

RESEARCH ARTICLES

Diversity Experiences Predict Changes in Attitudes Toward Affirmative Action

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The current study examined the role of diversity experiences in promoting changes in attitudes toward affirmative action (AA). Using longitudinal data from a survey of over 1000 college students at admission and in their fourth year, results demonstrated that participation in diversity-related campus activities related to positive changes in attitudes toward affirmative action. This result was consistent across samples of White, African American, and Asian American students. Positive changes in attitudes persisted despite statistical controls for established predictors of attitudes toward AA such as merit and prevalence of discrimination beliefs, and individual-level characteristics such as experiences of discrimination and political liberalism. I discuss the relevance of this finding to the AA literature and to changing attitudes toward AA.

Keywords: affirmative action, diversity, racial and ethnic groups, higher education, school environment

Affirmative action (AA) policies began in the United States in 1965 with Executive Order 11246. Since that time, AA has become a source of controversy, with many individuals strongly opposing AA. Despite the controversy, AA remains federal law, meaning that many universities and organizations must implement such policies. Central to presenting policies that reduce conflicts associated with AA is an understanding of factors related to support for or opposition to AA. Research on attitudes toward AA examines a range of topics including reactions to different forms of AA (e.g., Kravitz & Platania, 1993), models of support for AA (e.g., Kravitz & Klineberg, 2000), changing attitudes and behavioral intentions relevant to AA (e.g., Bell, Harrison, & McLaughlin, 2000), and reactions to AA beneficiaries (e.g., Heilman, Battle, Keller, & Lee, 1998). The current study examined whether diversity experiences predicted changes in attitudes toward AA over a 4-year period. Specifically, I present data examining the role of diversity experiences in predicting attitude change over and above belief in merit, belief in the prevalence of discrimination, personal experiences of discrimination, sex, political beliefs, and economic concerns.

The present study adds importantly to earlier work in several manners. First, this study focuses on how experiences with diversity impact support for AA. Although previous work examined beliefs about the value of organization diversity (e.g., Aberson & Haag, 2003), little is known about how experiences with diversity impact attitudes toward AA. A second advantage is examination of attitude change over time. Using longitudinal data from the Michigan Student Survey, this work focused on attitude change between admission and students' fourth year at the university. There is little

published work investigating changes in attitudes toward AA over time or factors that predict such changes. Also, the present study focuses on college student experiences with campus diversity education. Given the increased focus of many colleges and universities on diversity, it is important to understand the impact of such experiences on student attitudes. Finally, this work examines the attitudes of White, African American, and Asian American participants. Previous research examined differences among ethnic groups regarding their attitudes toward AA, but few studies compared groups in terms of the predictors of attitudes.

Attitudes Toward AA

A number of studies focused on changes in AA attitudes, often as a function of providing individuals with information about policies. For example, providing justifications for policies or providing pro-AA arguments promotes more positive attitudes toward AA (e.g., Aberson, 2003; Heilman et al., 1998; Murrell, Dietz-Uhler, Dovidio, Gaertner, & Drout, 1994). Although relevant to attitudes, it is unclear whether attitude changes produced in this manner persist over time. Similarly limited are correlational studies of attitudes toward AA. A number of studies demonstrated consistent relationships between AA support and beliefs in the fairness of AA (e.g., Kravitz & Klineberg, 2000), meritocracy (e.g., Bobocel, Son Hing, Davey, Stanley, & Zanna, 1998), the importance of diversity (e.g., Aberson & Haag, 2003), and individual characteristics such as experiences of discrimination, perceived benefit from AA, and demographics (e.g., Kravitz & Klineberg, 2000; Kravitz et al., 2000). Of course, as with any correlational data, it is impossible to determine whether beliefs or experiences preceded AA attitudes or were a product of AA attitudes.

Although there is extensive research relevant to attitudes toward AA, little is known about changes in attitudes toward AA over

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time. In the current study, I posit that diversity experiences promote positive changes in such attitudes. In examining these changes, I also address a variety of predictors of AA attitudes to create a conservative prediction model examining diversity experiences over and above a host of other established predictors of attitudes toward AA.

Diversity Experiences and Beliefs

Diverse educational experiences relate to a number of beneficial outcomes, such as more positive student assessments of the benefits of interacting with diverse peers, positive faculty evaluations of student learning, better monetary outcomes of education, and increased advance degree pursuit. Organizations also profit from diversification, with benefits including expanding markets and gaining new perspectives on issues (see Crosby, Iyer, Clayton, & Downing, 2003; Gurin, Dey, Hurtado, & Gurin, 2002 for reviews). Similarly, multicultural training for counselors relates to more positive counseling outcomes and greater recognition of complex causes of client problems (e.g., Toporek & Pope-Davis, 2005; Kearney, Draper, & Barón, 2005). Broadly, experiences with diversity have positive impacts in a wide range of areas.

The outcomes of diversity education programs are particularly relevant to the current study. White students who completed diversity courses or attended interethnic dialogs demonstrated greater political engagement, perspective taking ability, and better learning outcomes than students with fewer experiences (Gurin, 1999; Gurin et al., 2002; Gurin, Nagda, & Lopez, 2004, Study 2). Similarly, students enrolled in a first-year diversity education program exhibited greater perspective taking ability, democratic sentiments, and political engagement than a matched group of students who did not enroll (Gurin et al., 2004, Study 1).

