks and Hispanics are significantly more likely to report experiencing racially offensive behavior and career-related discrimination than their white colleagues (see Table 2). This racial gap is particularly large for career-related discrimination with Hispanics being approximately 25% more likely and blacks being approximately twice as likely to feel that they have been the victims of career-related discrimination. In contrast, there are no significant racial differences in reports of threatening racial incidents once other characteristics are controlled for, whereas Asians are significantly less likely to report experiencing offensive racial behavior.

Racial diversity and the nature of interracial relations on an installation affect personnel's experiences of racial harassment. Higher levels of racial confrontation are associated with increased probabilities of both offensive and threatening encounters (as might be expected) but not career-related discrimination. This is consistent with psychological evidence that discrimination is often motivated by preferential treatment of in-group members rather than direct hostility toward out-group members (Brewer 1999). Social prescriptions regarding interracial interactions also lead to consistently higher rates of racially offensive behavior and career-related discrimination but are generally unrelated to reports of threatening racial incidents. Positive race relations decrease reports of threatening racial incidents but are unrelated to reports of offensive encounters or career-related discrimination. Nor do personnel report fewer incidents of racial harassment when they are stationed where there is a general feeling that it is possible to report harassment without repercussions. Together these results suggest that it is the degree to which race relations can be characterized as "poor" rather than the degree to which they can be characterized as "positive" that is most salient for military personnel's experiences of racial harassment.

Moreover, soldiers' propensity to experience racial harassment depends in part on the diversity they face in their day-to-day work environment, as well as on their

<sup>20</sup>The exceptions are the model of offensive racial encounters and career-related discrimination estimated for whites.

**Table 2** Determinants of racial harassment, job dissatisfaction, and intentions to quit the military (trivariate probit marginal effects and standard errors)

	Offense			Threat			Career		
	Harass	Dissatisfaction	Quit	Harass	Dissatisfaction	Quit	Harass	Dissatisfaction	Quit
Harassment									
	0.247 <sup>a</sup> (0.051)	0.216 <sup>a</sup> (0.078)	-0.029 (0.045)	0.183 <sup>a</sup> (0.076)	0.234 <sup>a</sup> (0.082)	0.168 <sup>a</sup> (0.072)			
Dissatisfaction									
	0.492 <sup>a</sup> (0.097)	0.513 <sup>a</sup> (0.086)	0.492 <sup>a</sup> (0.097)	0.513 <sup>a</sup> (0.086)	0.506 <sup>a</sup> (0.084)	0.506 <sup>a</sup> (0.084)			
Background Characteristics ( $X_{ij}$ )									
Race									
Black	0.072 <sup>a</sup> (0.016)	-0.044 <sup>a</sup> (0.014)	-0.030 <sup>b</sup> (0.016)	0.015 (0.011)	0.128 <sup>a</sup> (0.015)	-0.030 <sup>b</sup> (0.016)			
Hispanic	0.066 <sup>a</sup> (0.019)	-0.057 <sup>a</sup> (0.015)	-0.042 <sup>a</sup> (0.019)	-0.013 (0.009)	0.036 <sup>a</sup> (0.013)	-0.042 <sup>a</sup> (0.019)			
Asian	-0.066 <sup>a</sup> (0.025)	-0.030 (0.019)	-0.071 <sup>a</sup> (0.019)	0.011 (0.016)	-0.010 (0.015)	-0.071 <sup>a</sup> (0.019)			
Racial diversity and the nature of interracial relations on the base (EO <sub>ij</sub> )									
Social constraints	-0.024 <sup>a</sup> (0.010)	-0.014 (0.009)	-0.001 (0.010)	-0.004 (0.005)	-0.012 <sup>a</sup> (0.005)	-0.001 (0.010)			
Racial confrontation	0.287 <sup>a</sup> (0.083)	-0.086 (0.082)	-0.002 (0.075)	0.094 <sup>a</sup> (0.036)	0.026 (0.052)	-0.002 (0.075)			
Percent white	0.031 (0.076)	-0.009 (0.064)	0.070 (0.068)	0.053 (0.033)	0.041 (0.044)	0.071 (0.068)			
Positive race relations	-0.123 (0.102)	0.155 <sup>a</sup> (0.074)	-0.150 <sup>b</sup> (0.086)	-0.123 <sup>a</sup> (0.041)	0.148 <sup>a</sup> (0.055)	-0.152 <sup>b</sup> (0.086)			
Race uncommon	0.148 <sup>a</sup> (0.015)	-0.021 (0.021)	-0.016 (0.021)	0.050 <sup>a</sup> (0.014)	0.110 <sup>a</sup> (0.018)	-0.005 (0.021)			
Supervisor different race	0.021 (0.017)	0.004 (0.014)	0.002 (0.016)	0.017 <sup>b</sup> (0.010)	0.006 (0.013)	0.002 (0.016)			
Awareness and enforcement of Racial Harassment ( $I_{ij}$ )									
Awareness of hotlines	-0.090 <sup>a</sup> (0.013)			-0.049 <sup>a</sup> (0.007)					
Repercussions	0.107			-0.049					

