

Interracial contact and changes in the racial attitudes of white college students

Mary J. Fischer

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Abstract College campuses are among the most racially diverse settings in our segregated society. For many students, especially non-Hispanic whites, college represents the first time they have come into significant contact with members of other groups. Using data from the National Longitudinal Survey of Freshmen, this paper explores the effects of campus diversity and various types of interracial contact on the racial and ethnic attitudes of white students over the course of four years in college. The findings are largely consistent with the contact hypothesis, particularly with respect to changes in attitudes towards blacks. White students who report having a close friend who is black and those who have dated or had a romantic partner who is black express less social distance towards blacks in their senior year, as do white students who were involved in extracurricular activities in which blacks are the majority. Participating in extracurricular activities dominated by blacks is also associated with more positive views of the impact of affirmative action on academic standards expressed as students were leaving college. Although there is evidence that both stereotypes and social distance towards groups are mitigated by intergroup contact, stereotypes appeared to be somewhat more resistant to change. The findings suggest that institutions should continue efforts to diversify their student populations, and also promote involvement in extracurricular activities for students from all groups.

Keywords Racial attitudes · Contact hypothesis · Affirmative action

Nowhere in US society have debates over racial and ethnic diversity been more focused than in the context of higher education. Colleges and universities are among the most diverse settings in US culture, a diversity which has been actively cultivated through the recruitment efforts of college admissions offices. Although these policies have

M. J. Fischer (✉)
University of Connecticut, 344 Mansfield Rd. Unit 2068, Storrs, CT 06269, USA
e-mail: mary.fischer@uconn.edu

come under frequent attack, there is much research to suggest that there are numerous benefits to having racially and ethnically diverse educational settings for both majority and minority students. For instance, [Gurin \(1999\)](#) reports in her testimony prepared for the Supreme Court that students in diverse educational environments are more civically and intellectually engaged and exhibit greater gains in intellectual and academic skills than those in less diverse settings. This exposure to diversity may also have longer term benefits to students. [Gurin \(1999\)](#), for example, finds that students attending more diverse colleges report more diversity in their friendship, neighborhood, and work settings nine years after college matriculation.

This paper furthers the research on the impact of diversity in higher education by examining whether campus diversity results in changes in racial attitudes. Due to the generally high levels of racial residential segregation in many communities, most students entering post-secondary education have grown up in neighborhoods and attended schools that are dominated by their own racial/ethnic group. For these students, the most significant exposure they have had to racial and ethnic diversity is the peer group they encounter upon entering the university setting. The purpose of this study is to examine whether the initial feelings of social distance and stereotypes held about other racial/ethnic groups at college entrance are reduced over the course of four years of prolonged and varied interracial contact on campus. In doing so, this study makes several unique contributions to the literature, including being the first to examine both stereotypes and attitudes held about three separate out-groups on multiple campuses. In addition, this study includes several measures of contact, as well as precollege interracial experiences, which provide both important controls for selectivity as well as a baseline from which to examine changes in attitudes over the course of college.

1 Interracial attitudes and interracial contact

Despite the changing nature of interracial relations in the United States, most researchers examining interracial attitudes draw from the [Allport \(1958\)](#) half century old definition of prejudice as “antipathy based on faulty or inflexible generalization” (p 9). This definition encompasses two essential elements of prejudice, a negative attitude (or antipathy) combined with overgeneralized beliefs (or stereotypes). Public opinion polling shows general improvement in racial attitudes of whites in the United States over the past several decades ([Schuman et al. 1997](#)), trends which have coincided with unprecedented increases in racial and ethnic diversity. The roots of these interracial attitudes and, perhaps more importantly, what leads to changes in these attitudes have long been a source of fascination for sociology. Many researchers have drawn upon the [Allport \(1958\)](#) contact hypothesis as a framework for understanding the socio-structural conditions under which interracial attitudes are transformed. The basic premise of the contact hypothesis is that negative stereotypes about other groups arise through lack of personal contact and interaction between groups. From this perspective, spatial proximity is a minimal criterion for the erosion of negative racial attitudes because it allows the possibility of interaction between minority and majority groups that could dissolve these prejudices.

However, contact alone may not be sufficient for breaking down the social distance between groups that is formed and reinforced through years of social and spatial segregation. Allport (1958) recognized the importance of the quality of contact on prejudice reduction, including the relative status equality of participants, cooperative interdependence of actors, and the express support for cross-group interaction by persons in authority (Forbes 1997; Pettigrew 1998a). Because residential colleges and universities are characterized by these conditions, they are an ideal setting for exploring changes in interracial attitudes and, in particular, for testing the premises of the contact hypothesis. Students by definition are status equals and all share the same goal of attaining a college degree. Furthermore, colleges and universities are among the most embracing of diversity in US culture. In addition to these conditions, the mechanism by which contact affects racial attitudes is also important to consider. Pettigrew (1998a) specifies four interrelated processes through which contact may operate to facilitate these changes: learning about the outgroup, changing behavior, the generation of affective ties, and ingroup reappraisal. As he points out, these processes are all met through interracial friendship formation, which is likely why this form of sustained and close contact in particular is more consistently related to changes in attitudes.

Empirical research has generally supported the premise that intergroup contact leads to improved racial attitudes (eg. Boisjoly et al. 2006; Dixon and Rosenbaum 2004; Jackman and Crane 1986; McClelland and Linnander 2006; Pettigrew and Tropp 2006; Powers and Ellison 1995; Sigelman and Welch 1993), although the studies vary in their findings of the specific type, intensity, and duration of contact that has the most impact on attitudes. In a recent meta-analysis of 515 studies on the contact hypothesis, Pettigrew and Tropp (2006) report fairly consistent findings across studies and samples that intergroup contact reduces prejudice.¹ A more specific meta-analysis of Allport's conditions of contact reveals even larger decreases in prejudice when these conditions are met, with institutional support appearing to be a particularly significant condition (Pettigrew and Tropp 2006). Other research points to differences in the type of contact that might be most relevant for prejudice and stereotype reduction, factors which may also facilitate friendship formation. For instance, Dixon and Rosenbaum (2004) examined the effects of white's contact with blacks and Hispanics on changes in stereotypes about these groups. Looking at multiple types of contact, Dixon and Rosenbaum's findings generally support the idea that contact with other groups lead to reductions in white's stereotypes, but the extent of reduction is both group and context dependent. Specifically, the anti-black stereotypes of whites were reduced by school and workplace contact, but anti-Hispanic stereotypes were reduced the most through contact in the community (Dixon and Rosenbaum 2004).

