Examining Discrimination and Bias in the Campus Racial Climate:

Multiple Approaches and Implications for the Use of Multiracial College Student Data

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Abstract

The practical problem of how to utilize multiple race data in quantitative higher education research collides with neo-conservative and liberal assumptions that a perceived growth in a post-civil rights multiracial population suggests racism no longer exists, and with concerns that multiracial data will undermine civil rights progress. Given that larger proportions of younger Americans are acknowledging multiple racial backgrounds, these individuals are likely to comprise increasing proportions of the college-going population. This study explores different ways of operationalizing race when analyzing manifestations of racism in the campus climate for multiracially- and monoracially-identifying college students in the United States. Specifically, it examines how different racial categorizations changes group characteristics, mean levels of discrimination, and the strength of predictor variables in multiple linear regression analyses. The data comes from the 2009-2010 Diverse Learning Environments survey piloted by the Higher Education Research Institute at UCLA, and includes 4,984 college students from 14 institutions across the U.S., 912 of which indicate two or more racial categories. When aggregated into a single group, students who mark two or more racial categories experience discrimination more frequently than students who only indicate a white background, suggesting mixed race students do not occupy an "honorary white" status as might commonly be assumed. However, double minority multiracial students have higher frequencies of discrimination than minority/white multiracial students, indicating that relative whiteness may result in comparative privilege for the latter group. Importantly, the strength and significance of predictors change for monoracially-constructed groups based on how multiracially-identifying students are classified. The analyses are framed within a new Integrative Model of Multiraciality for campus climate, which guides theoretical interpretations of the racial classification approaches and findings to

dispel post-racial and colorblind myths, address civil rights concerns, and provide implications for future research, policy, and practice.

Introduction

Although many Americans may long for a society free of racism in the post-civil rights era, the public must not assume race has become insignificant without critically examining multiraciality, and multiple-race data use in particular within historical and current contexts (Omi, 2001). Recently, liberals have used the American Multiracial Identity Movement, focused on Census 2000 data collection reform (R. Spencer, 2010), to support an ahistorical view of race and racism - that the United States is becoming a "post-racial" society. At the same time, civil rights groups have also viewed the multiracial movement as a threat to such monitoring and enforcement by potentially reducing the numbers of people counted in singular racial categories of color (Morning, 2005; Thornton, 2009). Neo-conservative constituents question why racial data should be collected at all (e.g. California's 2003 "Racial Privacy Initiative"; Pollock, 2004), advocating a colorblind initiative that would render impossible any monitoring of racial inequity (Omi, 2001). Now that the federal government collects multiple-race data, generational trends in the Census reveal that larger proportions of younger Americans are indicating multiple racial backgrounds (Lopez, 2003). Overall, the Census 2000 allowed people to mark more than one racial category for the first time; 2.4 percent of the population did so in 2000 (Lopez, 2003), and 2.9 percent in 2010 (U.S. Census Bureau, 2010). The generational increase is likely to be reflected in the college-going population (Renn, 2009). However, whether or not the trend reflects actual increases in offspring of interracial unions, or simply a growth in acknowledging mixed racial ancestry from recent generations or from the pre-civil rights era remains unclear. Regardless, the political intersection of civil rights interests in multiple-race data collection and

reporting with generationally increasing multiple-race identification raises questions about how to critically utilize multiracial data in college populations when examining discrimination.

Many discriminatory racial incidents continue to be reported in the media and more campuses are responding by initiating climate studies (e.g. the University of California). Research shows that student experiences and perceptions of the climate for diversity are linked to numerous educational outcomes including cognitive and socio-cognitive outcomes, values and attitudes, competencies for citizenship in a diverse democracy, transitions and adjustments to college for underrepresented students, retention, and degree completion (Hurtado, Alvarez, Guillermo-Wann, Cuellar, & Arellano, 2012). However, only one known study to date explicitly examines the campus climate for college students acknowledging mixed racial ancestry (Guillermo-Wann, 2010), while foundational multiracial research importantly explores mixed race "experiences" or identity (e.g. Renn, 2004). In addition, most climate-related studies including multiracial data are either qualitative (e.g. Nishimura, 1998; Sands & Schuh, 2004), or aggregate quantitative multiracial data into a single category for analysis (e.g. Brackett, et al., 2006; Laird & Niskodé-Dossett, 2010). The aggregation of all multiple-race data reflects the U.S. Department of Education's racial data reporting policy (DOE, 2007), despite concerns raised by educational researchers that multiracial aggregation is highly problematic for civil rights monitoring, among other matters (Lee & Orfield, 2006; Renn & Lunceford, 2004). Research has also illustrated that the presentation of racial group demographics changes based on how multiracial data is counted, as does the relative strength in relationship of independent variables to an outcome measuring smooth academic transition to college at predominantly white institutions (Inkelas, Soldner, & Szelényi, 2009). Therefore, the purpose of this study is to examine how different racial classifications of multiple-race data change the picture of racial

discrimination and bias as a measure of campus climate; and more importantly, how the predictive power of factors that influence the climate changes depending how you count multiracially-identifying students in more compositionally diverse environments.

Now that institutions can identify students who indicate multiple racial backgrounds, it is important to use the data to deepen an understanding of their experiences to then build inclusive campus communities where ethnic/racial group representation is increasing. Using different approaches to classify multiracially-identifying students will help educators understand within-group differences as well as differences between their monoracially-identifying peers in experiencing discrimination and bias. This in turn can inform research, policy, and practice, to improve the campus climate for all college students. In addition, the focus on experiencing discrimination in this study helps establish evidence of the more tangible interpersonal manifestations of oppression, while important studies of racial group inequities in outcomes (e.g. incarceration rates, education, health, etc.) reveal the more insidious systemic aspects of racism, which colorblind perspectives often dismiss as non-racial matters (Bonilla-Silva, 2010).

Using the understanding of race as a social construction as a guide (Omi & Winant, 1994), *multiracial* in this study means referencing, pertaining to, or ascribing a combination of two or more monoracially-constructed groups, "understood in [one's] day as … distinct races regardless of whether this intermixture stemmed from their parents' generation or farther back" (Morning, 2005, p. 42). This clarification is crucial because most racial groups in the U.S. actually have mixed racial ancestry from centuries past, particularly black, Latina/o, Native American, and white groups (Daniel, 2001; Davis, 1991; Feagin, 2006; Gomez, 2007; Morning, 2000, 2005; Nadal, 2009; Smith, 1999). Therefore, terms like *multiracially-identifying* and *monoracially-constructed* are used to avoid reifying race in an essentialist sense. That is, groups

are often ascribed race as a matter of categorization and are racialized as a matter of stereotype (Dovidio, Evans, & Tyler, 1986). This study attempts to interrogate the racial categories ascribed, and how different racial classifications of multiple-race data may alter representations of racial groups on college campuses.

Campus Climate for Diversity

Higher education research has been a site of investigating issues of race, discrimination, diversity, and equity for several decades. Much of the research examines the campus climate for diversity, which includes an institutions' history of inclusion or exclusion, the compositional diversity of students, faculty, and staff, individual and group psychological attitudes and values around diversity, informal and formal behavioral interactions including pedagogy (Hurtado, Milem, Clayton-Pederson, & Allen, 1998, 1999), and organizational structures, policies, and practices that embed privilege and oppression for different racial groups (Milem, Chang, & Antonio, 2005). The climate framework situates the college environment within socio-historical and policy contexts (Hurtado et al., 1998, 1999), and the interactive dynamics between the five dimensions and the broader contexts is essential to understanding the complexity of student experiences and outcomes across multiple social identities (Hurtado, Alvarez et al., 2012).

Despite the expansion of campus climate research, gaps still remain to be filled. For example, researching the behavioral dimension as an outcome often focuses on frequency of cross-racial interactions (e.g. Chang, Astin, & Kim, 2004) or positive quality (e.g. Mayhew, Grunwald, & Dey, 2005; Sáenz, Ngai, & Hurtado, 2007), but the meaning of cross-racial interaction becomes difficult to interpret with multiple-race data (C. Harper, 2007) and is therefore a less useful construct when examining campus climate for multiracial students. Additionally, longitudinal and multi-campus research has rarely examined hostile interactions of

the behavioral dimension as an outcome because climate questions were not included on national surveys before the early 1990s, and very few early climate studies were able to disaggregate multiple racial groups (for a synthesis, see Hurtado et al., 1998, 1999). Now that a new climate instrument is nationally available, and given that few recent studies examine a hostile campus climate as an outcome across multiple groups in compositionally diverse environments, this study focuses on discrimination and bias as a measure of the hostile quality of the behavioral dimension across racial groupings to begin to fill some of these gaps.

In the one known multiracial climate study to date, all fourteen interview participants detail *multiracial microaggressions* across multiple dimension of the climate (Guillermo-Wann, 2010). Multiracial microaggressions are "daily verbal, behavioral, or environmental indignities…[that] involve individuals' mixed-heritage status and are experienced by multiracial persons of any racial makeup or phenotype" (Johnston & Nadal, 2010, p. 126). These microaggressions are visible manifestations of *monoracism*, "a social system of psychological inequality where individuals who do not fit monoracial categories may be oppressed on systemic and interpersonal levels because of underlying assumptions and beliefs in singular, discrete racial categories" (p. 125). Multiracial microaggressions include exclusion or isolation, exoticization and objectification, assumption of monoracial or mistaken identity, denial of multiracial reality and experiences, and pathologizing of identity or experiences (Johnston & Nadal, 2010). In the climate study (Guillermo-Wann, 2010), multiracial micoraggressions span interactions with peers and faculty, marginalizing pedagogy and curriculum, and frustration with how campus systems maintain singular monoracial designations, among others; it will be important to explore the relationship of practices intended to develop more inclusive environments with these

students' experiences of discrimination. Many microaggressions exhibit a more subtle nature like the measure of discrimination and bias in the current study, although others are quite blatant.