Table 2 (continued)

	Offense			Threat			Career		
	Harass	Dissatisfaction	Quit	Harass	Dissatisfaction	Quit	Harass	Dissatisfaction	Quit
Training in equal opportunity issues ( $T_{ij}$ )	(0.079)			(0.042)			(0.048)		
Anti-harassment training	0.004	-0.053 <sup>a</sup>	-0.011	-0.011	-0.054 <sup>a</sup>	-0.011	-0.024 <sup>a</sup>	-0.050 <sup>a</sup>	-0.010
Family situation and relative civilian/military opportunities ( $R_{ij}$ )	(0.015)	(0.011)	(0.007)	(0.011)	(0.011)	(0.014)	(0.008)	(0.011)	(0.018)
Married	-0.012	-0.012	-0.043 <sup>a</sup>	-0.014	-0.014	-0.044 <sup>a</sup>		-0.014	-0.044 <sup>a</sup>
Children	(0.011)	(0.011)	(0.014)	(0.011)	(0.011)	(0.014)		(0.011)	(0.014)
	-0.004	-0.004	-0.040 <sup>a</sup>	-0.005	-0.005	-0.039 <sup>a</sup>		-0.006	-0.040 <sup>a</sup>
	(0.010)	(0.010)	(0.014)	(0.010)	(0.010)	(0.014)		(0.010)	(0.014)
Civilian opportunities better									
Promotion	0.041 <sup>a</sup>	0.041 <sup>a</sup>	-0.008	0.041 <sup>a</sup>	0.041 <sup>a</sup>	-0.011		0.040 <sup>a</sup>	-0.010
	(0.016)	(0.016)	(0.018)	(0.016)	(0.016)	(0.018)		(0.016)	(0.018)
Pay and benefits	-0.003	-0.003	0.019	-0.002	-0.002	0.019		-0.001	0.019
	(0.012)	(0.012)	(0.017)	(0.012)	(0.013)	(0.017)		(0.012)	(0.017)
Fair performance evaluations	0.017	0.017	0.043 <sup>a</sup>	0.018	0.018	0.040 <sup>a</sup>		0.012	0.041 <sup>a</sup>
	(0.016)	(0.016)	(0.021)	(0.016)	(0.015)	(0.020)		(0.016)	(0.020)
Education and training	0.085 <sup>a</sup>	0.085 <sup>a</sup>	-0.010	0.083 <sup>a</sup>	0.083 <sup>a</sup>	-0.013		0.083 <sup>a</sup>	-0.012
	(0.016)	(0.016)	(0.021)	(0.016)	(0.018)	(0.021)		(0.017)	(0.020)
Quality of life	0.035 <sup>a</sup>	0.035 <sup>a</sup>	0.066 <sup>a</sup>	0.037 <sup>a</sup>	0.037 <sup>a</sup>	0.065 <sup>a</sup>		0.036 <sup>a</sup>	0.065 <sup>a</sup>
	(0.012)	(0.012)	(0.013)	(0.012)	(0.012)	(0.013)		(0.012)	(0.013)
Show pride in yourself	0.117 <sup>a</sup>	0.117 <sup>a</sup>	0.077 <sup>a</sup>	0.116 <sup>a</sup>	0.116 <sup>a</sup>	0.070 <sup>a</sup>		0.111 <sup>a</sup>	0.071 <sup>a</sup>
	(0.018)	(0.018)	(0.027)	(0.019)	(0.019)	(0.027)		(0.019)	(0.028)

See Table A.2 in Appendix for variable definitions. Sampling weights used. Number of observations are 17,879. All equations also include controls for the following additional background characteristics: gender, education, years of active-duty service, officer status, service, and a constant. Standard errors are adjusted for clustering by installation.