Because the context of higher education is in many ways ideal for examining the impact of interracial contact on changes in interracial attitudes, it is not surprising that several studies are college based (Duncan et al. 2006; Levin et al. 2003; McClelland and Linnander 2006; Odell et al. 2005). McClelland and Linnander (2006) examine the impact of intimate social contact and exposure to information on racial issues on

¹ Pettigrew and Tropp employed strict rules of inclusion for studies in their meta-analysis. Of particular note is that they only included studies with measures of established inter-group contact rather than mere proximity.

changes in interracial attitudes and social distance among students at two small predominantly white east coast liberal arts schools. They found that white students who had more intimate forms of contact with black students, such as having a black friend or dating interracially, had lower levels of social distance towards blacks than those with less or no personal contact. Similarly [Levin et al. \(2003\)](#), and [Odell et al. \(2005\)](#) also find that interracial friendships were significantly related to reductions in social distance between groups.

However, forming friendships with members of other racial/ethnic groups, although facilitated by structural conditions ([Duncan et al. 2006](#); [Fischer 2008](#); [Hallinan and Teixeira 1987a,b](#); [Joyner and Kao 2000](#); [Moody 2001](#); [Quillian and Campbell 2003](#); [Sigelman et al. 1996](#)), is a voluntary behavior and therefore may be more likely among students who are already less prejudiced. Indeed, in previous research I found that while the racial composition of the campus is significantly related to having more diverse friendship networks for all groups, prior orientations towards these groups also play a role ([Fischer 2008](#)). In a study specifically designed to address this selection problem, [Duncan et al. \(2006\)](#) examine the impact of having a randomly assigned African American roommate in the freshman year on interracial attitudes and relationships later in college for a sample of white students at a large state university. The white students who were randomly assigned minority roommates were significantly more likely to endorse affirmative action policies as upperclassmen, and also rated their conformability in interacting with minority groups more highly than those who did not have a minority roommate.

Several studies have discussed the problems in testing the contact hypothesis, particularly the issue of self-selection bias mentioned briefly above ([Dixon 2006](#); [Pettigrew 1998a](#); [Pettigrew and Tropp 2006](#); [Powers and Ellison 1995](#)). The selection bias problem is rooted in the idea that persons who are the most prejudiced might simply avoid intergroup contact altogether, while those who have more intergroup contact may have chosen these situations precisely because they are less opposed to such contact. The impact of contact could therefore be exaggerated in studies that do not contain appropriate controls for selection bias. [Pettigrew and Tropp \(2006\)](#) compare studies in their meta-analysis in which participants either have or do not have choice in their interracial contact. As expected, studies in which participants choose a diverse environment have larger mean effects size for contact, but contact is still an important factor in studies in which participants have no choice in contact ([Pettigrew and Tropp 2006](#)). Studies that have considered self-selection bias in their designs have concluded that contact generally outweighs any impact of selection.

This study also has the advantage of including students from multiple colleges and universities that range in racial/ethnic composition and other characteristics, which is important for seeing any patterns in the effects of campus racial composition on changes in interracial attitudes. For many studies testing the contact hypothesis, racial composition is the primary independent variable for measuring interracial contact. This study utilizes several other measures of more proximate contact that vary in intimacy which allows us to discern any differences in the effects of type of contact on interracial attitudes. In addition, many studies examining the impact of diversity on friendship choice do not have information on attitudes and experiences prior to interracial contact, and therefore may suffer from problems of reverse causality and selection

bias (Pettigrew 1998a). This study uses rich background information on students prior to coming to college and on their attitudes upon entering colleges to provide important controls for selectivity and a baseline from which we can discern changes over time. Finally, in looking at racial attitudes towards three different out-groups, this study allows us to examine whether interracial contact may operate differently depending on the out-group in question. The next section discusses in greater detail the sample and measures used to explore changing racial attitudes on campus.

2 Data and measures

The data used in this paper comes from the National Longitudinal Survey of Freshmen, which is a stratified random sample of nearly 4,000 white, black, Hispanic, and Asian first time college students who matriculated into 28 selective colleges and universities in 1999.² The first wave of data was conducted via in-person structured interviews that took place in the fall of the first year. Students were asked detailed questions about the neighborhood, school, and family environments they experienced in early childhood (age 6), early adolescence (age 13), and as seniors in high school. Students were also asked about their expectations and goals regarding education, their feelings of self-worth and self-efficacy, and detailed questions about their racial attitudes. A second wave of data was collected in the spring of the first year, with updates being collected every spring up until their senior year in college (wave 5). The annual spring surveys contain some standard questions that are asked each time, but also contain numerous questions that are survey specific. For instance, the wave 3 survey contained several detailed network and activity questions that were rather lengthy and did not appear again on subsequent surveys. The questionnaire in the senior year (wave 5) contained numerous questions about post-graduation plans, as well as evaluative questions about the college experience and repeated the racial attitude questions that were asked in wave 1. This paper uses survey data from white students at 27 schools, with a starting sample size of 998. Attrition by wave 5 and missing data from some questions brings the final sample size to 715 to 775, depending on the outcome measure in question. Restricting the present study to just white students helps to simplify the analysis, though future analyses will examine racial attitudes for other groups. A more extensive description of the study design and instruments can be found in *The Source of the River* (Massey et al. 2002).

3 Measuring interracial attitudes

The primary concern of this paper is to measure the extent to which racial attitudes change over the course of four years of college. As such, the central dependent

² Howard is excluded from the current study, bringing the number of colleges and universities to 27. The remaining schools used in this paper are: Barnard, Bryn Mawr, Columbia, Denison, Emory, Georgetown, Kenyon, Miami (of Ohio), Northwestern, Oberlin, Penn State, Princeton, Rice, Smith, Stanford, Swarthmore, Tufts, Tulane, University of California at Berkeley, University of Michigan at Ann Arbor, University of North Carolina at Chapel Hill, University of Pennsylvania, Notre Dame, Washington University, Wesleyan, Williams, and Yale.

variables are measures of racial attitudes towards blacks, Hispanics, and Asians. I examine two types of racial attitudes, the social distance that students feel towards each group and the degree to which student hold specific stereotypes about each group. The specific measurement of these concepts is discussed in greater detail below. The NLSF contains measures of both concepts that were collected as students were entering college (fall of the freshman year), as well as in the spring of their fourth year. The measures taken in the fourth year will serve as the main dependent variables measuring racial attitudes after four years of college, while the measures from the first year will be used as controls for the student's initial orientations towards each group to account for selection effects in the models. In addition, I also examine attitudes about affirmative action expressed by white students in their senior year.