In a rare example, Hurtado (1994) examines an aspect of the behavioral dimension of the climate by modeling experiences of discrimination for high achieving Latina/o college students. Several items contribute to the explained variance in the dependent measure. The compositional diversity of the campus is important, as having a higher Latina/o population on campus is indicative of experiencing less discrimination, although it is more prevalent at larger institutions. Psychological measures also play a role, including attitudes and values such as having the goal of helping to promote racial understanding and acknowledging that inequalities in society are systemic. As for student behaviors, discussing racial issues is positively related to experiencing discrimination, whereas students who prefer to date non-Hispanic white peers indicate less discrimination. Interestingly, student-centered and inclusive environments also prove significant in Latina/o students' experiences of the racial climate. Perceptions that faculty do not care about students or the institution, that administration is not open or inclusive, and that most students know little about their culture also predict of higher levels of discrimination. Other aspects of the general climate, such as the extent to which faculty are caring and administration seems open, contribute to lower feelings of hostility in the racial climate (see also Hurtado, Alvarez et al., 2012). Similarly, a relationship between the general climate and the climate for diversity is suggested by studies of multiracial college student experiences around race.

Multiracial College Student Experiences and Race

Although most studies of multiracial experiences do not use campus climate frameworks, their findings could be considered illustrative of the behavioral and psychological dimensions of campus climate. Some studies focus on multiracially-identifying students, while others

tangentially include them as an aggregate category for racial group analysis. Literature documents these students' experiences of prejudice (Brackett, et al., 2006), identity salience and discrimination (Hurtado, Ruiz, & Guillermo-Wann, 2012), low peer, faculty, and institutional support (Laird & Niskodé-Dossett, 2010), and challenges in social integration in informal interactions (Sands & Schuh, 2004). Such findings may have implications for mixed race students' psychological sense of belonging (Johnson, et al., 2007; King, 2008; Nishimura, 1998; Renn, 2000, 2003, 2004), which can influence considerations of actually leaving an institution (Sands & Schuh, 2004). Extant research challenges assumptions that multiracial persons are better adapted to predominantly white campuses and may not experience discrimination.

Three quantitative studies show that, when analyzed as an aggregate group, multiracially-identifying college students (i.e. marked two or more races) indicate higher levels of prejudice or discrimination than some or all of their monoracially-identifying peer groups (i.e. marked only one race) (Brackett et al., 2006; Hurtado, Ruiz et al., 2012), and lower levels of institutional support and supportive relationships with faculty and peers (Laird & Niskodé-Dossett, 2010). First, in a single-institution study in the south, biracial black/white students report more experience with prejudice in interactions on campus in general, and with peers and faculty specifically, compared to their monoracially-identifying black and white peers (Brackett et al., 2006). Second, in a fourteen-institution study of racial identity salience, multiracially-identifying students thought about their race less often than all other groups of students of color and more than white students, but experienced higher levels of discrimination and bias than Latina/o and white students (Hurtado, Ruiz et al., 2012). This is interesting given that racial centrality, the dimension of salience measured by Hurtado, Ruiz et al. (2012), was predictive of perceived racial discrimination in a study of African American college students (Sellers &

Shelton, 2003). One would therefore expect to find lower levels of experiencing discrimination for multiracially-identifying students given their lower identity centrality, however this was not the case (Hurtado, Ruiz et al., 2012). Third, in a national study of first-year college students and seniors, multiracial first-years and seniors with the lowest levels of interaction across difference also report the lowest perceptions of institutional support of all racial groups (Laird & Niskodé-Dossett, 2010). Unfortunately, the gains for first-year multiracial students who have a high level of interaction across difference still result in the second lowest levels of institutional support, slightly above Asian Americans. In addition, multiracial and African American students who specify lower levels of interaction across difference indicate the least supportive relationships with peers and educators, in which being multiracial is the strongest predictor for seniors, followed by interactions across difference. When analyzed as an aggregate group, multiracially-identifying students indicate high levels of prejudice and discrimination, and low levels of perceived peer, faculty, and institutional support.

In sum, key factors related to a negative behavioral dimension of the campus climate include one's indicated racial group, compositional diversity, attitudes regarding diversity and equity, racial centrality of identity salience, relationships with peers and educators, and interactions across different social identity groups (Brackett et al., 2006; Hurtado, 1994; Hurtado, Ruiz et al., 2012; Laird & Niskodé-Dossett, 2010; Sellers & Shelton, 2003). Contrary to liberal racial assumptions, aggregating multiracially-identifying college students provides evidence that multiracial students as a group experience a poor campus climate (Brackett et al., 2006; Laird & Niskodé-Dossett, 2010; Hurtado, Ruiz et al., 2012); however, these studies only operationalize race in one way. Additional research examines methods in which collecting and reporting multiple-race data may change results for all groups.

Racial and Ethnic Categories in Data Collection and Reporting

The U.S. Bureau of the Census has been collecting data on race since the 18th century (Renn & Lunceford, 2004), and higher education data collection has generally followed their lead (Renn, 2009); however, racial data collection practices vary from reporting (Inkelas et al., 2009), and concern Latina/o data in particular. Racial data collection categories have transformed over time (Renn & Lunceford, 2004); significant changes in the U.S. Census occurred in the civil rights era, and in 1977 when the Office of Management and Budget (OMB) issued Directive 15 establishing four federally recognized racial categories and the option to ask "Hispanic" heritage as a separate yes/no question or as a fifth racial category. In 1997, the OMB created five racial categories with "Hispanic or Latino" heritage as a sixth racial category or as ethnicity in the two-part question, and allowed for persons to indicate more than one racial category. Despite educational researchers' advocacy that higher education collect Hispanic/Latino data as an equal sixth category under OMB's option to do so (Renn & Lunceford, 2004), in 2007, the U.S. Department of Education (DOE) institutionalized the two-part Hispanic/Latino ethnicity question (DOE, 2007). Complicating matters, how multiracial individuals indicate their racial and ethnic backgrounds vary based on the options provided (Johnson et al., 1997). The national survey used for this study collects Latina/o data as one of several racial categories.

Operationalizing (Mixed) Race in Educational Research

Educational research utilizes six primary ways of reporting, or classifying, quantitative multiple-race data, four of which are methodologically sound for this study. They are the OMB multiracial disaggregation, DOE/IPEDS multiracial aggregation, least prevalent monoracial categorization, and racial group status. Two additional approaches are not fit for this analysis -

fractional assignment and multiple group assignment. This study is an improvement to Inkelas et al. (2009) by including the racial group status approach, using data from compositionally diverse institutions in which multiple-race data comprises nearly one fifth of the sample, and focusing on the outcome measure that has implications for improving campus climate. This section describes the four viable approaches to operationalizing race with multiracial data for the present study and evaluates select empirical applications.

OMB approach: multiracial disaggregation (MD). The OMB reports at minimum the five categories established in 1997, which are American Indian or Alaska Native, Asian, black or African American, Native Hawaiian or Other Pacific Islander, and white; Hispanic/Latino is an optional group that trumps other categories when reported (Lopez, 2003; Renn & Lunceford, 2004). The OMB additionally reports black/white, American Indian /white, Asian/white, black/American Indian, and any combination that comprises one percent or more of the population, with a total of sity-three possible combinations (Inkelas et al., 2009; Lopez, 2003; Renn & Lunceford, 2004).

Inkelas et al. (2009) examine how operationalizing race in multiple-race data changes regression coefficients predicting a smooth academic transition at a predominantly white institution. They use survey data from the 2007 National Study of Living-Learning Programs (NSLLP), which collects data for Latina/os as one of six racial categories. Only two percent of the sample marked multiple racial categories. For monoracially-grouped students, multiracial disaggregation seemingly produces similar results to categorizing multiracial students in the least prevalent racial category compared to the combination groups (e.g. black/white); however, statistical testing to verify significance would have violated key assumptions, making that level

of verification untrustworthy. Even so, multiracial disaggregation is viable for the current study, despite that DOE racial data reporting requirements differ.

DOE/IPEDS approach: multiracial aggregation (MA). The second approach follows the DOE protocol, which includes the five OMB racial groups, a sixth Hispanic group, and all students who indicate two or more groups, excluding Latina/os, as a seventh aggregate group (DOE, 2007; Inkelas et al., 2009; Lee & Orfield, 2006; Lopez, 2003). Higher education's Integrated Postsecondary Education Data System (IPEDS) follows the DOE reporting guidelines (Renn, 2009; Renn & Lunceford, 2004).

Three known studies examine multiracial aggregation using the DOE/IPEDS approach. Using K-12 and Census data respectively, Lee and Orfield (2006) and Lopez (2003) find that racial group numbers change based on racial classification, region, and whether or not Latina/os are classified into an aggregate multiracial group under the two-part data collection question. Lee and Orfield also find that achievement test scores for monoracially-classified groups in the 4^{th} and 8^{th} grades appear to improve or fall simply by changing who is counted, which is expected of the outcome in the present study. In regression analyses, the multiracial aggregation approach also produces some similar results for multiracial students as the disaggregated combination groups (Inkelas et al., 2009). As the current policy governing higher education racial data reporting, this study compares multiracial aggregation with other approaches.