Also relevant is the relationship between diversity beliefs and support for AA. Participation in diversity-related events is likely associated with interests in and valuation of diversity. Research regarding the relationship between belief in the value of diversity and support for AA demonstrated positive relationships with support for AA in general (Aberson & Haag, 2003) and support for AA policies using banding or tiebreak procedures (Aberson, in press; Aberson & Haag, 2003). In each of these studies, diversity beliefs predicted attitudes even when controlling for other relevant beliefs such as beliefs of meritocracy, fairness of AA, prevalence of discrimination, and a number of individual characteristics.

Theoretical support for the role of valuing diversity on AA attitudes comes from fairness heuristic theory (e.g., Van den Bos, Wilke, Lind, & Vermunt, 1998). Fairness heuristic theory suggests that a focus on outcomes before procedures affects, and may override, procedural and distributive justice concerns. Procedural justice concerns related to the fairness of AA selection procedures and distributive justice concerns related to distribution of outcomes are well-established predictors of opposition to AA. However, research on fairness heuristics demonstrates that when favorable outcome information preceded information about procedures, participants rated procedures and outcomes resulting from accurate and inaccurate selection procedures as equally fair (Van den Bos, Vermunt, & Wilke, 1997). The authors interpreted this result as suggesting that procedural and distributive justice concerns are most influential in the absence of outcome information. When outcomes were favorable, individuals demonstrated less concern

over procedural and distributive deficiencies. Relevant to AA, a concern for outcomes such as increasing institutional diversity can override justice-based concerns that promote opposition to AA.

The primary goal of this study is to examine the impact of diversity experiences on support for AA. Thus, I predict:

Hypothesis 1: Diversity experiences relate to positive changes in attitudes toward AA.

Although the primary goal of this work was to examine changes in attitudes toward AA associated with diversity experiences, there exist a number of other predictors of attitude change. By including variables with previously demonstrated relationships with attitudes toward AA, hypothesis tests can address whether diversity experiences explain changes in attitudes over and above other predictors. As diversity predictions are the primary focus of the current study, I refer to the predictions that follow as secondary hypotheses.

Beliefs Relevant to AA

There are a number of beliefs related to support for and opposition to AA. Crosby (1994) presented perceived need for AA, effectiveness, and fairness as sources of opposition. Plous (1996, 2003) suggested a number of myths about AA including beliefs that AA is not necessary or useful; AA policies require hiring of unqualified candidates (i.e., oppose merit); AA policies are damaging to minorities, and minorities should be able to succeed without AA; policies discriminate against and hurt Whites; and policies serve a political agenda. Edley (1996) proposed correcting effects of past discrimination, preventing future discrimination, and increasing diversity as justifications for AA and unfair discrimination against Whites and a compromised value of merit as justifications for opposition. Kravitz and Klineberg (2000) presented perceived fairness of policies, prevalence of discrimination, and anticipated actions taken by AA policies (i.e., how policies work).

From this list, the current study focuses on belief in merit and belief in the prevalence of discrimination. Clearly, there are a number of additional beliefs that might predict attitudes; however, the current data do not support analyses of all of these beliefs.

Belief in Merit

Individuals who endorse merit believe that qualifications and ability should be the only deciding factor in college admissions, hiring, and promotion. Belief in merit thus serves a distributive justice function. Distributive justice refers to perceptions of the fairness of the distribution of resources or outcomes (Adams, 1965). Related to AA, distributive justice violations occur when individuals perceive that opportunities are not allocated to the most meritorious candidates (e.g., Nacoste, 1987).

Individuals with stronger merit beliefs tend to support AA less and view those who benefit from AA as less qualified than do individuals with weaker merit beliefs. For example, stronger beliefs in merit (e.g., "people who do their job well ought to rise to the top") related to opposition to AA policies (Bobocel et al., 1998). Regarding perceptions of AA beneficiaries, female employees whom participants perceived to have benefited from AA pol-

icies received poor competence ratings (Heilman, Block, & Lucas, 1992), and minority graduate school applicants received poor evaluations when raters learned that the graduate program had specific AA goals for admissions (Garcia, Erskine, Hawn, & Casmay, 1981). In another study, participants evaluated applicants hired under one of three AA policies and a merit-based policy. Participants rated the candidate as most competent when merit was the only hiring criteria (Heilman et al., 1998, Study 2). These studies suggest that individuals often view AA as incompatible with merit.

Hypothesis 2: Belief in merit relates negatively to support for AA.

Prevalence of Discrimination

Belief in the prevalence of discrimination is central to support for AA. Individuals who do not believe that discrimination exists do not support policies designed to remedy discrimination such as AA (e.g., Jacobson, 1985; Kluegel, 1985; Kravitz & Klineberg, 2000; Kravitz et al., 2000).

Hypothesis 3: Prevalence of discrimination beliefs relate to increased support for AA.

Individual-Level Variables

As with beliefs, there are a number of individual-level variables associated with attitudes toward AA. These include gender, race/ethnicity, beneficiary status, personal experience, political orientation, education, self-interest, and income (see Kravitz et al., 1997 for a review). Again, the current study focuses on a limited set of these variables, examining personal experiences of discrimination, liberalism, self-interest (in terms of economic concerns), gender, and ethnicity.