3.1 Social distance

In the survey administered as students were entering college and again in the survey in their fourth year, students were asked to rate on a scale from 0 (very close) to 10 (very distant) the degree of closeness they felt to each racial ethnic group in general and in particular to young men and young women in that group. These three items were combined to form a scale for each racial/ethnic group, such that there are four measures for each individual (including a rating of social distance felt towards their own group). This measure of social distance is similar to questions that are routinely asked in major surveys such as the National Election Survey to gauge the feelings of individuals towards other groups. Social distance is an inherently relative concept with people's perception of other groups necessarily being judged with respect feelings towards ones own groups. Following [Dixon \(2006\)](#), I create a measure of relative social distance for this paper that subtracts each respondents' rating of social distance to their own group from their rating of social distance to each out-group.

The means for measures are shown in [Table 1](#) for both the first year and senior year.³ Upon entering college, white students on average expressed the highest relative social distance towards Hispanics at 1.348, followed by Asians at 1.036, and Blacks at 1.036. (These numbers represent the difference between white's social distance score for each out-group compared to their social distance score for their own group). Limited prior exposure is a likely factor in explaining the high social distance ratings towards Hispanics by white students. In other research, I have found that white students were considerably more likely to report having at least one black friend in high school compared to having at least one Hispanic friend ([Fischer 2008](#)). By the senior year, the average relative social distance fell for all groups, but Hispanics remained the most socially distant group at 0.781.

³ The alpha scores for these scales are as follows: social distance to whites 0.778, social distance to blacks 0.734, social distance to Hispanics 0.760, and social distance to Asians 0.784.

Table 1 Mean values for changing racial attitudes variables, white students only

	Out group					
	Black		Hispanic		Asian	
	Mean	SD	Mean	SD	Mean	SD
<i>Interracial attitudes</i>						
Social distance (relative to whites)						
Entering college	1.036	1.234	1.348	1.447	1.045	1.357
Senior year	0.618	1.053	0.781	1.219	0.607	1.159
Stereotypes (relative to whites)						
Entering college	0.186	0.582	0.239	0.682	-0.450	0.634
Senior year	0.036	0.447	0.038	0.531	-0.373	0.588
<i>Interracial contact</i>						
Close contact						
Freshman year at least one friend (out of 10)	0.511	0.500	0.375	0.484	0.615	0.487
Soph. close friends from group (out of 4)	0.026	0.166	0.053	0.254	0.171	0.436
Sophomore romantic partner from group	0.003	0.055	0.007	0.083	0.021	0.144
Sophomore date from group	0.050	0.218	0.047	0.212	0.093	0.291
Roommate from group (sophomore)	0.069	0.254	0.065	0.246	0.180	0.384
Other contact						
% of extracurricular activities dominated by group	0.025	0.156	0.004	0.048	0.023	0.116
# of ethnic studies courses	0.005	0.071	0.125	0.340	0.024	0.166
Self-assessed contact in senior year	5.597	2.273	4.481	2.509	6.295	2.458
Structural factors						
Group % on campus (2000)	0.106	0.033	0.081	0.040	0.214	0.133
<hr/>						
Not out-group specific	Mean		SD			
<hr/>						
<i>Interracial attitudes</i>						
Agreement that affirmative action has weakened academic standards at university (senior year)	2.792		2.918			
<i>Demographic background</i>						
Male	0.476		0.500			
First generation college (no parent college)	0.093		0.291			
Foreign born parent	0.105		0.307			

Source National longitudinal survey of freshmen

3.2 Stereotypes

As students were entering college, they were also asked a series of questions about the extent to which they associate certain characteristics with each racial ethnic group (including their own). More specifically, students were asked to rate on a scale from 1 to 7 the degree to which each racial/ethnic group was characterized by different

behaviors such as “tended to be lazy” compared to “hard-working”, “gives up easily” compared to “sticks with it”, hard to get along with compared to easy to get along with, and unintelligent compared to intelligent.⁴ These questions are similar to those used in previous studies examining stereotypes (eg. [Dixon 2006](#); [Dixon and Rosenbaum 2004](#); [Taylor 1998](#); [Wilson 1996](#)). Higher values indicate more negative views of each group. These four items were combined into a scale representing stereotypes about each racial ethnic group (whites, blacks, Hispanics, and Asians). As with the social distance measures discussed above, these scaled items were transformed into scores relative to one’s own group, so the values listed in [Table 1](#) represent the difference in the stereotype scale for each group minus the value of the stereotype scale for whites.

The means for relative stereotypes expressed by whites towards blacks, Hispanics, and Asians are shown in [Table 1](#) at college entrance and in the senior year. Upon entering college, white students held the most negative stereotypes of Hispanics with an average score that was 0.239 above their rating for their own group. This is compared to an average of 0.186 for blacks. The average stereotype score for Asians was 0.450 *below* their scaled value for stereotypes toward their own group, indicating that Asians were perceived more positively with respect to these group stereotypes than whites viewed their own group. By the senior year, average stereotypes towards each group relative to whites declined, with similar rankings of blacks and Hispanics (0.036 and 0.038) and slightly attenuated positive views of Asians relative to whites (−0.373).

3.3 Affirmative action attitudes

Students were also asked a variety of questions in their senior year about their impressions of their campus after four years of college. One of these questions asked students to rate on a scale from 1=(strongly disagree) to 10=(strongly agree) the extent to which they agreed that affirmative action had lowered academic standards at their university. The final racial attitude explored in this paper examines the extent to which interracial contact, social distance, and group stereotypes are related to beliefs that affirmative action has detrimental effects on campus academics. The means for this variable are shown towards the bottom of [Table 1](#). White students on average scored 2.792 on this measure, which we could interpret as somewhat in disagreement with the statement. Approximately 19% of white students gave responses that indicated varying degrees of agreement with this statement (ie. scores ranging from 6 to 10).