Least prevalent monoracial category (LPMC). The third approach assigns students who mark multiple racial categories to the group that is least prevalent in the data, which in a small sample, produces similar regression results for monoracial categories as multiracial disaggregation and aggregation (Inkelas et al., 2009). An advantage is that it increases the numbers for small groups of color, however it changes monoracially-classified group

characteristics and disregards multiraciality (Inkelas et al., 2009). It is an approach that is often used to count every black or Native American student regardless of multiple identifiers, for example, because their numbers are so low on some campuses. While this approach may be well meaning, some combinations of multiracial students may be more advantaged than those monoracially-constructed groups, which have an embedded assumption of the "one drop rule" in the nation's exclusionary racial history. I further detail the assumptions underlying each of the approaches in explaining the theoretical model that guides the study.

Racial group status (RGS). Because racial groups experience varying levels of dis/advantage and different ascriptions to their social identity, the last approach classifies students with a dominant white or Asian American identity as high social status groups, those with a primarily black or Latina/o identity as low status, and those who identify with multiple groups, as part *x*/part *y*, or as multiracial, as having multiracial status (Binning, Unzueta, Huo, & Molina, 2009). However, this poses two major problems. First, Binning et al. (2009) note that combining Asian American and white students may perpetuate the model minority myth, despite a plethora of research countering the myth (Chang, Park, Lin, Poon, & Nakanishi, 2007). Second, students who identify with multiple racial groups are aggregated with those who identify primarily as multiracial, which are distinct identity patterns (Renn, 2004). Despite these problems, Binning et al. (2009) find that the multiracial status group reports equal or higher outcome levels of well-being and social engagement than multiracial students who identify primarily with only one racial group, regardless of its status. Interestingly, outcomes for the high and low racial status groups do not differ significantly, as would have been expected by the theory. Perhaps operationalizing race from a racial group status perspective may be more

insightful in exploring differences *within* a multiracial population, which the present study examines.

In sum, educational researchers prefer the OMB multiracial disaggregation collecting and reporting options to the DOE/IPEDS aggregation practices, and caution that having the Latina/o category trump all other categories in reporting is a problematic practice (Lee & Orfield, 2007; Lopez, 2003; Renn & Lunceford, 2004; Renn, 2009). Regardless of how data are collected, preserving multiple-race data may be the best compromise to allow it to be used in different ways for different purposes, acknowledging the limitations of each approach (Inkelas et al., 2009; Renn, 2009). Together, these studies demonstrate that race is a malleable social construct, highlighted here by how researchers classify multiracial data in operationalizing race, but that it has real consequences in students' lived experiences as seen in outcome measures. In short, research suggests that how you count multiracially-identifying students matters.

Applying the Integrative Model of Multiraciality

This study uses the Integrative Model of Multiraciality (IMM) for campus climate to interpret different operationalizations of race for understanding the quality of students' climate experience (Guillermo-Wann & Johnston, 2012). The IMM links racial formation theory, theories of multiple racisms, and monoracism to climate processes in assessing multiracial college students' quality of climate experience. To do so, it also draws upon aspects of multiracial identity development theory (e.g. Renn, 2004) and critical race theory (e.g. Bell, 1980). This study tests part of the IMM regarding how indicated racial ancestry directly informs racial classification, which is hypothesized to paint different pictures of climate (Guillermo-Wann & Johnston, 2012). It also offers theoretical implications of the classification approaches, discussed in this section first for monoracial groups (e.g. black), then for multiracial groups (e.g.

black/Arab American). Although utilizing any racial classification scheme may essentialize students' experiences of the campus climate, focusing on how different approaches reveal within and between group differences affirms the social construction of race while illustrating how discrimination plays out in actual lived experience for all students.

The IMM's Theoretical Implications for Monoracially-Constructed Groups

The IMM offers theoretical interpretations for each of the four racial classification approaches for monoracially-constructed groups. First, when Latina/o data is collected as one of several racial groups as in this study, rather than in the two-part ethnicity question, multiracial disaggregation and aggregation look identical for all of the monoracially-constructed groups, and share many implications. Both may reflect interest convergence (Bell, 1980), in which white parents want their biracial children to be able to be categorized as something other than of Color, particularly not as black (J. Spencer, 1997); however, multiracial aggregation does so in the exact way feared by civil-rights groups (Lee & Orfield, 2006; Renn, 2009). Both approaches may also reflect interest convergence with monoracial group interests that may not want to "dilute" a sample to maintain strict group boundaries, thus excluding multiracial data - a multiracial microaggression (Johnston & Nadal, 2010). Both also reduce monoracial group numbers, resulting in a loss of statistical power in small samples (Inkelas et al., 2009). Second, the least prevalent monoracial category approach can bolster sample sizes, but in doing so, may suggest interest convergence with monoracial interests if groups "need" them for their purposes, or may inclusively reflect less rigid group boundaries (Guillermo-Wann & Johnston, 2012). Third, racial group status can test traditional racism that privileges whiteness amongst racial groups (Bonilla-Silva, 2010), but if groups are not combined (e.g. Binning et al., 2009), results will look the same as multiracial disaggregation and multiracial aggregation.

The IMM's Theoretical Implications for Multiracially-Constructed Groups

The IMM also informs propositions for creating multiracial groups within each racial classification approach. First, multiracial disaggregation and aggregation maintain a false purity of racial groups (Guillermo-Wann & Johnston, 2012), and assume all mixed race students are not legitimate members of their respective racial groups (Johnston & Nadal, 2010). Multiracial disaggregation, in a sense, transforms each of the combination groups into another racial group, minimally challenging monoracial constructions of race (Guillermo-Wann & Johnston, 2012). Beneficially, it reflects students' preferred racial identification (if not identity), reveals results for combination groups providing insight into their unique experiences, and delivers the greatest level of clarity in research (Inkelas et al., 2009). Multiracial aggregation, on the other hand, glosses over complexities amongst students marking two or more races (Inkelas et al., 2009). However, at times, a multiracial category may be useful for examining manifestations of monoracism (Johnston & Nadal, 2010), and may be informative in conjunction with approaches that examine heterogeneity within multiraciality. Second, the least prevalent monoracial category approach also masks differences in characteristics within each group (Inkelas et al., 2009), and maintains monoracial norms. Third, a multiracial group status approach in which double minority and minority/white groups are compared can test relative white privilege *within* multiraciality, however, this severely overlooks the racial group status of students' minority background(s), so it may be more beneficial to compare with the multiracial disaggregation combinations.

Overall, no classification approach offers a clear theoretical advantage; rather their use depends upon the aims of a study. As the IMM suggests, the incorporation of monoracially-identifying students and consideration of traditional racisms in this study demonstrates a

commitment to social justice for both multiracially- and monoracially-identifying students (Guillermo-Wann & Johnston, 2012) by examining a broader range of experiences.

Methodology

This study examines undergraduates' experiences of discrimination and bias in the campus climate, focusing on how classifying multiple-race data in different ways alters representations of all racial groups. The guiding questions are: In college student data accounting for multiple racial backgrounds, how do different racial classification approaches change 1) sample sizes, and 2) mean differences in discrimination and bias between racial groups? 3) What key factors may be related to discrimination and bias across all racial groups and classification approaches, and which may be unique? 4) Does the predictive power of common explanatory variables for discrimination and bias change between racial groups under different classification approaches? If so, how?

Data Source and Sample

The data come from the Diverse Learning Environments (DLE) survey 2009-2010 pilot administration conducted by the Higher Education Research Institute (HERI) at the University of California, Los Angeles (UCLA). Three community colleges, six public four-year, and five private four-year institutions participated, with students in their first through senior years and a small proportion of students indicating other statuses. The final sample size was 4,984, with 912 (18.3 percent) students marking two or more racial backgrounds (see Table 1 for racial group proportions based on the approaches). Racial data collection did not strictly follow DOE or IPEDS policy, but rather included the following aggregate groups: American Indian or Alaskan Native, Arab American, Asian American or Pacific Islander (AAPI), black, Latina/o, white, and Other. About half the sample had family incomes below $50,000 per year (51.7 percent, *n* =

2,558), and 47.7 percent (n = 2,375) did not have a parent who had earned a bachelor's degree. One-third of students were age 25 or older (n = 1667), with the oldest being age 81. The sample was diverse in many regards, including students at various institutional types.

Variables

Dependent measure: discrimination and bias factor. The outcome measure, Discrimination and Bias, measured the frequency of students' experiences with more subtle forms of discrimination, and was validated for its factor structure and reliability using confirmatory factor analysis (Hurtado, Arellano, Cuellar, & Guillermo-Wann, 2010). It was created by weighting items by their loading, and rescaling the factor from 0 to 100 with a mean of 50. The items, loadings, and reliability are listed in Appendix A, and include items such as "witnessed discrimination," and how often students have experienced different forms of discrimination at their institution. It did not specifically assess racial discrimination, but given the notion of intersectionality in oppressions (Adams et al., 2000; Delgado & Stefancic, 2001; Garner, 2011; Lorde, 1993; Omi & Winant, 1994), employed a more inclusive measure that allowed for any form of discrimination to be measured and analyzed here across racial groups.