<sup>a</sup> Significant at the 5% level

<sup>b</sup> Significant at the 10% level

awareness of EO issues generally. Specifically, personnel working in groups in which their own race is uncommon are generally more likely to report all forms of racial harassment. The race of one's supervisor and the racial make-up of the installation are less important in predicting perceived racial harassment. However, personnel do report more career-related discrimination and somewhat more threatening racial incidents when their supervisor is of a different race.

Finally, military personnel who report that their military installation has a hotline for reporting harassment are less likely to report experiencing racial harassment. Anti-harassment training is also associated with less career-related racial discrimination. This is consistent with previous evidence on the effects of anti-harassment training on reports of sexual harassment among female military personnel (Antecol and Cobb-Clark 2006).

## 4.2 The consequences of racial harassment: job satisfaction and intentions to quit

What are the consequences of racial harassment for job satisfaction and intentions to leave military employment? To place our results in context, we first examine some of the key determinants of job dissatisfaction and intentions to quit (see Table 2). We then consider the consequences of racial harassment on job dissatisfaction and intended job changes.

### 4.2.1 Key determinants of job dissatisfaction and intentions to quit

Interestingly, minority personnel report that they are less dissatisfied with and more likely to remain in their military employment. This is perhaps not surprising given the evidence that the military's history of social integration of and socioeconomic mobility for minority personnel (Ellison 1992; Moskos and Butler 1996). Moreover, personnel who work in groups where their own race is uncommon or who have a supervisor of a different race do not report significantly higher levels of job dissatisfaction. Thus, any impact of interracial interactions at work on job dissatisfaction seems to occur only indirectly by increasing the propensity to report being harassed. In fact, overall job dissatisfaction is lower when there are fewer social constraints limiting interracial interactions and race relations on the base generally are more positive. Thus, there is little evidence that the interracial nature of military life per se leads to increased levels of dissatisfaction or a failure to re-enlist.

Better civilian opportunities with respect to promotion, education and training, quality of life, and opportunity to show pride in oneself increase dissatisfaction with military employment. The latter two also increase intentions to leave the military as do better civilian opportunities with respect to fair performance evaluations. At the same time, perceptions of relative civilian/military pay do not significantly affect job satisfaction or affect future career plans. This is in contrast to other evidence that indicates that, while not necessarily the most important factor, satisfaction with pay is nonetheless quite important in determining the overall job satisfaction of civilian workers (Kristensen and Westergård-Neilsen 2004; Clark 2001).

Finally, military personnel who are married and who have dependent children are more likely to report intending to remain in the military, although they are no more satisfied with their military employment. This result is not surprising given that the

value of military benefits is substantially higher for personnel with dependents (Kilburn et al. 2001).<sup>21</sup>

#### 4.2.2 The effects of racial harassment and job dissatisfaction

We now turn to the consequences of racial harassment for job dissatisfaction and intentions to leave the military. Racial harassment affects job dissatisfaction directly and has indirect effects—through increased job dissatisfaction—on intentions to leave the military. We are interested in the magnitude of both effects. The effect of racial harassment on job dissatisfaction is given by

$$P(D_{ij} = 1 | H_{ij} = 1) - P(D_{ij} = 1 | H_{ij} = 0) \quad (3)$$

and these results are reported in the first row, second column of Table 2. As harassment has only direct effects on job dissatisfaction, its marginal impact can be calculated in the same way as the independent variables in the model. The effect of job dissatisfaction on intended job change can be calculated similarly and these results are reported in the second row, third column of Table 2.