4 Interracial contact

Multiple measures are used in this paper to capture the various types of interracial contact white students experienced in college. Many studies examining the contact hypothesis rely purely on measures of proximity such as the racial composition of the institution or group in question to ascertain contact. While this study includes a measure of the school’s racial composition, I have several other indicators of contact

⁴ The alpha scores for these scales are as follows: stereotypes about whites 0.563, stereotypes about blacks 0.610, stereotypes about Hispanics 0.601, and stereotypes about Asians 0.601.

that will help to distinguish what type of contact is most strongly related to decreased social distance and stereotypes, as well as whether the type of contact that is most important varies across different out-groups. These other measures of contact fall into two major categories, close contact and other forms of contact.

The most general measure of contact is the percentage of each group on campus. The average percent black across campuses was 21.4% Asian, 10.6% black, and 8.1% Hispanic. The racial composition of the campus does give us some sense for the likely visibility of minorities on campus, but does not speak specifically to the issue of the degree of contact individual students have with members of other groups. Fortunately the NLSF has more proximate measures of contact that can be examined. Close contact includes a measure of the number of friends the student reports having made from each out-group during the first year of college (out of 10), the number of close friends named from each group out of the four closest people the student identified in their sophomore year, whether the student reported having had a romantic partner from the group by the end of the sophomore year, whether the student reported having dated anyone from the group by the end of the sophomore year, and whether the student had a roommate from the group in the sophomore year.⁵ It is important to note the distinction between the two friendship questions. The question posed in the freshman year asked students about the racial composition of the ten closest friends they had made since coming to college, whereas the question on the sophomore year survey asked detailed questions about the four people to whom the student felt closest to and could include family members, as well as on or off-campus friends. These measures of close contact are voluntary with the exception of roommates, who are most likely chosen by the student by the sophomore year, but since students were not asked, we cannot know for certain.

The means for these measures of close interracial contact for white students are shown in Table 1 by out-group. In the sophomore year, 18% of white students reported having an Asian roommate, while nearly 7% had a black roommate and 6.5% had a Hispanic roommate. In terms of friendship, 62% of white students reported having at least one Asian friend out of their 10 closest friends in their first year, and when discussing their four closest friends (on or off campus) were most likely to name an on-campus Asian friend than any other out-group. Blacks were the second most commonly listed out-group out of the 10 closest friends made during the first year of college, with 51% of whites reporting at least one black friend compared to 38% who reported having at least one Hispanic friend. However, white students were more likely to report that one of their four closest friends on campus was Asian compared to Hispanic or black. More intimate relationships with out-groups were less common among white students. Nearly 10% of white students reported having dated an Asian, compared to 5% who had dated someone who was black and 4.7% who had dated a Hispanic. There were much lower percentages of whites who reported having an interracial romantic partner, with 2% reporting having an Asian romantic partner (either currently or in the past) and less than 1% reporting having either a Hispanic (0.7%) or black (0.3%) romantic partner.

⁵ Students were only asked about the race/ethnicity of their roommate in the sophomore year. The dating and romance measures here combine questions asked in the sophomore year about past and current dating.

The measures of other contact include the percent of extracurricular activities dominated by each out-group in the sophomore year, whether the student had membership in any group that was minority dominant, the number of ethnic studies courses the student took by the end of the sophomore year, and a dummy variable indicating whether the student took any ethnic studies courses. Ethnic studies courses included classes in African American Studies courses for black attitude outcomes, Latin American Studies for Hispanic attitude outcomes, and Asian American Studies for Asian attitude outcomes. Of the extracurricular groups reported by white students, about 2.5% were majority black and 2.3% were majority Asian. By contrast, less than 1% of extracurricular activities reported by whites in the sophomore year were majority Hispanic. There was significantly more variation in taking ethnic specific courses. Nearly 13% of white students reported having taken courses in Latin American studies, compared to 2.5% who had taken courses in Asian American studies, and less than 1% who had taken courses in African American studies.

There is a considerable gap in time between these measures of contact and interracial attitudes assessed at the end of the senior year. It is possible that sustained contact, as well as contact more proximate to the final wave of data collection, might have a greater bearing on attitudes expressed in the senior year. In order to capture this, a final set of models include a question from the senior year survey in which students assessed their degree of interaction with each racial/ethnic group in college, ranging from 0 (no interaction) to 10 (a great deal of interaction). White students on average reported having the most amount of interaction with Asians (6.295), followed by blacks (5.597), and reported the least amount of interaction with Hispanics (4.491). This rank ordering roughly mirrors the patterns of interaction described above, but represents the student's summary assessment of their interracial interactions at college.

4.1 Demographic background

Models will also include several demographic background measures, including parent's education, foreign born parents, and gender of student. Parents education is measured with a dichotomous variable indicating if neither parents attended college, versus having at least one parent who was college educated. A little over 9% of the whites in the sample are first generation college students (ie. neither parent attended college). In addition, whether either parent is foreign born is also included. Students who have a foreign born parent may have greater exposure to ethnic communities and therefore may acclimatize to exposure to other racial/ethnic groups more quickly than students who are not second generation Americans. Nearly 11% of the students reported having a foreign born parent.⁶ In addition, gender is controlled for in the models. Age and education are also commonly controlled for in research on racial attitudes (Krysan 2000), but this sample inherently controls for these factors as the students are all approximately the same age and have the same level of education. However, there are controls for parental education to capture any socioeconomic class differences among students in their racial attitudes.

⁶ All of the students in the NLSF are native born.

5 Methods

This paper uses ordinary least squares regression to examine the effects of interracial contact in college on changes in interracial attitudes by the senior year. Because the NLSF is a school based sample, the standard errors in all models are adjusted to correct for any unobserved heterogeneity using the CLUSTER command in STATA. However, preliminary tests examining intraclass correlations for the dependent variables reveals little evidence of clustering by school.⁷

The analysis takes place in several stages. First, I assess changes in stereotypes and social distance towards blacks, Hispanics, and Asians separately. These models are estimated in stages, first by examining the impact of demographic characteristics and initial attitudes, second by adding the percent of the group on campus, and third by adding the measures of interracial contact. This strategy allows us to see whether the relationship between interracial contact and changes in racial attitudes varies depending on the out-group and/or type of interracial contact. Another set of models adds the measures of self-assessed contact for blacks, Hispanics, and Asians respectively to explore how this contact is related to changes in social distance and attitudes over four years of college. The final set of models examines how these measures of contact, as well as social distance and stereotypes towards each group are related to the students' feelings about affirmative action.