Independent measures. Several independent measures of the college environment were of particular interest in relation to discrimination and bias (see Appendix A for all variables). Controls for student demographics and compositional diversity were also included, and all factors were previously validated for their structure and reliability in the same fashion as the dependent measure (Hurtado et al., 2010).

Measures of students utilizing institutional-level practices of the organizational dimension of climate warranted examination (Guillermo-Wann, 2010); they were anticipated to be associated with experiences of discrimination, likely by creating awareness of it and/or

providing support, such as taking an ethnic studies class. More generally, a *curriculum of inclusion* (α = .854) measured the number of courses a student took that included materials and pedagogy addressing diversity, bias, privilege and oppression along any social identity (Hurtado et al., 2010). Similarly, students' participation in campus-facilitated *co-curricular diversity activities* (α = .903) measured involvement with programs focused on diversity issues (Hurtado et al., 2010).

Several individual-level measures of climate were also examined, along with a general climate indicator. Behaviorally, more frequent in-depth conversations outside of class on issues related to racial or ethnic diversity (Hurtado, 1994; Laird & Niskodé-Dossett, 2010), as well as *negative cross-racial interactions* (α = .769) (Laird & Niskodé-Dossett, 2010; Sands & Schuh, 2004), were expected to be associated with greater frequencies of discrimination and bias. Psychological measures included students' racial identity salience, which was positively correlated with discrimination and bias in Hurtado, Ruiz et al. (2012). However, a negative relationship was hypothesized for perceptions of *institutional commitment to diversity* (α = .873) (Hurtado, 1994), as well as a general climate measure (Hurtado, 1994; Laird & Niskodé-Dossett, 2010) of students' sense of interpersonal validation by faculty and staff (Hurtado, Cuellar, & Guillermo-Wann, 2011; Rendón, 1994). Most independent measures reflect ways educators might pro-actively improve campus climate along all social identities (Hurtado, Alvarez et al., 2012).

Analysis

To address the first research question, frequencies of students in each racial group followed the four racial classification approaches - multiracial aggregation (MA), multiracial disaggregation (MD), least prevalent monoracial category (LPMC), and multiracial group status

(MGS). Monoracial group numbers were observed across the first three classifications. Differences within the multiracial student data were then examined between multiracial aggregation, multiracial disaggregation combination groups, and multiracial group status.

To address the second research question, one-way ANOVAs with Games-Howell post-hoc tests on the discrimination and bias factor compared mean scores between racial groups for each of the classification approaches. The Games-Howell post-hoc test accounted for differences in sample size across groups as well as unequal variances (Games & Howell, 1976; Toothaker, 1993). However, it was not possible to compare mean factor scores of different versions of each racial group to "itself" across the approaches because samples were not independent, nor were they matched pairs; doing so would have violated the statistical assumption of independence (Agretsi & Finlay, 1997).

For the third and fourth research questions, forced-entry blocked linear regression was used to examine relationships between independent measures and the discrimination and bias factor across racial groups for each classification approach. To address the third research question, the significance and strength of relationship of independent variables to the outcome were examined to identify common predictors across most groups and approaches. Variables that were uniquely significant were also noted. To address the fourth question, unstandardized coefficients for shared explanatory variables were tested across racial groups within each classification approach to see if the representation of racial groups changed in relation to one another. The equation used was $(b1 - b2)/\sqrt{se1^2 + se2^2}$ (Clogg, Petkova, & Haritou, 1995). Significance tests for unstandardized coefficients across classification approaches could not be conducted because again, doing so would have violated the assumption of independence. For both questions, ideally, hierarchical linear modeling would have accounted for the nested

structure of the data; however, having only fourteen colleges restricted the model to using only one level-two measure, and that variable (percentage of students of color) had no variability within groups at the institutional level, making regression the appropriate method.

Limitations

There were several limitations to this study. First, the data were cross-sectional, so analyses were correlational in nature; causal inferences could not be drawn. Second, the nature of the data collection did not capture mixed race students who only marked one racial category, so the analyses only re-classified students who indicated multiple racial backgrounds. Similarly, data did not capture if students had a preferred racial identity, such as multiracial, so differences in ways multiracial students identify was not accounted for (e.g. Binning et al., 2009; Renn, 2004). Third, sample sizes for several racial groups were too small for regression, so were excluded, with the exception of the double minority multiracial group, which had 114 cases (Table 1); caution should be used when interpreting those regression results. Fourth, the positioning of multiraciality within diversity practices was not collected by this or any national survey; in addition, who multiracially-identifying students consider racially different when reporting cross-racial interactions is difficult to interpret (C. Harper, 2007). Despite these limitations, the study provides a nuanced analysis of discrimination and bias across racial groups, addresses critical issues in operationalizing race and multiraciality, and informs issues for improving the campus climate for diversity for all students.

Results

The ways in which researchers classify multiracial data paint different pictures of racial groups' climate experiences. Results illustrate changes in sample size, significant differences in mean frequencies of discrimination and bias for some groups, and similarities and differences

across approaches regarding regression coefficients' relationships to the outcome. Sample size and mean differences are addressed briefly, followed by a discussion of regression results. The study demonstrates that the way researchers racially classify college students who indicate multiple racial backgrounds can modify results and their implications, but that several factors share significant relationships to discrimination and bias despite how multiracially-identifying students are classified, providing overarching guidance for improving the climate for all students.

Changes in Sample Size

Ensuring adequate sample sizes when comparing racial groups is a practical concern in quantitative research, and different racial classification approaches provide various levels of nuance. As expected, using the least prevalent monoracial category (LPMC) approach renders the largest groups overall, and multiracial aggregation (MA) and multiracial disaggregation (MD) schemes produce identical samples for monoracially-identifying students (Table 1). MA reveals that 912 students marked *two or more* racial groups. Of those, multiracial group status (MGS) shows 87.5 percent (n = 798) indicated both white and non-white groups, and 12.5 percent (n = 114) marked only categories of color. In its more detailed approach, MD displays racial combination groups similar to OMB's approach, as well as 250 students indicating "Three or More" racial groups that were not classified into the OMB-like combinations. The approaches provide options for various research conditions and inquiries, and show how classifications can construct racial groups that differ in content and size, if not always by name; communicating how multiracial data is classified can help clarify populations in a sample in any study.

Mean Differences in Discrimination and Bias

Like sample size, tests for mean differences in discrimination and bias across racial groups also vary by classification approach, displayed in Table 2. The point in testing group

differences is to show how group levels of discrimination differ in relationship to one another based on how multiracial data is classified. Not surprisingly, Table 2 reveals that most monoracially-designated groups only show significant mean differences between each other when multiple-race data is included in each group using the LPMC approach. Although differences in sample size are taken into account, the fewer number of groups can result in greater sensitivity to significance levels. But interestingly, multiracial AAPI/white students, as well as both aggregate multiracial groups, show significantly higher mean levels of discrimination and bias than some monoracial groups under the MA and MD approaches. In fact, monoracially-classified AAPIs are the only group that shows mean differences across multiple classification approaches, and the mean is consistently higher. Results actually

Table 1

Racial Group Sizes and Sample Proportions by Classification Approach, N = 4984

Racial Classification	Multiracial Aggregation	Multiracial Disaggregation	Least Prevalent Monoracial	Multiracial Group Status
American Indian	35 (0.7%)	35 (0.7%)	282 **(5.7%)**	
Arab American	36 (0.7%)	36 (0.7%)	91 **(1.8%)**	
AAPI	733 (14.7%)	733 (14.7%)	912 **(18.3%)**	
Black	218 (4.4%)	218 (4.4%)	299 **(6.0%)**	
Latina/o	959 (19.2%)	959 (19.2%)	1213 **(24.3%)**	
White	2056 (41.3%)	2056 (41.3%)	2056 (41.3%)	
Other	35 (0.7%)	35 (0.7%)	131 **(2.6%)**	
Two or More	912 **(18.3%)**			
Three or More		250 **(5.0%)**		
Minority/White				798 **(15.9%)**
Double Minority*				114 **(2.3%)**
Am Indian/White		142 **(2.8%)**		
Arab Am/White		26 **(0.5%)**		
AAPI/White		128 **(2.6%)**		
Black/Am Indian		10 **(0.2%)**		
Black/White		27 **(0.5%)**		
Latina/o/White		233 **(4.7%)**		
Other/White		96 **(1.9%)**		

Note: Bold indicates a change in proportion of racial group size across classification approaches.
* Double Minority denotes students who indicate two or more racial categories of color, and not white.