Personal Experience of Discrimination

Whites with experiences as targets of discrimination are more likely to oppose AA policies. However, African Americans and Hispanics who have been targets of discrimination are more likely to support AA (Kravitz et al., 2000).

Hypothesis 4: For White participants, experiences of discrimination relate to reduced support for AA. For African and Asian Americans, experiences of discrimination relate to increased support for AA.

Economic Concerns

Several studies examined the role of income in predicting attitudes toward AA and reported inconsistent findings (Jacobson, 1985; Kluegel, 1985; Kravitz & Klineberg, 2000). However, the current sample consists of college students for whom economic concerns seem highly relevant. Because many of these participants likely will be seeking employment in the near future, economic issues might be particularly salient for these students.

Hypothesis 5: For Whites, economic concerns relate to reduced support for AA. For African and Asian Americans, economic concerns relate to increased support for AA.

Political Orientation

Liberals or Democratic party members are more likely to support AA policies than nonliberals (e.g., Aberson & Haag, 2003; Kravitz & Klineberg, 2000; Sidanius, Pratto, & Bobo, 1996).

Hypothesis 6: Liberals support AA more than nonliberals.

Gender

There is some evidence that women support AA policies more than men, even when the focus of policies is race-based (e.g., Aberson & Haag, 2003; Kravitz & Platania, 1993; Kravitz & Klineberg, 2000).

Hypothesis 7: Women support AA more than men.

The Current Study

The current study examined predictors of changes in attitudes toward AA using data from the Michigan Student Study (MSS), conducted from 1990 to 1994 at the University of Michigan. Data from the MSS focusing on beliefs relevant to educational equity (e.g., Lopez, Holliman, & Peng, 1995; Matlock, Gurin, & Wade-Golden, 2000), and the impacts of diversity on student outcomes (Gurin et al., 2002) and political and democratic participation (Gurin et al., 2004) are presented elsewhere. However, little work with these data specifically examined AA attitudes.

A handful of studies overlap the current work on some variables. A series of studies examined changes in support for educational equity from admission to the end of the first academic year by using a measure that included the two dependent measures in the current study but also included six additional items relevant to support for efforts to diversify the campus and the role of the university in promoting racial equality (Lopez, 1993, 2004; Lopez, Holliman, & Peng, 1995). These studies found that diversity experiences predicted increased support for educational equity and awareness of inequality for White students only. Another study focused on a detailed set of predictors of attitude change over a single year that included some of the diversity and AA items included in the present study, finding some support for student ratings of their diversity experiences as predictive of changes in attitudes toward AA (Smith, 1993). However, this work focused on a different model of support, examining AA attitudes as a proxy for racial attitudes and including predictors consistent with prediction of prejudice (e.g., empathy, attributional complexity). Perhaps what distinguishes the current work most clearly from each of the studies above is that I examined change over a 4-year period instead of change over a single year.

One investigation utilized the same longitudinal sample as the present study, but only for Asian American participants (Inkelas, 2003). This work included some of the diversity items, one of the AA items (one of six indicators used as outcome variables), items relevant to merit, and gender as measured in the current study but focused on developing a model of Asian American attitudes rather than a prediction model applicable across groups. Furthermore, the final model in this work did not include initial attitudes toward AA, suggesting aspects of this work most relevant to the impacts of diversity are cross-sectional rather than longitudinal investigation. Although there is some overlap between the measures used in

the current study and previous work, the goals of the current study are unique theoretically because I focus on data relevant to the literature on AA.

Method

Participants for the current study came from a longitudinal database from the MSS. The MSS examined student attitudes relevant to major diversity initiatives at the university. The present work examined data collected from students when they entered the University of Michigan in 1990 and 4 years later. The final sample included 801 White students, 90 African American students, and 171 Asian American students who completed both surveys. No data exist for the current sample regarding Asian student family country of origin; however, previous research with this dataset reported that 43% of students were of East Asian background, 23% were South Asian, 15% Filipino, 2% Vietnamese, and 17% were from other Asian countries or did not specify a background (Inkelas, 2004).¹ The largest remaining group was Hispanic/Latino students; however, data existed for only 51 of these participants. This sample was too small for the planned regression analyses so these students, as well as students indicating other ethnic backgrounds, were excluded from all analyses. Several sources describe data collection and instruments in detail (e.g., Gurin, 1992).

The African American sample included the most women (65.6%), followed by Asian Americans (50.9%), and Whites (48.7%). The vast majority of White (95.9%) and African American (97.8%) students were U.S.-born citizens, compared with roughly two thirds (66.5%) of Asian American students. The majority of White (71.1% father, 60.3% mother) and Asian American (87.2%, 74.5%) parents held a bachelor's degree or higher, but college degrees were less common for African American parents (38.0%, 41.7%). Most students' family homes were within 100 miles of the university (53.7% for White, 65.1% for African American, 51.8% for Asian American). White students indicated that both the neighborhood where they grew up (90.8%) and the high school they attended (83.4%) were "nearly all White" or "mostly White." Asian Americans reported slightly more diversity in both neighborhood (74.5%) and high school (66.7%). African Americans reported the fewest Whites in their neighborhoods (28.2%) and high schools (31.8%). With regard to reasons for attending the University of Michigan, African Americans (53.9%) were more likely to cite a "racially and ethnically diverse student body" than Asian Americans (43.3%) or Whites (30.8%). However, the majority of African Americans (51.1%) and Asian Americans (51.8%) cited a "chance to meet people who are different from me in background and values" compared with less than half of the White students (41.8%).