6 Findings

The primary concern of this paper is to test the contact hypothesis by looking at changes in interracial attitudes over the course of four years of living and interacting in an inter-racial setting. Table 2 explores white student's attitudes towards blacks in the senior year. The first three nested models predict social distance towards blacks in the senior year, while the second set examines changes in stereotypes towards blacks (both outcomes are relative to white students rating of their own group). The first model shows the relationships between individual background characteristics, initial attitudes, and social distance. White students who are first generation college students express somewhat higher levels of social distance towards blacks in the senior year ($B = 0.317^{**}$), as do those students who express higher initial distance towards blacks at college entrance ($B=0.247^{***}$).

The second model adds the percent black at the university. This measure of propinquity is the most commonly used measure of contact in the literature and is used here to compare to more proximate measures of contact. As Model 2 shows, the percent black at the university is not significantly associated with changes relating to social distance towards blacks expressed in the senior year.⁸ Model 3 adds the more proximate measures of contact, several of which are significantly related to lowered levels of social

⁷ Intraclass correlation (ICC) for social distance for blacks 0.017, for Hispanics 0.024, for Asians 0.046; for stereotypes towards blacks 0.009, Hispanics 0.006, and Asians 0.022; and for beliefs about affirmative action the ICC is 0.054. Models were also replicated in HLM with similar results.

⁸ Percent black is also not significant in models that do not control for initial social distance (available upon request).

Table 2 OLS regressions predicting attitudes towards blacks in the senior year as a function of initial attitudes and interracial contact on campus

	Social distance						Stereotypes					
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
<i>Demographic background</i>												
Male	-0.003	0.059	0.002	0.060	-0.015	0.058	0.013	0.026	0.016	0.025	0.019	0.025
First generation college (no parent college)	0.317	0.088**	0.302	0.094**	0.215	0.092*	0.006	0.046	-0.003	0.045	-0.027	0.043
Foreign born parent	-0.111	0.089	-0.116	0.093	-0.134	0.101	-0.046	0.051	-0.050	0.049	-0.050	0.052
<i>Interracial attitudes</i>												
Social distance (relative to whites)	0.247	0.041***	0.245	0.042***	0.242	0.041***						
Stereotypes (relative to whites)					0.232	0.041***	0.232	0.041***	0.232	0.041***	0.220	0.035***
<i>Interracial contact</i>												
Close contact												
At least one freshman friend from group					-0.04	0.09					-0.05	0.03 ⁺
At least one soph. close friends from group					-0.399	0.220 ⁺					0.002	0.12
Sophomore romantic partner from group					-0.79	0.43 ⁺					0.076	0.072
Sophomore date from group					-0.26	0.13 ⁺					-0.04	0.04
Roommate from group (sophomore)					-0.17	0.18					-0.16	0.07*
Other contact												
% of extracurricular activities dominated by group					-0.48	0.18*					0.294	0.26
African American studies course					-0.251	0.208					0.001	0.026

Table 2 continued

	Social distance						Stereotypes					
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Structural factors												
Group % on campus (2000)			-1.81	1.29	-1.82	1.24			-0.934	0.5 ⁺	-0.85	0.45 ⁺
Constant	0.344	0.071 ^{***}	0.539	0.147 ^{**}	0.614	0.158 ^{**}	-0.008	0.023	0.091	0.059	0.124	0.049 [*]
R-squared	0.0968		0.1		0.112		0.095		0.0998		0.108	
N	777		777		739		777		777		739	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

Source National longitudinal survey of freshmen

distance. White students who report having a close friend who is black ($B = -0.399+$), having dated someone who is black ($B = -0.793+$), and having a black romantic partner ($B = -0.258+$) all have negative and significant impacts on the amount of social distance expressed towards blacks in the senior year. In addition, participation in extracurricular activities in which blacks were the majority ($B = -0.476^*$) also had a strong negative impact on social distance in the senior year. All of these findings are consistent with the contact hypothesis, but the finding with respect to black dominated extracurricular activities is particularly promising, as participation in shared activities with common goals is one of the conditions that Allport and others have speculated would yield the largest reductions in racial animosity. This finding is also potentially important because race/ethnic diversity is not likely the reason why a student chooses a particular extracurricular activity (whereas many of the other significant factors represent voluntary exposure).

The second set of models examines the impact of contact on stereotypes about blacks. From Model 4 we can see that demographic characteristics are not significantly related to stereotypes about blacks in the senior year, but the stereotypes students held at college entrance are significantly and positively related to senior year outcomes ($B = 0.232^{***}$). The next model adds the percent black on campus ($B = -0.934+$), which has a significant negative impact on stereotypes in the senior year. Since few white students had a high degree of exposure to blacks prior to coming to college, this relationship between proximity to black students and reductions in stereotypes about blacks is encouraging. It is also consistent with the contact hypothesis that greater exposure to other groups serves to break down negative stereotypes.

The final model in the table includes all measures of contact. The percentage black on campus remains statistically significant ($B = -0.847+$), but forms of more proximate contact are also associated with reductions in negative stereotypes about blacks. White students who reported that at least one out of the ten closest friends they made in their first year had less negative stereotypes towards blacks in their senior year ($B = -0.049+$), as did those students who reported having a black roommate in the sophomore year ($B = -0.156+$). However, neither membership in a group activity dominated by blacks nor having taken an African American studies course was significantly related to changes in stereotypes.

Does contact have similar effects on changes in social distance towards and stereotypes about other groups? Table 3 explores changes in social distance and stereotypes for Hispanics. As was found with the previous models, white students who were first generation college students had somewhat higher feelings of social distance towards Hispanics than those who were not ($B = 231^*$). In addition, social distance towards Hispanics at college entrance has a strong positive relationship to social distance expressed in the senior year ($B = 0.278^{***}$). Model 2 adds the percent Hispanic on campus to the model, which is the most common measure of contact in the literature. The percent Hispanic on campus has a negative association with white's ratings of social distance towards Hispanics ($B = -1.693+$). So while it appears that campus demographics are not significantly related to social distance towards blacks, mere propinquity is associated with reduced social distance towards Hispanics.