Table 2

Dunnett T3 Post-Hoc and T-Tests for Mean Group Differences in Discrimination and Bias, by Racial Grouping and Classification Approach

1st Group & Classification	Compared to 2nd Group:	Mean Diff. (1st - 2nd)
American Indian		
Least Prevalent Monoracial	Latina/o	2.4*
	White	2.7**
Arab American		
Least Prevalent Monoracial	Latina/o	4.1*
	White	4.4*
Asian/Pacific Islander (AAPI)		
Multiracial Aggregation	Black	2.9*
	Latina/o	4.3***
	White	4.2***
Multiracial Disaggregation	Latina/o	4.3***
	White	4.2***
	Am Indian/White	3.4*
	Other/White	4.3***
Least Prevalent Monoracial	Latina/o	3.7***
	White	4.0***
	Other	3.6***
Black		
Multiracial Aggregation	AAPI	-2.9*
Least Prevalent Monoracial	White	2.5**
Latina/o		
Multiracial Aggregation	AAPI	-4.3***
	AAPI/White	-4.4***
	Two or More	-2.7***
Multiracial Disaggregation	AAPI	-4.3***
	Three or More	-4.4***
Least Prevalent Monoracial	American Indian	-2.4*
	Arab American	-4.1*
	AAPI	-3.7***
White		
Multiracial Aggregation	AAPI	-4.3***
	Two or More	-2.6***
Multiracial Disaggregation	AAPI	-4.2***
	AAPI/White	-4.3***
	Three or More	-4.3***
Least Prevalent Monoracial	American Indian	-2.7**
	Arab American	-4.4*
	AAPI	-4.0***
	Black	-2.5**

Table 2, Continued

1st Group & Classification	Compared to 2nd Group:	Mean Diff. (1st - 2nd)
Other		
Least Prevalent Monoracial	AAPI	-3.6***
Two or More		
Multiracial Aggregation	Latina/o	2.7***
	White	2.6***
Three or More		
Multiracial Disaggregation	Latina/o	4.4***
	White	4.3***
	Other/White	4.7**
American Indian/White		
Multiracial Disaggregation	AAPI	-3.4*
AAPI/White		
Multiracial Disaggregation	Latina/o	4.4***
	White	4.3***
	Other/White	4.5*
Other/White		
Multiracial Disaggregation	AAPI	-4.3***
	AAPI/White	-4.5*
	Three or More	-4.7**
Double Minority Multiracial		
Multiracial Status^	Minority/White	2.9*
Minority/White Multiracial		
Multiracial Status^	Double Minority	-2.9*

Note: Table only shows racial groups with significant mean differences: *p < .05, **p < .01, ***p < .001.
^T-test conducted with only two comparison groups.

challenge post-racial and model minority myths; similar to Brackett et al.'s (2006) findings for black/white students, that these multiracial groups' mean scores are higher than some monoracially-classified groups helps counter assumptions that they may be honorary whites with similar experiences to monoracially-white classified students (see also Bonilla-Silva, 2010; Hurtado, Ruiz et al., 2012). Considering the factor measures any type of bias, intersections of race with other social identities in discrimination may be expressly prevalent for AAPI and multiracial students in these diverse environments.

Differences within multiracially-identifying students emerge under the MGS approach. As expected, an independent samples t-test for showed that double minority mixed students have

a higher mean frequency of experiencing discrimination and bias compared to minority/white mixed students, equal variances not assumed ($F = 12.31$, $t = 2.36$, $df = 133.16$, $p < .05$, 95% $CI = 0.47, 5.29$). In addition to any monoracism experienced by both groups, traditional racisms targeting racial groups of color could be registering as higher mean frequencies of discrimination for double minority multiracial students, producing significantly different qualities of experience (Guillermo-Wann & Johnston, 2012; see also Guillermo-Wann, 2010, Nadal et al., 2011). That differences do not emerge between the MD combination categories further highlights the more prevalent differences between minority/white and double minority multiracial students, indicating distinct status differences are evident in the quality of their interactions on campus.

Similarities and Differences in Regression Results

Regression results reveal that different distinctions arise in the predictive power of some common explanatory variables for discrimination between racial groups, particularly when comparing results from the MA and MD approaches (Table 3) to the LPMC approach (Table 4). This clarifies previous research that suggested regression models appear to be similar for monoracially-grouped students (Inkelas et al., 2009). But similar to Inkelas et al. (2009), differences in the predictive power of independent variables become more visible within a multiracially-identifying sample. That is, there are notable distinctions within students who mark multiple racial groups in terms of what variables are greater contributors to experiencing discrimination and bias, highlighting the heterogeneity of this group. Regarding the content of the models, measures of the compositional, organizational, psychological, and behavioral dimensions all contribute to explained variance in discrimination and bias in college for most racial groupings. Interestingly, three factors are consistently significant regardless of how the sample is classified: students' perceptions of institutional commitment to diversity, greater

participation in co-curricular diversity activities, and negative cross-racial interactions. In contrast, compositional diversity, curricular opportunities, and validation play out differently across groups and classification approaches. Demographics are not significant in the final model for most groups. Factors of primary interest are discussed by climate dimension below.

Compositional diversity. Findings confirm research on the importance of compositional diversity in reducing discrimination for Latina/o college students (Hurtado, 1994), and add the same result for students who only mark black (Table 3), with no significance for any other groups in final models when $\alpha = .05$ (Tables 2-3, 2-4, & 2-5). For students who indicate three or more racial groups under the MD approach, higher compositional diversity is negatively correlated with the outcome but is not significant in the final model, meaning lower discrimination is evident the more diverse the campus, but that other climate dimensions share explained variance with compositional diversity for those groups (Table 3). That Latina/o and black students in particular experience lower levels of discrimination in more compositionally diverse environments emphasizes the importance of continuing to enroll larger proportions of students of color to improve campus climate.

Psychological dimension. Students' perceptions of institutional commitment to diversity prove to be negatively related to discrimination and bias for almost all groups across all racial classification approaches (Tables 2-3, 2-4, and 2-5). Exceptions include multiracial AAPI/white students in the MD approach (Table 3) and double minority students in the RGS approach (Table 5), for whom the measure is not significantly related. In contrast, the effect is stronger for multiracial Latina/o/white students in the MD combination group compared to Latina/o and white groups in the MA and MD approaches, and compared to the MD AAPI/white combination group (Table 3). The unique effect is also greater for American Indian students compared to

Table 3

*Regression Coefficients Predicting Discrimination and Bias, Multiracial Aggregation (MA) and Multiracial Disaggregation (MD)**

	AAPI MA & MD		Black MA & MD		Latina/o MA & MD		White MA & MD		Two or More MA	
Block/Variable	*r*	*b (SE)*	*r*	*b (SE)*	*r*	*b (SE)*	*r*	*b (SE)*	*r*	*b (SE)*
Demographics	R^2 = .03		R^2 = .17		R^2 = .02		R^2 = .07		R^2 = .03	
Sex: Female	-.03	-.28 (.75)	-.07	.40 (1.30)	-.04	-.46 (.54)	-.04	-.04 (.35)	.04	.09 (.60)
Age Group	-.02	-.19 (.27)	**-.42**	**-1.02** (.42)	**-.15**	-.34 (.20)	**-.26**	**-.74** (.12)	**-.16**	**-.50** (.22)
Income	**-.16**	**-.33** (.10)	-.01	-.14 (.18)	.00	.05 (.08)	**.09**	.02 (.04)	-.06	-.06 (.07)
Compositional Diversity	R^2 = .03		R^2 = .21		R^2 = .06		R^2 = .07		R^2 = .03	
% Students of Color	-.05	-.01 (.03)	**-.31**	-.07 (.04)	**-.22**	**-.05** (.02)	-.01	.01 (.01)	-.05	.01 (.02)
Psychological Dimension	R^2 = .12		R^2 = .27		R^2 = .16		R^2 = .20		R^2 = .20	
Racial Identity Salience	**.24**	**1.10** (.34)	**.26**	.48 (.57)	**.24**	**.77** (.22)	**.29**	**1.04** (.16)	**.31**	**1.22** (.25)
Promote Racial Understanding	.04	-.17 (.47)	**.17**	-.10 (.79)	**.10**	-.07 (.36)	**.10**	.05 (.18)	**.12**	-.17 (.34)
Institutional Diversity Commitment (ICD)	**-.16**	**-.26** (.04)	**-.26**	**-.17** (.06)	**-.23**	**-.17**$_{d}$ (.03)	**-.27**	**-.21**$_{e}$ (.02)	**-.28**	**-.24** (.03)
Organizational Dimension	R^2 = .35		R^2 = .40		R^2 = .28		R^2 = .32		R^2 = .32	
Ethnic Studies: Yes	.05	-.90 (.76)	**.19**	1.06 (1.39)	**.12**	.99 (.53)	**.14**	**.71** (.34)	**.13**	-.10 (.58)
Curriculum of Inclusion	**.08**	**-.08** (.04)	.06	-.11 (.07)	**.10**	-.01 (.03)	**.15**	-.01 (.02)	**.15**	.02 (.03)
Co-Curricular Diversity Activities (CCDA)	**.51**	**.40**$_{a,b,c}$ (.04)	**.46**	**.37** (.06)	**.44**	**.29**$_{a,g}$ (.03)	**.45**	**.29**$_{b,h}$ (.02)	**.44**	**.27**$_{c}$ (.03)
Behavioral Dimension	R^2 = .42		R^2 = .47		R^2 = .37		R^2 = .38		R^2 = .38	
Conversations About Race Outside Class	**.31**	**2.41** (.61)	**.26**	.94 (.94)	**.25**	**.80** (.39)	**.26**	**.93** (.27)	**.25**	**1.19** (.45)
Negative Cross-Racial Interactions (NCRI)	**.49**	**.29** (.04)	**.48**	**.31** (.06)	**.45**	**.28** (.03)	**.39**	**.24** (.02)	**.45**	**.26** (.03)
General Climate	R^2 = .42		R^2 = .49		R^2 = .37		R^2 = .38		R^2 = .39	
Interpersonal Validation	.03	-.04 (.04)	-.11	**-.17** (.07)	**-.06**	**-.08** (.03)	**-.05**	**-.04** (.02)	-.03	-.04 (.03)

*Headings indicate whether results are for MA, MD, or both classification approaches. Results for the white racial group are also the same under the LPMC approach. Note: Coefficients shown in bold $p < .05$. Note: for ICD, CCDA, and NCRI, coefficients sharing a subscript are statistically different at $\alpha = .05$; tests were conducted across racial groups within MA; within MD, tests were only conducted across multiracial combination groups and their respective racial groups.