Measures

All measures, except where noted, reflect responses at the 4-year follow-up.

AA attitudes. Two items measured at admission and again in the fourth year serve as attitude measures. One item, referred to in this article as AA Quality read, "Affirmative action for people of color, despite its underlying concern for equality, has helped reduce the academic standards for colleges and universities." The second item, referred to as Different Criteria, read, "Different

admissions criteria with respect to SAT and ACT scores may be justified for some students of color." Although this item did not specifically mention AA, it does reflect use of different selection procedures that may be relevant to certain applications of AA. Responses on both item ranged from 1 (*strongly agree*) to 4 (*strongly disagree*). Coding reversed the second item so that higher scores on both measures indicated more support for AA.

Diversity experiences. Eight items measured diversity experiences. One item addressed the extent of exposure to information or activities devoted to understanding other groups and interracial or interethnic relationships in courses, readings, lectures, and discussions (1 = *not at all* to 5 = *a great deal*). The remaining items addressed whether students perceived that a specific course or program had an important impact on their diversity views, and whether the student participated in activities at the university such as Hispanic Heritage Celebration, Native American Month or Annual Pow Wow, Martin Luther King Symposium, Asian American Awareness Week, Black History Month, or Intergroup Dialogues. On several of these items, participants indicated they were not aware of the events. For each of these items, I created a new variable where 1 = *yes* and 0 = *no or not aware*.² A composite score, computed by standardizing scores on each item and then summing those items, represents diversity experiences (e.g., Gurin et al., 2004). For regression analyses, each item was standardized within ethnicity. For example, the diversity experience score for White participants reflects distance from the mean for other Whites. However, comparisons between groups on this measure used a standardized score based on all participants included in the study.

Merit. The merit scale consisted of four items relevant to economic success. Items included agreement with a series of items positing reasons for why people in the United States are poor or rich. Participants rated each item on a scale from 1 (*very important*) to 3 (*not at all important*). Items included lack of thrift and proper money management by poor people, lack of effort by the poor themselves, hard work and initiative by the rich, and personal drive and willingness to take risks by the rich. The final index

¹ Comparisons of Asian students who were U.S.-born and those who were naturalized citizens revealed differences on the economic concern variable, but none of the other predictors or outcome measures. Naturalized citizens were more likely than U.S.-born students to indicate economic concerns. Results are consistent with the economic experiences of recent immigrants but suggest that U.S.-born and naturalized Asian students did not differ importantly on attitude or experience variables.

² To investigate whether "not aware" and "did not attend" categories could be collapsed, analyses examined differences between participants with these responses for the eight event participation items. Analyses compared not aware and not attending participants on the predictor variables (excluding diversity participation) and the dependent measures. These analyses produced 240 possible comparisons; however, for several participation items in the African American and Asian American samples, too little data existed in the not aware category to allow for comparison. The final analyses included 190 comparisons, 15 (7.9%) that demonstrated significant differences between not aware and did not participate groups. This value is very close to the number of significant differences that would exist by chance (5%), suggesting that there were not appreciable patterns of difference between these two groups and indicating that collapsing these categories was appropriate.

Table 1
Means and Percentages for Outcome and Predictor Variables by Ethnic Group

Variable	White men (n = 415)	White women (n = 394)	African American men (n = 31)	African American women (n = 59)	Asian American men (n = 84)	Asian American women (n = 87)	F	η ²
AA quality (incoming)	2.5 _a ^y	2.6 _{ab} ^y	3.0 _{bc} ^y	3.5 _d ^y	2.8 _{abc} ^y	2.9 _{bc} ^y	23.7 ^{**}	.10
AA quality	2.3 _a ^z	2.6 _{ac} ^y	3.5 _b ^z	3.6 _b ^y	2.4 _a ^z	2.8 _c ^y	48.3 ^{**}	.19
Different criteria (incoming)	1.9 _a ^y	1.8 _a ^y	2.7 _b ^y	2.4 _b ^y	2.2 _{bc} ^y	2.0 _{ac} ^y	14.5 ^{**}	.06
Different criteria	2.0 _a ^z	2.1 _a ^z	3.0 _b ^y	2.9 _b ^z	2.3 _a ^y	2.3 _a ^z	16.2 ^{**}	.07
Belief in merit	9.4 _a	8.7 _{abc}	7.8 _d	8.0 _{cd}	9.3 _{ab}	8.6 _{bcd}	14.9 ^{**}	.07
Prevalence of discrimination	5.6 _a	6.1 _{ab}	7.0 _{de}	7.5 _d	6.2 _{bc}	6.7 _{ce}	36.8 ^{**}	.15
Diversity participation	-1.4 _a	0.3 _{bc}	4.0 _d	4.3 _d	-0.9 _{ab}	1.6 _c	38.5 ^{**}	.15
							χ ²	V
Personal experience (%)	30 _a	32 _{ab}	55 _{bc}	47 _{bd}	31 _{acd}	44 _{bd}	33.0 ^{**}	.18
Liberal? (%)	28 _a	53 _{bc}	55 _{ac}	66 _c	33 _{ad}	55 _{bcd}	64.5 ^{**}	.25
Economic concern (%)	56 _a	59 _a	77 _{ac}	85 _{bc}	50 _{ad}	38 _d	38.9 ^{**}	.19