Model 3 adds more specific measures of contact with Hispanics. First, note that initial distance towards Hispanics remains strongly positively associated with social

Table 3 OLS regressions predicting attitudes towards Hispanics in the senior year as a function of initial attitudes and interracial contact on campus

	Social distance						Stereotypes					
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
<i>Demographic background</i>												
Male	-0.11	0.08	-0.09	0.08	-0.12	0.09	0.01	0.04	0.01	0.04	0.01	0.04
First generation college (no parent college)	0.23	0.08*	0.21	0.08*	0.15	0.09	-0.04	0.05	-0.04	0.05	-0.04	0.04
Foreign born parent	-0.19	0.14	-0.18	0.13	-0.16	0.14	-0.06	0.05	-0.05	0.05	-0.03	0.05
<i>Interracial attitudes</i>												
Social distance (relative to whites)	0.28	0.04**	0.27	0.04***	0.25	0.03***						
Stereotypes (relative to whites)							0.24	0.03***	0.24	0.03***	0.25	0.03***
<i>Interracial contact</i>												
Close contact												
At least one freshman friend from group					-0.01	0.11					0.02	0.04
At least one soph. close friends from group					-0.22	0.11 ⁺					-0.11	0.08
Sophomore romantic partner from group					-0.26	0.15 ⁺					0.05	0.06
Sophomore date from group					-0.31	0.23					-0.11	0.1
Roommate from group (sophomore)					-0.11	0.25					-0.07	0.06
Other contact												
% of extracurricular activities dominated by group					0.74	0.5					0.58	0.2**
Latin American studies course					-0.08	0.14					0.08	0.05

Table 3 continued

	Social distance						Stereotypes					
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Structural factors												
Group % on campus (2000)			-1.69	0.91 ⁺	-2.1	0.84*			-0.11	0.51	-0.14	0.61
Constant	0.46	0.08**	0.6	0.13***	0.71	0.13***	-0.01	0.02	-0	0.05	-0	0.06
R-squared	0.12		0.12		0.12		0.10		0.10		0.12	
N	775		775		737		777		777		739	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

Source National longitudinal survey of freshmen

distance in the senior year ($B = 0.252^{***}$), while the percent Hispanic on campus has a significant negative association with social distance ($B = -2.098^*$). Net of these factors, white students who included a Hispanic among one of their four closest friends/confidants expressed significantly lower levels of social distance towards Hispanics ($B = -0.216+$), as did white students who reported having a Hispanic romantic partner ($B = -0.256+$). Participation in extracurricular activities in which Hispanics were a majority, and having taken a Latin American studies course, were not significantly related to reductions in social distance.

The relationship between contact and negative stereotypes about Hispanics are explored in Models 4–6. Student demographic characteristics are not significantly associated with negative stereotypes, but the students' stereotypes regarding Hispanics at college entrance are positively related to stereotypes expressed in the senior year ($B = 0.242^{***}$). Model 5 adds the percent Hispanic on campus, which is not significantly associated with Hispanic stereotypes. The more proximate measures of contact are added in Model 6, of which only participation in an extracurricular group dominated by Hispanics is statistically significant, but not in the expected direction ($B = 0.581^{**}$). Contrary to expectations based on the contact hypothesis, students who report participating in a Hispanic dominated group express *more* negative stereotypes by the senior year than those who reported no such activities. Of course, a very small number of whites reported participating in extracurricular activities that were dominated by Hispanics, so there may be something about the nature of the group they joined or the individuals who are reporting these activities that are driving this counterintuitive finding.

Finally, we turn to an examination of attitudes towards Asians. Whites generally express the least amount of social distance towards Asians, which is also the group to which they are likely to have had the most exposure prior to college entrance. Table 4 explores factors related to social distance and stereotypes of Asians in the senior year. As before, we begin by looking at how student background and prior orientations are associated with social distance expressed by students in their senior year. First generation college students express more social distance towards Asians ($B = 0.343^*$), as do white females ($B = 0.210^*$) and students who entered college expressing higher levels of social distance towards Asians ($B = 0.218^{***}$). With the exception of gender, these factors were also related to social distance expressed towards blacks and Hispanics in the previous tables. At the baseline, it would therefore appear that social distance operates similarly across groups (albeit at different levels). Model 2 adds the percent Asian on campus, which is negatively and significantly associated with social distance towards Asians expressed in the senior year ($B = -1.087^{**}$). More specific measures of contact are added in Model 3, of which only participation in an extracurricular activity dominated by Asians is significantly related to lower levels of social distance in the senior year ($B = -0.532^*$). At least with respect to blacks and Asians, participation in shared activities with these groups is significantly related to lowered expressions of social distance in the senior year.

The final set of models explores how prior background and interracial contact is associated with changes in stereotypes about Asians by the senior year. First generation college students expressed less negative stereotypes about Asians (-0.129^*), while negative stereotypes at college entrance were significantly related to negative

Table 4 OLS regressions predicting attitudes towards Asians in the senior year as a function of initial attitudes and interracial contact on campus

	Social distance						Stereotypes					
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
<i>Demographic background</i>												
Male	-0.210	0.078*	-0.191	0.079*	-0.184	0.076*	-0.012	0.044	-0.010	0.044	-0.026	0.054
First generation college (no parent college)	0.343	0.126*	0.322	0.112**	0.349	0.137*	-0.129	0.062*	-0.132	0.059*	-0.108	0.058+
Foreign born parent	-0.254	0.182	-0.206	0.167	-0.260	0.184	-0.150	0.092	-0.143	0.092	-0.140	0.087
<i>Interracial attitudes</i>												
Social distance (relative to whites)	0.218	0.036***	0.203	0.035***	0.187	0.037***	0.308	0.055***	0.304	0.055***	0.280	0.052***
Stereotypes (relative to whites)												
<i>Interracial contact</i>												
Close contact												
At least one freshman friend from group					-0.147	0.093					-0.053	0.047
At least one soph. close friends from group					-0.021	0.129					0.004	0.070
Sophomore romantic partner from group					-0.200	0.165					-0.081	0.165
Sophomore date from group					-0.101	0.102					0.039	0.062
Roommate from group (sophomore)					-0.087	0.090					0.156	0.077+
Other contact												
% of extracurricular activities dominated by group					-0.532	0.230*					0.203	0.145
Asian studies course					-0.084	0.191					-0.065	0.116