Table 3, Continued

Block/Variable	Three or More MD		Am Indian/White MD		AAPI/White MD		Latina/o/White MD	
	r	*b (SE)*	*r*	*b (SE)*	*r*	*b (SE)*	*r*	*b (SE)*
Demographics	R^2 = .04		R^2 = .02		R^2 = .04		R^2 = .02	
Sex: Female	.05	.28 (1.43)	.03	1.70 (1.24)	.15	1.74 (1.87)	-.02	-.35 (1.06)
Age Group	**-.15**	-.69 (.48)	-.07	.35 (.41)	-.10	-.28 (.83)	**-.15**	-.44 (.48)
Income	**-.13**	-.12 (.16)	-.08	.17 (.15)	-.07	-.15 (.23)	.06	-.08 (.15)
Compositional Diversity	R^2 = .06		R^2 = .02		R^2 = .06		R^2 = .03	
% Students of Color	**-.17**	-.01 (.04)	-.07	-.01 (.03)	-.12	-.06 (.05)	-.09	.02 (.03)
Psychological Dimension	R^2 = .18		R^2 = .37		R^2 = .17		R^2 = .20	
Racial Identity Salience	**.23**	.83 (.56)	**.42**	**2.21** (.53)	**.34**	.86 (.81)	**.26**	.77 (.48)
Promote Racial Understanding	.02	-1.48 (.82)	.10	1.14 (.74)	**.18**	.14 (.97)	.10	-.28 (.60)
Institutional Diversity Commitment (ICD)	**-.29**	**-.23** (.06)	**-.27**	**-.29** (.06)	-.17	$-.13_{f}$ (.08)	**-.34**	$\mathbf{-.32_{d,e,f}}$ (.05)
Organizational Dimension	R^2 = .35		R^2 = .41		R^2 = .30		R^2 = .30	
Ethnic Studies: Yes	.10	-.64 (1.31)	.04	-.03 (1.22)	**.26**	1.46 (1.70)	.10	.01 (1.04)
Curriculum of Inclusion	.12	.00 (.07)	.09	.00 (.06)	.12	-.08 (.09)	**.17**	.09 (.06)
Co-Curricular Diversity Activities (CCDA)	**.49**	$\mathbf{.35_{i,j}}$ (.06)	**.45**	$.13_{i}$ (.09)	**.46**	**.29** (.10)	**.35**	$\mathbf{.16_{g,h,j}}$ (.06)
Behavioral Dimension	R^2 = .41		R^2 = .45		R^2 = .38		R^2 = .40	
Conversations About Race Outside Class	**.20**	1.60 (1.02)	**.21**	1.09 (.97)	**.34**	2.29 (1.30)	**.22**	1.48 (.76)
Negative Cross-Racial Interactions (NCRI)	**.46**	**.26** (.06)	**.47**	**.24** (.08)	**.44**	**.29** (.09)	**.43**	**.30** (.06)
General Climate	R^2 = .41		R^2 = .45		R^2= .40		R^2 = .40	
Interpersonal Validation	-.09	-.11 (.07)	-.05	-.01 (.07)	-.01	-.18 (.11)	.12	.08 (.05)

*Headings indicate whether results are for MA, MD, or both classification approaches. Results for the white racial group are also the same under the LPMC approach. Note: Coefficients shown in bold $p < .05$. Note: for ICD, CCDA, and NCRI, coefficients sharing a subscript are statistically different at $\alpha = .05$; tests were conducted across racial groups within MA; within MD, tests were only conducted across multiracial combination groups and their respective racial groups.

Table 4

Regression Coefficients Predicting Discrimination and Bias, Least Prevalent Monoracial Category (LPMC)

	AAPI		*Am. Indian*		*Black*		*Latina/o*		*White**	
Block/Variable	*r*	*b (SE)*	*r*	*b (SE)*	*r*	*b (SE)*	*r*	*b (SE)*	*r*	*b (SE)*
Demographics	R^2 = .03		R^2 = .01		R^2= .17		(R^2 = .03)		R^2 = .07	
Sex: Female	.00	.09 (.66)	.05	.56 (1.15)	-.05	-.28 (1.14)	-.04	-.24 (.48)	-.04	-.04 (.35)
Age Group	-.03	-.31 (.25)	-.05	.26 (.36)	**-.42**	**-1.40** (.35)	**-.16**	-.34 (.18)	**-.26**	**-.74** (.12)
Income	**-.15**	**-.27** (.08)	-.08	.02 (.14)	-.03	-.14 (.15)	.03	.05 (.07)	**.09**	.02 (.04)
Compositional Diversity	R^2 = .03		R^2 = .02		R^2 = .20		(R^2 = .06)		R^2 = .07	
% Students of Color	-.06	-.01 (.02)	-.10	-.04 (.03)	**-.25**	-.04 (.03)	**-.21**	**-.04** (.02)	-.01	.01 (.01)
Psychological Dimension	R^2 = .12		R^2 = .32		R^2 = .25		(R^2 = .16)		R^2 = .20	
Racial Identity Salience	**.25**	**1.08** (.30)	**.40**	**1.75** (.49)	**.25**	.69 (.47)	**.23**	**.72** (.19)	**.29**	**1.04** (.16)
Promote Racial Understanding	.06	-.32 (.40)	**.16**	.49 (.65)	.09	-.59 (.71)	**.10**	-.14 (.30)	**.10**	.05 (.18)
Institutional Diversity Commitment (ICD)	**-.16**	**-.23** (.04)	**-.35**	**-.28$_a$** (.05)	**-.27**	**-.14$_a$** (.05)	**-.25**	**-.20** (.02)	**-.27**	**-.21** (.02)
Organizational Dimension	R^2 = .33		R^2 = .37		R^2 = .40		(R^2 = .28)		R^2= .32	
Ethnic Studies: Yes	**.07**	-.45 (.66)	.08	-.66 (1.10)	**.14**	-.11 (1.17)	**.12**	.78 (.47)	**.14**	**.71** (.34)
Curriculum of Inclusion	**.09**	**-.08** (.03)	.11	.03 (.06)	.08	-.05 (.06)	**.13**	.02 (.03)	**.15**	-.01 (.02)
Co-Curricular Diversity Activities (CCDA)	**.50**	**.38$_{b,c,d}$** (.04)	**.46**	**.21$_{b,e}$** (.06)	**.47**	**.37$_e$** (.05)	**.43**	**.27$_c$** (.03)	**.45**	**.29$_d$** (.02)
Behavioral Dimension	R^2 = .41		R^2 = .42		R^2 = .48		(R^2 = .37)		R^2 = .38	
Conversations About Race Outside Class	**.31**	**2.59** (.53)	**.23**	1.19 (.86)	**.25**	.70 (.82)	**.25**	**.89** (.35)	**.26**	**.93** (.27)
Negative Cross-Racial Interactions (NCRI)	**.48**	**.28** (.03)	**.45**	**.25** (.06)	**.54**	**.33** (.05)	**.44**	**.29** (.02)	**.39**	**.24** (.02)
General Climate	R^2 = .41		R^2 = .42		R^2 = .50		(R^2 = .37)		R^2= .38	
Interpersonal Validation	.02	-.06 (.04)	**-.14**	-.09 (.05)	-.06	**-.18** (.06)	-.02	**-.05** (.02)	**-.05**	**-.04** (.02)

*Coefficients are the same for the white racial group under the MA and MD classification approaches, and are shown again here for ease in comparison.
Note: Coefficients shown in bold $p < .05$. Note: for ICD, CCDA, and NCRI, coefficients sharing a subscript are statistically different at $\alpha = .05$.

Table 5

Unstandardized Regression Coefficients Predicting Discrimination and Bias, Multiracial Group Status (MGS)

	Double Minority		Minority/White	
Block/Variable	*r*	*b (SE)*	*r*	*b (SE)*
Demographics	R^2 = .12		R^2 = .03	
Sex: Female	**.19**	2.95 (2.39)	.01	-.42 (.61)
Age Group	-.17	-.66 (.79)	**-.17**	**-.53** (.22)
Income	**-.23**	-.20 (.29)	-.01	-.01 (.08)
Compositional Diversity	R^2 = .12		R^2 = .03	
% Students of Color	-.17	.09 (.07)	-.04	.01 (.02)
Psychological Dimension	R^2 = .20		R^2 = .22	
Racial Identity Salience	**.36**	1.78 (1.08)	**.29**	**1.07** (.26)
Promote Racial Understanding	.02	-.66 (1.63)	**.13**	-.01 (.33)
Institutional Diversity Commitment (ICD)	-.11	-.11 (.11)	**-.31**	**-.27** (.03)
Organizational Dimension	R^2 = .35		R^2 = .32	
Ethnic Studies: Yes	.07	-3.50 (2.25)	**.14**	.34 (.59)
Curriculum of Inclusion	**.23**	.14 (.11)	**.14**	.01 (.03)
Co-Curricular Diversity Activities (CCDA)	**.51**	**.37** (.12)	**.42**	**.24** (.03)
Behavioral Dimension	R^2 = .39		R^2 = .40	
Conversations About Race Outside Class	**.24**	.59 (1.77)	**.25**	**1.39** (.45)
Negative Cross-Racial Interactions (NCRI)	**.44**	**.28** (.11)	**.44**	**.25** (.03)
General Climate	R^2 = .39		R^2 = .40	
Interpersonal Validation	.09	-.06 (.13)	-.04	-.04 (.03)

Note: Coefficients shown in bold $p < .05$. Note: for ICD, CCDA, and NCRI, no coefficients are statistically different at $\alpha = .05$.

black students under the LPMC approach (Table 4). While higher perceptions of institutional commitment to diversity are related to less discrimination and bias for nearly all groups in all classification approaches, it is particularly important for American Indian and multiracial Latina/o/white students.