Note. Means or percentages with differing subscripts (a, b, c, d, e) differ at α = .05 between ethnic/racial groups. Means with differing superscripts (y, z) differ pre-post. Tukey HSD tests were used to compare means, Chi-square tests with Bonferonni Adjustment were used to compute percentages, and paired t-tests were used to compare pre-post scores. AA = affirmative action.
* p < .05. ** p < .01.

reversed item scoring and then summed the items, creating a variable that ranged from 4 to 12, where higher scores indicated stronger merit beliefs.

Prevalence of discrimination. The prevalence of discrimination scale included two items measured on a scale from 1 (*strongly agree*) to 4 (*strongly disagree*). Items included “Most people of color are not longer discriminated against in this country” and “A person’s racial background in this society does not interfere with achieving everything he or she wants to achieve.” On the final composite variable scores ranged from 2 to 8, with higher scores indicating stronger perceptions of the existence of discrimination.

Personal experience of discrimination. A single item asked whether participants ever personally experienced verbal or physical harassment because of their racial or ethnic background, religion, gender, or sexual orientation during college. Initial coding of the variable was reversed to create an index where 1 = *yes* and 0 = *no*.

Liberalism. A single item (1 = *extremely liberal* to 7 = *extremely conservative*, 8 = *haven’t thought much about it*) addressed political orientation. I coded participants as either liberal (those classifying themselves as slightly liberal to extremely liberal) or not liberal (including “moderate, middle of the road,” slightly to extremely conservative, and “haven’t thought about it”), yielding an index where 1 = *liberal* and 0 = *not liberal*.

Economic concerns. Three items addressed student economic concerns. Students indicated either agreement or disagreement (1 = *strongly agree* to 4 = *strongly disagree*, with 9 = *haven’t thought about this*) with items addressing concerns about financing their education and whether financial concerns interfered with their performance in college. A single composite variable, representing the presence or absence of economic concerns, was constructed from these three questions. Participants indicating agreement on any item received a code of 1 = *concerned*. All other participants, including those who had not thought about issues, received a code of 0 = *not concerned*.

Gender and ethnicity. Two items addressed gender and racial/ethnic identity. With regard to racial/ethnic identity, I examined

data for only self-identified White, African American, and Asian American participants. Gender (1 = *woman*, 0 = *man*) is a predictor variable in the model but results for White, African American, and Asian American participants are examined separately.

Results

Differences Between Ethnic Groups

Table 1 compares predictors and outcomes by gender-ethnicity combination. In general, African Americans reported the greatest support for AA, the strongest perceptions of the prevalence of discrimination, the least belief in merit, the most personal experiences with discrimination, and the most diversity participation with few differences observed between African American men and women on these items. Asian Americans tended to fall between Whites and African Americans on most items. Notably, Asian American women were more likely than men to participate in diversity events and were more supportive of AA with regard to impacts on quality. White participants indicated the least support for AA, the weakest belief in the prevalence of discrimination, low rates of personal experience with discrimination, and somewhat limited diversity participation. Among Whites, women were more likely to participate in diversity events. Broadly, these data suggest that African Americans and Whites endorse divergent views on most items and that Asian Americans express views somewhere in between. Diversity participation data deserve special mention. African Americans, and to a lesser extent Asian American women, indicated considerable diversity participation. However, Asian American men and Whites indicated comparatively less participation. Tables 2,3, and 4 present correlations between variables and scale reliabilities for each ethnic group.

Regression Analysis Strategy

Analyses used hierarchical multiple regression, entering all predictors but diversity participation in the first step, and then entering

Table 2
Correlations Among Outcome Measures and Predictors for White Participants

Variable	1	2	3	4	5	6	7	8	9	10	11
1. AA quality											
2. AA quality (incoming)	.33**										
3. Different criteria	.42**	.14**									
4. Different criteria (incoming)	.22**	.27**	.26**								
5. Merit	-.34**	-.11**	-.28**	-.12**	$\alpha = .69$						
6. Belief in prevalence of discrimination	.36**	.15**	.39**	.13**	-.31**	$\alpha = .69$					
7. Diversity experiences	.28**	.08*	.32**	.08*	-.28**	.35**	$\alpha = .59$				
8. Personal experience prejudice? (0 = No, 1 = Yes)	-.02	.06	-.01	-.03	.01	.11**	.15**				
9. Liberal? (0 = No, 1 = Yes)	.23**	.14**	.31**	.10**	-.32**	.33**	.30**	.08*			
10. Woman? (0 = No, 1 = Yes)	.22**	.09*	.03	-.03	-.21**	.20**	.24**	.10**	.23**		
11. Economic Concerns? (0 = No, 1 = Yes)	.01	-.01	-.10**	-.03	-.03	.01	.00	-.02	-.03	.02	$\alpha = .74$

Note. AA = affirmative action.