At the same time, racial harassment has only indirect effects on intentions to quit, and so, we calculate the conditional probability of intending to leave the military when racial harassment does and does not occur. In other words, we calculate

$$P(Q_{ij} = 1 | H_{ij} = 1) - P(Q_{ij} = 1 | H_{ij} = 0) = \left[ \frac{P(Q_{ij}=1, D_{ij}=0, H_{ij}=1)}{P(H_{ij}=1)} + \frac{P(Q_{ij}=1, D_{ij}=1, H_{ij}=1)}{P(H_{ij}=1)} \right] - \left[ \frac{P(Q_{ij}=1, D_{ij}=0, H_{ij}=0)}{P(H_{ij}=0)} + \frac{P(Q_{ij}=1, D_{ij}=1, H_{ij}=0)}{P(H_{ij}=0)} \right] \quad (4)$$

and these results are reported in the first row, third column of Table 2.<sup>22</sup>

Racial harassment leads to increased job dissatisfaction. Specifically, military personnel are between 24.7 (offensive racial encounters) and 21.6 (threatening racial incidents) percentage points more likely to be dissatisfied with their jobs, a rate that is approximately 40% higher than non-harassed personnel (see Table 2). Moreover,

<sup>21</sup>Specifically, in addition to their basic pay, military personnel receive additional payments that depend, in part, on the number of dependents they have. Housing allowances and the value of medical benefits also explicitly vary with the number of dependents (Kilburn et al. 2001). Many components of military pay and benefits are nontaxable.

<sup>22</sup>Unlike the previous case that relies only on the univariate cumulative standard normal distribution, this result also necessitates the use of the trivariate cumulative normal distribution. We calculated standard errors by using a Cholesky decomposition of  $\Sigma$  (including the estimated correlations) to obtain  $p'$ . Using  $\kappa = \hat{\varphi} + p' \eta_{ij}$  where  $\hat{\varphi} = (\hat{\beta}, \hat{\gamma}, \hat{\delta}, \hat{\rho}_{12}, \hat{\rho}_{13}, \hat{\rho}_{23})$ , we randomly sampled  $\eta_{ij} (N = 1,000)$  from a standard normal distribution and recalculated the marginal effect using alternative values of  $\kappa$  in equation (4). Standard errors are based on the distribution of these results. These calculations were performed using Gauss 7.0.

military personnel are almost twice as likely to intend to leave the military if they are dissatisfied with their military jobs.<sup>23</sup>

By increasing job dissatisfaction, racial harassment also has indirect effects on personnel's intentions to leave military employment. Overall, threatening racial encounters increase intended job change by 18.3 percentage points, whereas career-related discrimination leads to an increased propensity to intend to quit of 16.8 percentage points. Thus, these forms of racial harassment have a substantial effect on individual's future career plans, increasing the rate of intended job change by roughly two thirds. At the same time, offensive racial encounters have no significant effect on military personnel's intentions to leave the military.

#### 4.3 The issue of endogeneity: single-equation results

Our results provide strong evidence that, accounting for the potential endogeneity resulting from unobservable individual- and job-specific characteristics associated with reporting harassment, job dissatisfaction and intended job change is quite important. In particular, we generally find a negative and significant correlation between the error terms of the racial harassment and job dissatisfaction equations (see Table A.5 in Appendix), and in all specifications, likelihood ratio tests reject at the 1% level the hypothesis that the estimated correlations in the error terms across equations are zero. This result suggests that unobservable factors simultaneously lead reports of racial harassment to be higher and job dissatisfaction to be lower. This might indicate, for example, that jobs with more interracial interactions (where harassment might be higher) are also jobs that are more inherently satisfying. Moreover, we often find a negative and significant correlation between the error terms of the job dissatisfaction and intended quits equations. At the same time, we generally do not find a significant correlation between the error terms of the racial harassment and intended quits equations. These results are consistent with Shields and Wheatly Price (2002b).

To gauge the impact of accounting for this endogeneity, we estimated single equation results of the consequences of racial harassment on job dissatisfaction and intentions to leave military employment. These results are presented in Table 3.<sup>24</sup> It is not surprising given  $\rho_{23}$  is frequently negative and significant that single-equation estimates of the effect of job dissatisfaction on intentions to leave military employment are smaller than those resulting from the simultaneous equation model. For example, single equation models indicate that job dissatisfaction is associated with a 22.4 percentage point increase in the probability of intending to leave the military. This is in comparison to estimated effects of between 49.2 and 51.3

<sup>23</sup>We also estimate the model separately by race. The same patterns are found across racial groups, although the link between job dissatisfaction and intended job change is generally strongest for black and Asian personnel and weakest (and often insignificant) for white and Hispanic personnel. Although we can only speculate, these differences may stem from racial and ethnic differences in non-military labor market opportunities. Results are available upon request.