Regarding other aspects of the psychological dimension, importance given to helping to promote racial understanding was not related to the outcome measure for any groups when α = .05 (Tables 2-3, 2-4, and 2-5), contrary to previous research (Hurtado, 1994). However, because the Pearson correlation was significant for several groups, and the final p-value neared significance for some, this simply means that the unique explanatory power may be shared by other variables in the model that were not present in Hurtado's (1994) study. On the other hand, a heighted racial identity salience was positively related to discrimination and bias for many groups (Tables 2-3, 2-4, and 2-5), confirming recent research (Hurtado, Ruiz et al., 2012). Although increasing racial identity salience is important for racial identity development, its positive relationship with discrimination and bias may actually indicate that greater awareness about racial conflict is evident in students at mid stages of development (Hurtado, Ruiz et al., 2012). So in addition to increasing representation of students of color on campus as a method to improve the climate for some groups, certain organizational practices, discussed next, may include positive ways to increase racial identity salience as suggested by Hurtado, Ruiz et al. (2012), and help students recognize, cope with, and challenge discrimination and bias in college.

Organizational dimension. As anticipated, co-curricular practices are positively related to discrimination and bias, likely for their role as counterspaces for coping with and challenging microaggressions (Solórzano, Ceja, & Yosso, 2000); however, curricular practices have little to no effect for most groups after controlling for additional factors that may possibly be developed

within such curricular spaces. For all groups across all racial classifications, except American Indian/white students in the MD approach, participation in campus facilitated co-curricular diversity activities is positively related to experiencing more frequent discrimination (Tables 2-3, 2-4, and 2-5). The effect is more prominent for AAPI students compared to several groups under all approaches (Tables 2-3 and 2-4), and for black students compared to American Indian students only under the LPMC approach (Table 4). In addition, the effect for the Latina/o/white combination group is significantly lower in that approach than students in the MD Latina/o, white, and Three or More groups (Table 3). As such, participation in co-curricular diversity activities may be particularly helpful for AAPI, black, Latina/o, white, and multiracial students with three or more backgrounds, as further participation in co-curricular diversity activities likely increase as it becomes more publicly evident that students are experiencing discrimination on campus.

As for curricular practices, taking a curriculum of inclusion decreases reports of discrimination for AAPI students in all monoracial classifications once demographics, compositional diversity, and psychological measures enter the models (Tables 2-3 and 2-4). Taking an ethnic studies class is related to experiencing more discrimination only for white students, but is the weakest of predictors (Table 3); this may simply reflect raising white students' awareness of racial oppression, which could easily provoke a sense of defensiveness regarding historical and contemporary racial privilege. However, the lack of effect of curricular diversity on discrimination for most groups, in either direction, implies that some students who experience discrimination and others who do not are equally likely to take such courses, and that a diverse curriculum may be the space in which some desirable predictors are cultivated.

Considering that Hurtado, Ruiz et al. (2012) found that taking a curriculum of inclusion and participating in co-curricular diversity activities are positively related to racial identity salience, and that a heightened racial identity salience is positively related to students' critical consciousness and action, the current findings may suggest that when students experience discrimination and bias in college, and in turn participate inclusive curriculum and diversity activities, doing so may redirect negative experiences towards developing critical consciousness and action. However, experiencing discrimination is not a prerequisite to increasing identity salience, so positive ways of increasing identity salience must be pursued (Hurtado, Ruiz et al., 2012). Attention to linking curriculum to lived experiences, as in intergroup dialogue (Zúñiga, Nagda, Chesler, & Cytron-Walker, 2009), may result in a clearer relationship between these practices in the organizational and behavioral dimensions of climate. In fact, such practices are critical to preventing racial incidents on campus. Accordingly, formal curricular and co-curricular diversity practices may help create a color-conscious, rather than a colorblind student body, that may more aptly recognize and constructively address discrimination and bias.

Behavioral dimension. Regression results also show that informal interactions including college students' conversations outside of class on topics related to racial and ethnic diversity, as well as negative cross-racial interactions, are positively related to experiencing discrimination and bias for all racial groups across most classification approaches, with few exceptions (Tables 2-3, 2-4, and 2-5). That is, conversing about racial matters outside of class is a requisite exchange in which students can experience discrimination; this measure is significant for all groups except for black students under all classification approaches (Tables 2-3 and 2-4), American Indian students in the LPMC approach (Table 4), double minority students in the MGS analysis (Table 5), and all MD combination groups (Table 3); it may be a function of sample

size. If not, it raises questions as to the content of such conversations with these groups of students – that is, are other students less likely to vocalize discriminatory remarks in their presence (Cabrera, 2009)? As for negative cross-racial interactions, all groups across all classifications indicate they are positively related to discrimination, and the strength of predictive power does not change across groups based on classification approach (Tables 2-3, 2-4, and 2-5). Again, this emphasizes that institutions should offer practices that can develop multicultural competencies (e.g. S. Harper & Hurtado, 2007; Hurtado, Alvarez et al., 2012) to help reduce discrimination and bias as students necessarily engage across difference.

General climate: validation. Lastly, this study explores a new quantitative measure of interpersonal validation by faculty and staff (Hurtado et al., 2011) in its relationship to discrimination in the campus climate, as previous research indicates that general climate measures of institutional supportiveness seems to improve the campus climate (Hurtado, 1994; Laird & Niskodé -Dossett, 2010). An inverse relationship is significant throughout only for white students (Tables 2-3 and 2-4), and only for Latina/o students in the MA and MD approaches (Table 3); diverse campuses may still perpetuate white privilege registering through validation for white students, but may also be doing a good job validating students who singly identify as Latina/o. However, for black students under MA, MD, and LPMC, and for Latina/o students under LPMC, validation is not significantly related to discrimination in a simple correlation, but undergoes suppressor effects and shows a negative relationship with it in those final models (Tables 2-3 and 2-4). That is, taking into account multiple campus climate dimensions, interpersonal validation by faculty and staff may lower frequencies of discrimination indicated by black and Latina/o students. This attests to the importance of validating students of

color in particular (Hurtado et al., 2011; Rendón, 1994), both in and outside of the classroom, and how doing so may decrease or counter discrimination and bias for these students.

Implications and Conclusion

This study confirms the continuing significance of race. Specifically, it demonstrates that how researchers racially classify multiple-race data in a diverse sample can produce varied results when examining discrimination and bias in the campus climate, even when several factors are consistently significant across groups and approaches. Importantly, multiracially-identifying students appear to be experiencing discrimination and bias more frequently than might commonly be assumed. Students who mark multiple racial categories also seem to make monoracially-constructed group differences more pronounced when included in those groups in the LPMC approach. Accordingly, this study offers implications and future directions for research regarding racial classifications, for practice aimed at improving the campus climate for diversity for all students, and for coalition building between monoracially- and multiracially-framed constituents in the continual struggle to end all forms of oppression.

Research ought to clearly communicate how multiple-race data is classified in analyses, as it may generate different representations of racial groups as seen in this study. For monoracially-based analyses, choosing to include or exclude multiracial data produces small but significant differences between groups in regression models of discrimination in college. In this sense, researchers interested primarily in monoracially-grouped students should note that using the LPMC approach with multiple-race data might generate differences between groups that do not emerge under the MA and MD approaches when multiple-race data is not included in those groups, and when multiple-race data comprises a considerable proportion of the data. When examining differences within multiraciality, the different approaches provide important levels of

nuance for within- and between-group comparisons. For example, the Two or More group in the MA approach shows that those students experience discrimination and bias more frequently than white and Latina/o students, and the regression results indicate significant predictors for this heterogeneous group in general. When broken down further into the MD combination groups, mean differences in discrimination do not arise amongst the multiracial groups, but the predictive power of some explanatory variables is significantly different. On the other hand, the MGS approach shows that double minority multiracial students experiences discrimination more frequently than minority/white multiracial students, but that that there are no differences in the predictive power of explanatory variables. The preservation of multiple-race data allows research on various racial groups to use different classification approaches appropriate to the purpose of inquiry.