* $p < .05$. ** $p < .01$.

diversity participation in the second step. Of note here is the participant's incoming year score on each outcome measure as a predictor. This approach allows for a test of the predictors over and above what is explained by initial attitude. Put another way, these tests represent prediction of change in AA attitudes.

White Participants

Data screening and missing data. Of the 820 White participants for whom there existed data for the pretest and posttest, 634 (77%) included complete data on all variables. For the most part, missing data was sparse, with most participants who had missing data missing scores on one (56%) or two items (24%). Those participants ($n = 9$) with missing data on over 25% of the items were eliminated from future analyses. I used maximum likelihood estimation to estimate values for the remaining missing data (see Schafer & Graham, 2002). Items included in the participation in diversity events scale and the personal experience of discrimination variable comprised dichotomous measures that required special attention in the imputation process. Maximum likelihood estimation assigns continuous values to items. In these cases, imputed scores that exceeded the mean for the item received a 1 (yes) code and those at or below the mean received a 0 (no).

Scores on the discrimination, incoming AA Quality, merit, and diversity participation variables were skewed but normalized considerably by transformations. Variables were screened for multivariate outliers with two cases meeting omission criteria and removed from further analyses. Although significant correlations existed between many predictors, none were large enough to cause multicollinearity concerns. In addition, examination of the conditioning index and variance proportions (e.g., Belsley, Kuh, & Welsch, 1980) did not reveal any problems. Finally, residual plots indicated no obvious problems with linearity, normality, or homoscedasticity (e.g., Tabachnick & Fidell, 2001).

Tests of hypotheses. Regression analyses, presented in Table 5, supported the primary hypothesis and several of the secondary predictions. Most prominently, diversity participation related positively to changes in the belief that AA did not hurt academic quality (AA Quality) and support for the use of different admissions criteria (Different Criteria). Individuals with more diversity experiences evidenced positive changes in support for AA. However, with regards to the AA quality item, this positive relationship did not mean that attitudes became more positive. As noted in Table 1, White participants experienced a significant overall drop in AA quality beliefs, meaning that participant's attitudes changed

Table 3
Correlations Among Outcome Measures and Predictors for African American Participants

Variable	1	2	3	4	5	6	7	8	9	10	11
1. AA quality											
2. AA quality (incoming)	.21										
3. Different criteria	.26*	-.04									
4. Different criteria (incoming)	-.15	-.18	.19								
5. Merit	-.20	.02	-.13	.00	$\alpha = .68$						
6. Belief in prevalence of discrimination	.27**	.29**	.15	.07	-.19	$\alpha = .61$					
7. Diversity experiences	.47**	.10	.26*	.14	-.22*	.15	$\alpha = .61$				
8. Personal experience prej? (0 = No, 1 = Yes)	.35**	.00	-.08	-.10	-.08	.10	.23*				
9. Liberal? (0 = No, 1 = Yes)	.23*	.11	.20	.15	-.05	.18	.29**	.09			
10. Woman? (0 = No, 1 = Yes)	.08	.31**	-.09	-.12	.06	.25*	.02	-.07	.11		
11. Economic concerns? (0 = No, 1 = Yes)	.21*	.02	-.18	.01	.11	-.03	.20	.17	-.12	.09	$\alpha = .69$

Note. AA = affirmative action.

* $p < .05$. ** $p < .01$.

Table 4
Correlations Among Outcome Measures and Predictors for Asian American Participants

Variable	1	2	3	4	5	6	7	8	9	10	11
1. AA quality											
2. AA quality (incoming)	.13										
3. Different criteria	.38**	-.04									
4. Different criteria (incoming)	.04	-.06	.07								
5. Merit	-.30**	.03	-.35**	-.01	$\alpha = .66$						
6. Belief in prevalence of discrimination	.27**	-.05	.29**	-.02	-.29**	$\alpha = .61$					
7. Diversity experiences	.32**	.12	.28**	.05	-.24**	.26**	$\alpha = .53$				
8. Personal experience prej? (0 = No, 1 = Yes)	.04	.16*	.28**	.01	-.15	.24**	.18*				
9. Liberal? (0 = No, 1 = Yes)	.16*	.02	.29**	.00	-.19*	.12	.21*	.11			
10. Woman? (0 = No, 1 = Yes)	.24**	.08	-.01	-.15	-.21**	.18*	.34**	.13	.22**		
11. Economic concerns? (0 = No, 1 = Yes)	-.06	-.06	-.13	-.08	-.02	.01	-.03	-.05	-.08	-.12	$\alpha = .73$

Note. AA = affirmative action.
* $p < .05$. ** $p < .01$.

to reflect increased beliefs that AA hurt university quality. To further examine the positive relationship between attitude change and diversity participation found in the regression analysis, I split participants into high and low diversity participants groups based on the mean diversity score. Students with less participation became more negative between admission and their fourth year on the AA quality measure ($M = -0.23$) but scores were static for students who participated more ($M = 0.02$). This result suggests that diversity experiences buffered against negative changes in attitudes.