Table 4 continued

	Social distance						Stereotypes					
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Structural factors												
Group % on campus (2000)			-1.087	0.281**	-0.509	0.426			-0.150	0.202	-0.321	0.256
Constant	0.477	0.072***	0.712	0.101***	0.741	0.118***	-0.192	0.045***	-0.163	0.062*	-0.134	0.075 ⁺
R-squared	0.089		0.103		0.113		0.120		0.121		0.119	
N	775		775		737		777		777		739	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

Source National longitudinal survey of freshmen

stereotypes about Asians in the senior year (0.308^{***}). Model 5 adds the percent of the student body that was Asian, which is not significantly related to changes in stereotypes. The final model examines more proximate measures of contact, of which only having an Asian roommate is statistically significant but not in the expected direction ($B = 0.157+$). Students who had an Asian roommate in the sophomore year had more negative stereotypes of Asians than students who did not report having an Asian roommate. However, one unique thing to note with Asians is that white's stereotypes of them are overwhelmingly positive and often more positive than their ratings of their own group. It is therefore possible that increased interaction may disconfirm the 'model minority' stereotype to some degree, and hence result in more negative stereotypes.

Because the measures of contact available in the survey are concentrated primarily in the first and second year of college, there is a considerable gap in time between this contact and interracial attitudes measured at the end of the senior year. It is possible that sustained contact, as well as contact more proximate to the final wave of data collection, might have a greater bearing on attitudes expressed in the senior year. To partially test for this, Table 6 includes questions from the senior year in which students were asked to rate their degree of interaction with different racial/ethnic groups, ranging from 0 (no interaction) to 10 (a great deal of interaction).

The first two models in Table 5 show the effects of various types of interracial contact on black social distance and stereotypes for white students in the senior year. White students expressing higher levels of interracial contact with black students held less negative black stereotypes ($B = -0.059^{**}$) and lower levels of social distance ($B = -0.020^{**}$) in the senior year than those who rated their degree of interaction lower. This is precisely what would be predicted by the contact hypothesis, which states that as interaction increases, negative stereotypes and social distance decline. The more proximate measures of intergroup contact discussed in Table 3 were no longer significant once this assessment of one's own level of interaction with blacks was taken into account, but this is to be expected since we know these students did indeed have more contact with blacks. Similarly, in the models examining change in social distance and stereotypes for Hispanics and Asians, self-assessed contact was associated with improved racial attitudes, with the exception of stereotypes about Asians, in which the relationship was not statistically significant.

Given the high visibility and controversy surrounding affirmative action, a final set of models examines the extent to which intergroup contact during the course of four years of college, as well as stereotypes and social distance, shape the degree to which white students believe that affirmative action has lowered academic standards at their university (on a scale from 0=strongly disagree to 10=strongly agree). These findings are shown in Table 6, with models run separately for contact with each out-group. White males have significantly higher agreement with the statement that affirmative action has weakened academic standards than do females ($B = 1.247^{***}$), net of all other factors. Social distance towards blacks in the senior year is also positively associated with greater agreement that affirmative action has weakened academic standards ($B = 0.658^{***}$), as are negative group stereotypes ($B = 0.890^*$). Measures of close contact are notably not significant, nor is the percent black on campus. However, involvement in extracurricular activities dominated by blacks ($B = -2.840^*$),

Table 5 OLS regressions predicting social distance and stereotypes for each group by early college contact and self-rated contact

	Black			Hispanic			Asian					
	Social distance		Stereotypes	Social distance		Stereotypes	Social distance		Stereotypes			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6						
	B	SE	B	SE	B	SE	B	SE	B	SE		
<i>Demographic background</i>												
Male	-0.053	0.068	0.006	0.025	-0.131	0.087	0.005	0.042	-0.179	0.074*	-0.026	0.054
First generation college (no parent college)	0.232	0.090*	-0.023	0.042	0.159	0.098	-0.038	0.043	0.329	0.129*	-0.104	0.059 ⁺
Foreign born parent	-0.166	0.104	-0.063	0.051	-0.192	0.146	-0.040	0.047	-0.286	0.177	-0.136	0.086
<i>Interracial attitudes</i>												
First year												
Social distance to blacks	0.233	0.041***										
Stereotypes blacks			0.218	0.035***								
Social distance to Hispanics			0.231	0.034***								
Stereotypes Hispanics							0.231	0.031***				
Social distance to Asians									0.170	0.035***		
Stereotypes Asians											0.286	0.053***
<i>Interracial contact</i>												
Structural												
Student percent black (2000)	-1.188	1.167	-0.639	0.474								
Student percent Hispanic (2000)					-1.327	0.866	0.108	0.587				
Student percent Asian (2000)									-0.065	0.339	-0.384	0.251

Table 5 continued

	Black			Hispanic			Asian					
	Social distance		Stereotypes	Social distance		Stereotypes	Social distance		Stereotypes			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6						
	B	SE	B	SE	B	SE	B	SE	B	SE		
Close contact												
At least one freshman friend from group	-0.004	0.093	-0.036	0.027	0.056	0.106	0.036	0.042	-0.070	0.103	-0.064	0.050
At least one soph. close friends from group	-0.325	0.236	0.024	0.121	-0.074	0.115	-0.071	0.080	0.044	0.113	-0.006	0.072
Romantic partner from group	-0.673	0.474	0.119	0.085	-0.015	0.148	0.123	0.057*	-0.127	0.165	-0.091	0.160
Dated member of group	-0.208	0.141	-0.019	0.037	-0.236	0.228	-0.087	0.106	-0.107	0.104	0.038	0.063
Group roommate	-0.147	0.178	-0.147	0.072 ⁺	-0.102	0.228	-0.063	0.063	-0.078	0.091	0.154	0.077 ⁺
Group dominated extracurriculars	-0.264	0.253	0.366	0.253	1.067	0.553 ⁺	0.674	0.174**	-0.152	0.228*	0.201	0.145
Group focused course	-0.165	0.194	0.027	0.027	0.003	0.139	0.100	0.048*	-0.089	0.198	-0.066	0.114
Retrospective account of contact during college												
Degree of contact with black students	-0.059	0.018**	-0.020	0.007**								
Degree of contact with Hispanic students					-0.099	0.022***	-0.030	0.009**				
Degree of contact with Asian students									-0.089	0.020***	0.013	0.010
Constant	0.875	0.196***	0.209	0.056**	1.078	0.165***	0.102	0.053 ⁺	1.166	0.155***	-0.190	0.091*
R-squared	0.126		0.117		0.156		0.135		0.141		0.121	
N=	739		739		737		739		737		739	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, ⁺ $p < 0.10$
 Source National longitudinal survey of freshmen