Future research examining the behavioral dimension of the campus climate for diversity across racial groups should pursue five issues raised by this study. First, research should explore differences specifically in *racial* discrimination comparing results across classification approaches. More robust measures might be created to focus in on racial discrimination, and to examine intersectionality of racism across other groupings such as gender, class, and sexual orientation. This may be particularly interesting for AAPI and students in the Two or More group given their higher frequencies of discrimination and bias than white students in this study and in Hurtado, Ruiz et al. (2012). In addition, larger samples of black/white, American Indian/black, and Arab American students should be sought for inclusion in such research, and efforts to collect longitudinal data will help as well. Second, future research on the campus climate for multiraciality should continue to examine intersections of traditional racisms and monoracism (Guillermo-Wann & Johnston, 2012), particularly as they play out for double

minority multiracial students and minority/white multiracial students. And despite that mean differences in discrimination between the MD combination groups do not emerge, qualitative research might investigate the content of what discrimination looks like across these groups, as well as the role of whiteness in their experiences with their respective monoracially-defined communities. Third, research must better explore the positive relationship between co-curricular diversity activities and negative experiences in the behavioral dimension of the climate. In these settings, charged topics are often discussed openly as a means of coping (e.g. Solórzano et al., 2000), which may explain the positive relationship. Fourth, future research using hierarchical linear modeling might test for effects of an institution's mean level of students taking a curriculum of inclusion to see if that might have a significant relationship to measures of the behavioral dimension of the climate. That is, attending an institution where students on average take more classes representative of a curriculum of inclusion might help improve the behavioral dimension of the climate more so than expecting an individual student to experience more or less discrimination based on how many inclusive course she or he takes. Fifth, future research can further tease out relationships between general climate measures, such as validation, and the campus climate for diversity. Research on validation shows it is a crucial component for the success of underrepresented students (e.g. Rendón, 1994). That greater validation is significantly associated with lower levels of discrimination for Latina/o and white students, and only became significant for black students once other climate dimensions were accounted for, raises concerns about who is being validated on campus, and to improve the climate for all students of color. In sum, future research has the potential to help educators better understand what may be related to the behavioral dimension of the racial climate across racial groups, how traditional racisms and

monoracism intersect in a campus climate for multiraciality, and the role co-curricular and curricular practices can play in improving the campus climate for all students.

In practice, campuses interested in reducing discrimination and bias as a component of the behavioral dimension of the climate might pro-actively develop students' awareness of oppression as well as multicultural competencies through curricular and co-curricular activities; this may help reduce negative cross-racial interactions and discrimination in the long run. Previous research has shown that curriculum matters in creating positive perceptions of campus climate for diversity, but that participation in a diverse curriculum does not straightforwardly lead to positive perceptions, as students may become more critically conscious of institutional practice around diversity (Mayhew et al., 2005). Similarly, the positive relationship between co-curricular diversity activities and experiencing discrimination may simply mean campuses are educating students about diversity at the same time that they are experiencing negative behaviors between groups in college. Given the higher levels of discrimination and bias indicated by monoracially-classified AAPI and aggregated multiracial students, efforts should be made to include these groups in diversity initiatives and interventions where they may traditionally be overlooked (Hurtado, Ruiz et al. 2012; Ozaki & Johnston, 2008). In addition, along with increasing compositional diversity, curricular and co-curricular organizational practices may help improve students' perceptions of institutional commitment to diversity, which is a key factor identified in this study that appears to decrease the frequency of experiencing discrimination and bias across almost all racial groupings and classification approaches. This confirms previous research that shows institutional commitment to diversity is important in improving perceptions of a positive campus climate for diversity for students (Hurtado, 1992; Mayhew et al, 2005) and staff (Mayhew, Grunwald, & Dey, 2006).

Finally, the inclusion of multiracially- and monoracially-grouped students in a campus climate study provides a more nuanced understanding of similarities and differences across groups, and demonstrates a needed alliance between multiracially- and monoracially-focused research in the continued struggle to end racial and all forms of oppression. The findings challenge both neo-conservative colorblind perspectives and liberal post-racial hopes by demonstrating that race is still significant in the lives of college students, and that there are group differences in how often students experience it. This study also confirms the civil rights concern that multiracial aggregation reduces racial group numbers, but challenges the assumption that the Two or More category is meaningless by highlighting mean differences between that and some monoracial groups as a possible indication of monoracism, as well as differences in the predictive power of explanatory variables. Too often, multiraciality is disconnected from examinations of traditional racisms and discrimination targeting monoracially-constructed groups, and is vulnerable to being co-opted to support neo-conservative and liberal racial ideology (Guillermo-Wann & Johnston, 2012). Rather, this study shows that college students of all racial backgrounds continue to experience discrimination and bias, including students who indicate multiple racial groups, and that discrimination can be pro-actively addressed by continuing to collect racial group data, allowing for flexibility in analysis, supporting campus diversity practices, and improving institutional commitment to diversity.

Appendix A: Variables and Factors

Variable/Factor	Scale	Mean (SD)	Factor Reliability / Loading
DEPENDENT MEASURE	Rescaled 0-100, Mean of 50.		$\alpha = .889$
Discrimination and Bias	Original item scales: 1=Never; 2=Seldom; 3=Sometimes; 4=Often; 5=Very often	50.067 (10.059)	
Type of discrimination: Verbal comments			.792
Type of discrimination: Written comments (e.g. emails, texts, writing on walls, etc.)			.762
Witnessed discrimination			.750
Heard insensitive or disparaging racial remarks from: Faculty			.677
Heard insensitive or disparaging racial remarks from: Staff			.664
Heard insensitive or disparaging racial remarks from: Students			.644
Been mistaken as a member of a racial/ethnic group that is not your own			.444
DEMOGRAPHICS			
Sex	0 = Male; 1 = Female	1.680 (0.465)	
Age Group	Open ended, rescaled: 1 = 0-20; 2 = 21-24; 3 = 25-29; 4 = 30-39; 5 = 40-45; 6 = 55+	2.330 (1.422)	
Estimated total family income last year	1=Less than $10,000; 2=$10,000-14,999; 3=$15,000-19,999; 4=$20,000-24,999; 5=$25,000-29,999; 6=$30,000-39,999; 7=$40,000-49,999; 8=$50,000-59,999; 9=$60,000-74,999; 10=$75,000-99,999; 11=$100,000-149,999; 12=$150,000-199,999; 13=$200,000-249,999; 14=$250,000 or more	6.960 (3.755)	
COMPOSITIONAL DIVERSITY			
Percentage of students of color	Scale 0 -100	40.022 (17.919)	
PSYCHOLOGICAL DIMENSION			
How often do you think about your race ethnicity?	1=Never; 2=Seldom; 3=Sometimes; 4=Often; 5=Very often	3.030 (1.211)	
Helping to promote inter-	1=Not important; 2 = Somewhat	3.110	

racial/inter-ethnic understanding	important; 3 = Very important; 4 = Essential	(0.874)	
Institutional Commitment to Diversity	Rescaled 0-100, Mean of 50. Original item scale: 1=Strongly disagree; 2=Disagree; 3=Agree; 4=Strongly Agree	50.074 (9.995)	α = .873
Encourages students to have a public voice and share their ideas openly			.701
Has a long standing commitment to diversity			.733
Accurately reflects the diversity of the student body in publications (e.g. brochures, website, etc.)			.691
Rewards staff and faculty for their participation in diversity efforts			.629
Appreciates differences in sexual orientation			.696
Promotes the appreciation of cultural difference			.715
Has campus administrators who regularly speak about the value of diversity			.594
Promotes the understanding of gender differences			.606
ORGANIZATIONAL DIMENSION			
Taken an ethnic studies course	0 = No; 1 = Yes	0.410 (0.492)	
Curriculum of Inclusion	Rescaled 0-100, Mean of 50. Original item scales: 1-None, 2=One, 3=2-4, 4=5 or more	49.991 (9.971)	α = .854
Materials/readings on gender issues			.715
Materials/readings on issues of oppression as a system of power and dominance			.775
Serving communities in need (e.g. service learning)			.578
Material/readings on race and ethnicity issues			.824
Opportunities for intensive dialogue between students with different backgrounds and beliefs			.635
Materials/readings on issues of privilege			.705
Co-Curricular Diversity Activities (Campus Facilitated)	Rescaled 0-100, Mean of 50. Original item scales: 1=Never; 2=Seldom; 3=Sometimes; 4=Often; 5=Very often	49.999 (10.020)	α = .903
Attended presentations, performances, and art exhibits on diversity			.649
Attended debates or panels about diversity issues			.810
Participated in ongoing campus-organized discussions on racial/ethnic issues (e.g. intergroup dialogue)			.866
Participated in the Lesbian, Gay, Bisexual, and Transgender Center activities			.729
Participated in the Ethnic or Cultural Center activities			.848
Participated in the Women's/Men's Center activities			.782
BEHAVIORAL DIMENSION			

In-depth conversations outside of class on issues related to racial or ethnic diversity	1=Not at all, 2=Occasionally, 3=Frequently	1.940 (0.694)	
Negative Cross-Racial Interactions	Rescaled 0-100, Mean of 50. Original item scale: 1=Never; 2=Seldom; 3=Sometimes; 4=Often; 5=Very often	50.050 (10.048)	α = .769
Had tense, somewhat hostile interactions			.849
Felt insulted or threatened because of your race/ethnicity			.849
Had guarded interactions			.660
GENERAL CLIMATE			
General Interpersonal Validation	Rescaled 0-100, Mean of 50. Original item scale: 1=Strongly disagree; 2=Disagree; 3=Agree; 4=Strongly Agree	49.997 (10.008)	α = .862
Faculty believe in my potential to succeed academically			.830
At least one faculty member has taken an interest in my development			.773
At least one staff member has taken an interest in my development			.764
Staff recognize my achievements			.721
Faculty empower me to learn here			.598
Staff encourage me to get involved in campus activities			.564

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