A number of the secondary predictions also received support. Greater perceptions of the prevalence of discrimination and less belief in merit associated positively with changes on both outcome variables. Similarly, participants who believed they

had experienced discrimination evidenced negative changes in AA support on both variables. Less consistent were results for economic concerns, liberalism, and gender. Participants with economic concerns supported use of different criteria less, but these concerns did not impact quality assessments. Liberal participants experienced positive changes with regard to Differential Criteria but not AA Quality. Given the significant zero-order correlation between liberalism and AA Quality, it appears that liberalism is associated with this belief but that the relationship may also be explained by other variables in the model. Women experienced more positive changes than men with regard to AA Quality ratings but the pattern was reversed regarding Different Criteria. The second result seems to be produced by statistical suppression (e.g., MacKinnon, Krull, &

Table 5
Predicting Support for Each Policy From Belief Variables and Individual-Level Variables

Variable	White		African American		Asian American	
	AA quality	Different criteria	AA quality	Different criteria	AA quality	Different criteria
Incoming score	.27**	.18**	.13	.14	.13	.02
Belief in merit	-.19**	-.11**	-.10	-.03	-.19*	-.25**
Discrimination	.21**	.24**	-.14	.10	.17*	.14*
Personal experience	-.08**	-.06*	.23*	.05	-.11	.17**
Liberal?	.02	.15**	.09	.07	.05	.21**
Woman?	.09**	-.10**	.00	-.09	.09	-.23**
Economic concern	.02	-.08*	.14	-.22*	-.04	-.13*
R ² change Step 1	.279**	.256**	.287**	.130	.179**	.284**
Diversity participation	.12**	.18**	.31**	.23*	.19*	.18*
R ² change Step 2	.011**	.026**	.072**	.041*	.030*	.027*
R ² total	.290** ^a	.282** ^a	.359** ^b	.171** ^b	.206** ^c	.312** ^c
R ² change over incoming only	.065**	.090**	.204**	.054*	.094**	.078**
R ² change over incoming and openness	.041**	.065**	.168**	.045*	.055**	.040**

Note. AA = affirmative action; Discrimination = prevalence of discrimination. Change over incoming score reflects a model entering incoming score as the only predictor in Step 1 and Diversity Participation in Step 2. Change over incoming score and openness reflects a model entering incoming score and openness as the only predictors in Step 1 and Diversity Participation in Step 2. ^a $df = 8, 800$. ^b $df = 8, 81$. ^c $df = 8, 162$.
* $p < .05$. ** $p < .01$.

Lockwood, 2000), because there was a positive zero-order correlation between gender and use of different criteria.

African American Participants

Data screening and missing data. Data screening and missing data procedures mirrored those discussed above. Of the 92 African American participants with data for the pretest and posttest, 60 (65%) had complete data. Most participants with missing data only were missing scores on one (44%) or two items (28%). Two cases with missing data on 25% or more of the scale items were eliminated from analyses. Both AA quality items and the perception of discrimination variable were transformed to achieve normality. There were no multivariate outliers, no problems with multicollinearity, and no issues with residual distribution assumptions.

Tests of hypotheses. Regression analyses, represented in Table 5, supported the diversity hypotheses. Among the other predictors, only personal experiences of discrimination attained a traditional level of significance for the quality of AA outcomes measure. Economic concerns predicted use of different criteria but such that more concern related to less support.

Asian American Participants

Data screening and missing data. Of the 174 Asian American participants with data for the pretest and posttest, 145 (83%) had complete data. Most participants with missing data were missing scores on one (62%) or two items (17%). Two cases included missing data on 25% or more of the scale items and were eliminated from analyses. The perception of discrimination and diversity measures were normalized through transformations. Analyses excluded one case identified as a multivariate outlier. There were no problems with multicollinearity, and no issues with residual distribution assumptions.

Tests of hypotheses. Regression analyses, shown in Table 5, again supported diversity hypotheses. Diversity experiences related positively to changes on both AA items. Like White students, Asian American students also demonstrated an overall drop in support on the AA quality item. Similarly, students with less participation demonstrated less support on the AA quality measure ($M = -0.33$) but scores did not change for students who participated more ($M = 0.00$). Less belief in merit and stronger beliefs in the prevalence of discrimination related to positive changes in beliefs about AA Quality. All predictors of Different Criteria were significant except incoming attitude. However, the results for sex and economic concerns were opposite predictions. Asian American women supported use of differential criteria less, as did those with economic concerns.

Addressing Potential Selection Effects

Although findings regarding diversity experiences were consistent across sample, issues of selection effects remain. It might be that those who participated in diversity experiences were more open to diversity and related issues when they arrived on campus. That is, diversity participation might not influence attitudes toward AA so much as initial openness to diversity. To test selection effects, analyses predicted each outcome from incoming scores on the outcome measure and from incoming openness to diversity.

The openness variable is a composite of the two items in focusing on reasons for attending University of Michigan (“racially and ethnically diverse student body” and “chance to meet people who are different from me in background and values”). As shown in Table 5, diversity participation remained significant associated with positive changes in attitudes for all analyses.