<sup>24</sup>The conditional probability of harassment on intended job change in the single equation framework, using the chain rule, simply reduces to the marginal effect of racial harassment in the dissatisfaction equation times the marginal effect of job dissatisfaction in the intended job change equation. The standard errors are calculated using the "delta" method.

**Table 3** The effect of racial harassment on job dissatisfaction and intentions to quit the military (single equation probit marginal effects and standard errors)

	Offense		Threat		Career	
	Dissatisfaction	Quit	Dissatisfaction	Quit	Dissatisfaction	Quit
Harassment	0.028 <sup>a</sup> (0.011)	0.006 <sup>a</sup> (0.003)	0.063 <sup>a</sup> (0.022)	0.014 <sup>a</sup> (0.005)	0.091 <sup>a</sup> (0.015)	0.020 <sup>a</sup> (0.004)
Dissatisfaction		0.224 <sup>a</sup> (0.019)		0.224 <sup>a</sup> (0.019)		0.224 <sup>a</sup> (0.019)

Sampling weights used. Number of observations are 17,879. Additional independent variables as defined in Table 2. Standard errors are adjusted for clustering by installation.

<sup>a</sup> Significant at the 5% level

percentage points (depending on the underlying harassment measure) resulting from the simultaneous equation models. Furthermore, explicitly accounting for endogeneity also has large effects on the estimated consequences of harassment. Specifically, single equation models of the effect of threatening racial harassment on job dissatisfaction (intentions to leave military employment) indicate that harassment is associated with a 6.3 (1.4) percentage point increase in the probability of being dissatisfied with (intending to leave) military employment in comparison to our estimate of 21.6 (18.3) percentage points when we explicitly account for endogeneity (see Tables 2 and 3).

## 5 Conclusions

Increased racial and ethnic diversity in US employment seems inevitable in the face of the growing diversity in the population generally. This study adds to the literature on workplace diversity by examining the consequences of racial harassment for the job satisfaction and intended job change of personnel on active duty in the US military. Our results indicate that racial and ethnic harassment is common in the military. Approximately, two thirds of personnel on active-duty report experiencing offensive racial behaviors in the previous 12 months, whereas approximately one in ten report experiencing threatening racial incidents or career-related discrimination. This harassment has negative consequences for military personnel. Racial harassment of any type results in significantly more job dissatisfaction. Furthermore, threatening racial incidents and career-related discrimination heighten intentions to leave the military, although there is no significant effect of racially offensive behavior on the intended job change of active-duty military personnel. We have no theoretical or empirical reason to be concerned about the identification of our estimation model; however, as usual, these results rest on the specific maintained exclusion restrictions that underlie the model identification. Comparison of these results to those derived from single-equation models points to the importance of accounting for unobserved individual- and job-specific heterogeneity when assessing the consequences of racial harassment. Failure to account for this heterogeneity leads the estimated impact of racial harassment on job dissatisfaction and intended job change to be understated.

It is unclear whether the extent to which these specific patterns might also be extended to groups of civilian workers. The military has historically been relatively integrated when compared to other social institutions, and the nature of military employment leads to frequent interracial interactions as personnel—particularly young enlisted men and women—live and work in close proximity with others outside their own racial and ethnic group. At the same time, military personnel do not have the same protection from racial discrimination as the rest of the population, as court decisions have held that Title VII of the Civil Rights Act of 1964 pertains only to civilian employees of the armed forces (Smither and Houston 1991). Complaints about discrimination are addressed through military rather than civilian courts raising the potential for disparity in responses to racial harassment.

What is clear is that there are strong incentives for employers (both civilian and military) to develop effective policies for managing workplace diversity. Employers who minimize worker discord and successfully capitalize on the increased creativity and enhanced problem-solving ability of diverse workgroups are likely to find that they have a competitive edge. To the extent that racial harassment affects employers' ability to recruit and retain high-quality workers, it leads to higher labor costs.<sup>25</sup> Consequently, institutional arrangements that reduce the incidence of racial harassment are likely to be quite important. Our results indicate that training programs and the promotion of hotlines and formal procedures for addressing harassment issues—which may heighten awareness of racial harassment issues generally—are often associated with a significant reduction in the propensity to report experiencing racial harassment. Conversely, harassment is more prevalent at those installations where racial confrontation and social prescriptions barring interracial interactions are rife.