Discussion

Longitudinal data indicated that White, African American, and Asian American student diversity experiences associated positively with changes in attitudes toward AA, both in terms of beliefs that AA did not hurt academic quality and support for the use of different admissions criteria. Prediction was consistent across samples and outcome measures. Secondary hypotheses were primarily supported for White samples but received less compelling support from African American and Asian American samples. Impressively, diversity experiences added significantly over and above the prediction afforded by a number of established predictors of attitudes toward AA and variables representing potential selection effects. Although effect sizes (R^2 change) for diversity experience appeared small, it is important to note small effect sizes derived from analyses such as these speak to the strength of effects as they persist in the context of a conservative analysis (e.g., Prentice & Miller, 1992). As reported in Table 5, more liberal analyses, eliminating all predictors but incoming year score, yielded effect sizes ranging from .054 to .204.

Comparisons across ethnic groups revealed that on most items, African Americans and Whites endorsed divergent views, with Asian Americans' attitudes falling in between. Regarding diversity participation, Asian American men and Whites indicated the lowest rates of participation. This suggests that to a large extent, diversity participation opportunities did not reach some of the individuals who might benefit most from these experiences. A number of predictor variables performed as expected for White participants but were not significantly related to the attitudes of African Americans or Asian American's attitudes toward the AA quality variable. These differences may reflect the limited power afforded by samples that were considerably smaller than for White participants, however the result might also suggest that some variables in the present model are not as useful for predicting African or Asian American attitudes. As noted in previous work, aspects of the current model draw on a body of research focused primarily on White attitudes (Kravitz & Klineberg, 2000), other predictors such as ethnic identification (e.g., Inkelas, 2003) may be more relevant to the attitudes of non-Whites.

The impact of diversity experiences on changes in support for AA is consistent with work on the positive impacts of diversity in other areas and studies focusing on the roles of diversity beliefs in promoting support for AA. These data demonstrate specifically that diversity participation promotes more positive AA attitudes. With regard to the AA literature, this work speaks to promoting positive AA attitudes and reducing opposition to AA policies. Positive diversity experiences promote increased recognition of the compatibility of group differences and valuation of the contributions of other groups (Gurin et al., 2002, 2004). Individuals who value diversity are likely to support policies such as AA that promote greater diversity in admissions and hiring (Aberson & Haag, 2003). Consistent with fairness heuristic theory, diversity

experiences appeared to promote support for AA. Taken as a whole, previous work and the current study suggest that organizations and universities might garner greater support for AA policies by providing positive experiences with diversity as these experiences promote valuation of diversity.

Also of note is the role of diversity experiences in promoting less negative perceptions of the impact of AA on university quality. White and Asian American students' attitudes regarding AA's impact on university quality became more negative in their fourth year on campus, suggesting that student attitudes toward AA became less positive over time. However, those students with more diversity experiences did not become more negative in their perceptions of AA impacts on quality. This result is especially important in light of the stigmatizing effects of AA on beneficiaries (e.g., Heilman et al., 1992; Resendez, 2002) and work examining the stress associated with discriminatory evaluations (King, 2005). The perception that AA hurt university quality suggests that students who benefited from AA were seen as less deserving and worse students than other students. In this manner, diversity experiences may promote less stigmatization of students admitted under AA or those perceived as admitted under AA.

Limitations

Although these data provide longitudinal evidence examining prediction of changes in attitudes toward AA, it is important to acknowledge that this work focused on college student attitudes. The college years represent a formative time in a young adult's life wherein diversity experiences may have their most pronounced impact. It is not clear whether diversity experiences impact older adults similarly, and it is reasonable to assume that attitudes change less as individuals get older. However, college students, and even younger individuals, are a meaningful population to study because these are among the only groups for whom large-scale, mandated diversity educational experiences are possible. Still, it is unclear whether findings regarding diversity experiences generalize to the public in general or even to students at other universities.

Another issue is measurement. Some measures were not ideal in that they did not address all aspects of constructs. For example, the experiences of discrimination measure did not address frequency or intensity of discrimination. This may explain why personal experiences of discrimination failed to consistently predict attitudes. Also, the use of single-item measures of outcomes and several predictors does not establish reliability.

Perhaps the primary limitations to the present data are selection effects. Although it is possible that some students attended diversity events as part of mandatory coursework, it is reasonable to assume that many students who attended did so voluntarily. Analyses that controlled for incoming attitudes on the outcome measures and for openness to diversity rule out some selection effects. However, there remains the possibility that students who voluntarily attended diversity events differed importantly from those who did not attend or attended but did not value the experience (e.g., Nagda & Zúñiga, 2003). For example, students who voluntarily attended may have been more strongly influenced by the experience, may have enjoyed the event more, and may have become more committed to attending future events than those students who were required to attend. In that light, it is not possible

to definitively claim that diversity participation causes positive changes in AA attitudes. Future research might examine factors associated with improving attendance at such events and the aspects of diversity experiences that promote positive attitude changes.

Conclusions

The current study examined longitudinal data relevant to changes in attitudes toward AA. For White, African American, and Asian American students, more diversity experiences related to more positive changes in attitudes than were observed for students with fewer diversity experiences, even when controlling for a number of established predictors of attitudes toward AA. These results add importantly to the literature on AA attitudes because data demonstrate prediction of attitude change over a 4-year period and suggest that experiences with diversity make for lasting attitude change.

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