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<sup>25</sup>Similarly, Shields and Wheatly Price (2002b) conclude that racial harassment is a considerable problem for the National Health System in the UK.

## Appendix

**Table A.1** Racial harassment, job dissatisfaction, and intention to leave questions

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### Questions

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#### Harassment questions<sup>a</sup>

How frequently during the past 12 months have you been in circumstances where you thought military personnel (on or off duty, on or off installation) and/or service/DoD civilian employees (on or off installation)...

#### Offensive encounters

Made unwelcome attempts to draw you into offensive discussion of racial/ethnic matters?

Told stories or jokes which were racist or depicted your race/ethnicity negatively?

Were condescending to you because of your race/ethnicity?

Put up or distributed materials (for example, pictures, leaflets, symbols, graffiti, music, stories) which were racist or showed your race/ethnicity negatively?

Displayed tattoos or wore distinctive clothing which were racist?

Did not include you in social activities because of your race/ethnicity?

Made you feel uncomfortable by hostile looks or stares because of your race/ethnicity?

Made offensive remarks about your appearance (for example, about skin color) because of your race/ethnicity?

Made remarks suggesting that people of your race/ethnicity are not suited for the kind of work you do?

Made other offensive remarks about your race/ethnicity (for example, referred to your race/ethnicity with an offensive name)?

#### Threat/harm

Vandalized your property because of your race/ethnicity?

Made you feel threatened with retaliation if you did not go along with things that were racially/ethnically offensive to you?

Physically threatened or intimidated you because of your race/ethnicity?

Assaulted you physically because of your race/ethnicity?

#### Discrimination questions<sup>b</sup>

During the past 12 months, did any of the following happen to you? If it did, do you believe your race/ethnicity was a factor?

Mark one alternative for each item

#### Career

My current assignment has not made use of my job skills

My current assignment is not good for my career if I continue in the military

I did not receive day-to-day, short-term tasks that would help me prepare for advancement

I did not have a professional relationship with someone who advised (mentored) me on career development

I did not learn—until it was too late—of opportunities that would help my career

I was unable to get straight answers about my promotion possibilities

I was excluded by my peers from social activities

I was rated lower than I deserved on my last evaluation

My last evaluation contained unjustified negative comments

I was held to higher performance standards than others

I did not get an award or a decoration given to others in similar circumstances

I was taken to nonjudicial punishment or court martial when I should not have been

I was punished for something that others did without being punished

I was unable to attend a major school needed for my specialty

I did not get to go to short (1- to 3- day) courses that would provide me with needed skills

I received lower grades than I deserved in my training

I did not get a job assignment that I wanted because of scores that I got on tests

#### Job dissatisfaction question<sup>c</sup>

How satisfied are you with your job as a whole?

#### Intention to leave question<sup>d</sup>

Suppose that you need to decide whether to remain in the military. Assuming you could remain, how likely is it that you choose to do so?

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<sup>a</sup> Allowed responses to the harassment questions are never, once or twice, sometimes, often.

<sup>b</sup> Allowed responses to the discrimination questions are no (or does not apply), yes but my race/ethnicity was not a factor, yes and my race/ethnicity was a factor.

<sup>c</sup> Allowed responses to the dissatisfaction question are very dissatisfied, dissatisfied, neither, satisfied, very satisfied.

<sup>d</sup> Allowed responses to the quit question are very unlikely, unlikely, neither, likely, very likely.

**Table A.2** Independent variable definitions

Independent variables <sup>a</sup>	Definitions and notes
Racial diversity and the nature of interracial relations on the base ( $EO_{ij}$ )	
Social constraints	Index is based on respondents' reports that (1) they feel pressure from service members belonging to their own racial group not to socialize with members of other racial groups; (2) people feel free to sit wherever they choose in the dining halls regardless of race; (3) people feel free to use any recreation facilities regardless of race; (4) members of a racial group are treated as if they are "trouble" when they get together; and (5) personnel prefer to socialize with members of their own racial group when they are off duty. Responses to each question range from 1 (not at all) to 5 (to a very large extent). Questions 1, 4 and 5 are rescaled so that higher values reflect fewer constraints. An aggregate index ranging from 5 to 25 is created for each respondent by summing responses across the five items. Non-responses to individual items are assigned the mean value over the remaining items. Increases in the index indicate fewer constraints on interracial interactions
Racial confrontation	Based on an indicator variable equaling 1 if the respondent saw (or experienced) racial confrontation in the past 12 months and 0 otherwise. The weighted, installation-specific mean is assigned to each respondent
Percent white	Based on an indicator variable equaling 1 if the respondent is white and 0 otherwise. The weighted, installation-specific mean is assigned to each respondent
Positive race relations	Based on an indicator variable equaling 1 if the respondent to a (very) large extent believes race relations are good at his or her installation/ship and 0 otherwise. The weighted, installation-specific mean is assigned to each respondent
Race uncommon	Indicator variable equaling 1 if the respondent is in a work environment where members of their race are uncommon and 0 otherwise
Supervisor different race	Indicator variable equaling 1 if the race of the respondent's supervisor is different from his or her own and 0 otherwise
Awareness and enforcement of racial harassment ( $I_{ij}$ )	
Awareness of hotlines	Indicator variable equaling 1 if respondent believes the base has a racial harassment hotline and 0 otherwise
Repercussions	Based on an indicator variable equaling 1 if the respondent to a (very) large extent feels free to report racial harassment without the fear of repercussions and 0 otherwise. Weighted, installation-specific averages are assigned to each respondent
Training in equal opportunity issues ( $T_{ij}$ )	
Anti-harassment training	Indicator variable equaling 1 if respondent participated in a racial harassment training program in previous 12 months and 0 otherwise
Family situation and relative civilian/military opportunities ( $R_{ij}$ )	
Married	Indicator variable equaling 1 if the respondent is married and 0 otherwise.
Children	Indicator variable equaling 1 if the respondent has dependent children and 0 otherwise
Perceptions of opportunities	Six indicator variables based on the following. Respondent's were asked with respect to (1) promotions opportunities, (2) pay and benefits, (3) fair performance evaluations, (4) education and training opportunities, (5) quality of life and (6) chance to show pride in yourself: "Would you say that opportunities/conditions for people of your racial/ethnic group are better in the military, better in civilian employment, or that there is not any difference?" In each case, the indicator is coded as 1 if the respondent said civilian opportunities are better 0 otherwise

<sup>a</sup> In addition,  $X_{ij}$  includes background characteristics. In particular, indicator variables for race, indicator variables for gender, education, years of active duty service, officer status, and service.

**Table A.3** Sample means

	Mean	SD
Racial diversity and the nature of interracial relations on the base ( $EO_{ij}$ )		
Social constraints	19.717	1.013
Racial confrontation	0.296	0.126
Percent white	0.678	0.112
Positive race relations	0.664	0.118
Race uncommon	0.123	0.329
Race of supervisor different	0.416	0.493
Background characteristics ( $X_{ij}$ )		
White	0.700	0.458
Black	0.178	0.383
Hispanic	0.090	0.287
Asian	0.031	0.174
Male	0.855	0.352
High school	0.263	0.440
Some college	0.506	0.500
College	0.231	0.422
6 or less years of active service	0.449	0.497
7–11 years of active service	0.182	0.385
12–19 years of active service	0.294	0.456
More than 19 years of active service	0.076	0.265
Officer	0.194	0.396
Army	0.343	0.475
Navy	0.203	0.402
Marines	0.128	0.334
Air force	0.326	0.469
Awareness and enforcement of racial harassment ( $I_{ij}$ )		
Awareness of hotlines	0.567	0.495
Repercussions	0.627	0.096
Training in equal opportunity issues ( $T_{ij}$ )		
Anti-harassment training	0.657	0.475
Family situation and relative civilian/military opportunities ( $R_{ij}$ )		
Married	0.663	0.473
Kids	0.489	0.500
Civilian opportunities better		
Promotions	0.189	0.392
Pay and benefits	0.367	0.482
Fair performance evaluations	0.131	0.338
Educations and training	0.145	0.352
Quality of life	0.328	0.470
Chance to show pride in yourself	0.106	0.307
Number of observations	17,879	

See Table A.2 in Appendix for variable definitions. Sampling weights used.

**Table A.4** Validity of exclusion restrictions (2SLS linear probability models)

	Whites			Blacks			Hispanics			Asians				
	Offense	Threat	Career	Offense	Threat	Career	Offense	Threat	Career	Offense	Threat	Career		
First stage $F$ test	42.100 (0.000)	65.350 (0.000)	86.760 (0.000)	7.680 (0.001)	17.780 (0.000)	16.380 (0.000)	16.890 (0.000)	14.030 (0.000)	42.030 (0.000)	18.770 (0.000)	25.220 (0.000)	65.580 (0.000)	47.610 (0.000)	56.140 (0.000)
“Second” stage $F$ test	29.820 (0.000)	44.890 (0.000)	62.670 (0.000)	5.080 (0.000)	10.530 (0.000)	9.890 (0.000)	16.820 (0.000)	14.910 (0.000)	38.250 (0.000)	24.540 (0.000)	26.260 (0.000)	42.470 (0.000)	33.540 (0.000)	43.570 (0.000)
Overtentification test—	0.311	4.909	1.386	0.799	1.927	0.077	0.244	0.109	0.002	0.889	0.326	0.736	1.377	0.004
dissatisfaction														
Chi-square ( $df$ )	(0.577)	(0.027)	(0.239)	(0.371)	(0.165)	(0.782)	(0.621)	(0.741)	(0.963)	(0.912)	(0.346)	(0.391)	(0.241)	(0.947)
Overtentification test—quit	0.608	0.608	0.608	0.081	0.081	0.081	0.622	0.622	0.622	0.692	0.692	5.882	5.882	5.882
Chi-Square( $df$ )	(0.738)	(0.738)	(0.738)	(0.960)	(0.960)	(0.960)	(0.733)	(0.733)	(0.733)	(0.708)	(0.708)	(0.053)	(0.053)	(0.053)
Overtentification test—overall	0.920	5.517	1.994	0.880	2.007	0.158	0.866	0.732	0.624	1.580	1.017	6.618	7.259	5.887
Chi-square ( $df$ )	(0.821)	(0.138)	(0.574)	(0.830)	(0.571)	(0.984)	(0.834)	(0.866)	(0.891)	(0.872)	(0.664)	(0.085)	(0.064)	(0.117)

The first stage (harassment) regression includes controls for background characteristics, measures of racial diversity and the nature of interracial relations on the base, and a constant ( $X_{ij}$ ), institutional factors relating to anti-discrimination enforcement ( $I_{ij}$ ) and equal opportunity training ( $EO_{ij}$ ); the second stage (job satisfaction) equation includes controls for harassment ( $H_{ij}$ ), respondents’ views of the relative civilian/military opportunities for individuals of their race with respect to promotion, pay and benefits, fair performance evaluation, acquiring education and training, as well as quality of life, generally along with measures of an individuals’ family situation ( $R_{ij}$ ),  $X_{ij}$ , and  $EO_{ij}$ ; and the third stage (intentions to quit) regression includes controls for job satisfaction ( $D_{ij}$ ),  $X_{ij}$ , and  $R_{ij}$ . The first stage  $F$  test is based on the exclusion of  $I_{ij}$  from the job satisfaction and intentions to quit equations. Specifically, the first stage  $F$  test is based on the joint significance of the awareness of and freedom to use harassment hotlines in the harassment equation. The “second” stage  $F$  test is based on the exclusion of  $I_{ij}$  and  $EO_{ij}$  from the intentions to quit equation. Specifically, the “second” stage  $F$  test is based on the joint significance of the awareness of and freedom to use harassment hotlines in the harassment equation and equal opportunity training from the job satisfaction equation.

**Table A.5** Correlation coefficients

	Offense	Threat	Career
Rho12 (harassment/dissatisfaction)	-0.618 <sup>a</sup> (0.133)	-0.243 <sup>a</sup> (0.098)	-0.238 <sup>a</sup> (0.121)
Rho13 (harassment/quit)	-0.032 (0.028)	0.021 (0.036)	0.013 (0.035)
Rho23 (dissatisfaction/quit)	-0.352 <sup>a</sup> (0.149)	-0.450 <sup>a</sup> (0.136)	-0.439 <sup>a</sup> (0.130)
LR test of Rho12=Rho13=Rho23=0			
P value	0.000	0.000	0.000

Based on trivariate probit results presented in Table 2. Standard errors in parentheses.

<sup>a</sup> Significant at the 5% level.

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