as well as having taken a class in African American or ethnic studies (-2.323^{***}), are strongly negatively related to agreeing to the affirmative action statement. This means that students who have worked with African Americans in a cooperative activity (such as a student organization) or have taken a course that may have sensitized them to the issues faced by black students have much more favorable views of the impact of affirmative action on their university. These findings are encouraging because they suggest that white's negative attitudes about affirmative action can be improved with greater awareness of the issues faced by minority students, learned both formally in the classroom and informally through working with these students in cooperative activities.

Because blacks are widely perceived to be the group that most benefits from affirmative action, it is not surprising that employing measures of contact with and attitudes towards them fit the data best. Model 2 examines the effects of social distance towards and stereotypes about Hispanics on agreement that affirmative action has weakened standards at the university. Again, males have significantly higher agreement with the statement that affirmative action has weakened academic standards ($B = 1.267^{***}$). Both social distance in the senior year ($B = 0.468^{***}$) and more negative stereotypes ($B = 0.494^*$) are associated with greater agreement as to the ill effects of affirmative action. Having had a Hispanic roommate in the sophomore year is also associated with an increase in belief that affirmative action has weakened academic standards ($B = 1.676^{**}$), which is contrary to what we would expect based on the contact hypothesis. A very small percentage of white students had a Hispanic roommate, so there may be something unique about these students. Model 3 shows the results for contact with Asians, which is not significantly related to the belief that affirmative action has weakened academic standards.

7 Discussion

This paper explored the effects of campus diversity and interracial contact on the racial and ethnic attitudes of white students over the course of four years in college. The results suggest that the effects of contact vary by the out-group in question. While the percent black on campus has a positive effect on the formation of friendships with black students in the first year of college, neither campus demographics nor these friendships has a significant effect on interracial attitudes towards blacks in general in the senior year for the white students in the sample. However, white students who report having a close friend who is black and those who have dated or had a romantic partner who is black do express less social distance towards blacks in their senior year. Whites who are most adverse to blacks would likely still avoid this type of interracial contact, thus our strongest evidence in favor of the contact hypothesis with respect to blacks comes from the finding that white students who are involved in extracurricular activities that are dominated by blacks express significantly lower social distance towards blacks in their senior year. This is encouraging evidence for the contact hypothesis in two respects: extracurricular activities represent contact in which participants are clearly cooperating in some shared goal and such participation is not likely to be based on the racial composition of the group.

Table 6 OLS regressions predicting the effects of intergroup contact and interracial attitudes on agreement that affirmative action has weakened standards (senior year)

	Out-group attitudes and contact					
	Black		Hispanic		Asian	
	Model 1		Model 3		Model 5	
	B	SE	B	SE	B	SE
<i>Demographic background</i>						
Male	1.247	0.191***	1.267	0.180***	1.307	0.186***
First generation college (no parent college)	0.499	0.358	0.580	0.420	0.458	0.424
Foreign born parent	0.051	0.263	-0.075	0.281	-0.186	0.269
<i>Interracial attitudes</i>						
Senior year						
Social distance to group	0.658	0.110***	0.468	0.101***	0.355	0.098**
Stereotypes about group	0.890	0.332*	0.494	0.227*	-0.720	0.125***
<i>Interracial contact</i>						
Structural						
Student percent black (2000)	5.726	4.462				
Student percent Hispanic (2000)			-3.590	3.988		
Student percent Asian (2000)					-0.022	1.221
Close contact						
# on campus friends from group (1st year)	-0.150	0.187	0.162	0.307	-0.263	0.249
# close friends from group (2nd year)	-0.141	0.521	-0.027	0.536	-0.076	0.367
Romantic partner from group	0.362	1.111	-0.216	1.105	-0.001	0.383
Dated member of group	-0.052	0.373	0.059	0.828	-0.033	0.403
Group roommate	0.786	0.490	1.676	0.454**	0.332	0.230
Group dominated extracurriculars	-2.840	1.156*	2.676	2.354	0.976	0.706
Group focused course	-2.323	0.471***	0.065	0.423	-0.753	0.527
Retrospective account of contact during college						
Degree of contact with black students	0.055	0.055				
Degree of contact with Hispanic students			0.016	0.044		
Degree of contact with Asian students					0.084	0.064
Constant	0.902	0.455 ⁺	1.869	0.468***	1.307	0.455**
R-squared	0.146		0.1209		0.094	
N=	716		715		715	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

Source National longitudinal survey of freshmen

Social distance towards Hispanics in the senior year was not associated with student demographic factors, but was significantly reduced for white students who reported having at least one close friend who was Hispanic and for those who reported having had a romantic partner who was Hispanic. Furthermore, I found that the greater the representation of Hispanics on campus, the greater the reduction in social distance

expressed by whites by the end of the senior year (net of other factors). On the other hand, social distance towards Asians was not significantly related to measures of close contact or their representation on campus. In fact, the only measure of contact that was significantly related to changes in social distance towards Asians was participation in extracurricular activities that were majority Asian. As stated previously, this indicator is one that supports the contact hypothesis quite strongly, since it represents participation in an activity with a shared goal.

Changes in stereotypes about different groups were to varying degrees associated with intergroup contact and were not on the whole as seemingly related to actual contact as were the changes in social distance.⁹ This finding is consistent with research suggesting that the effects of contact may have more bearing on affective feelings than stereotypes which are rooted in beliefs about groups (Jackman and Crane 1986; McClelland and Linnander 2006). With respect to blacks, white students who reported that at least one of the ten friends they made in the freshman year was black and those who had a black roommate in the sophomore year had significant reductions in their negative stereotypes of blacks at the end of their senior year. In addition, the percentage black on campus had a significant impact on reduced negative stereotypes, net of measures of more proximate contact, suggesting that mere exposure to blacks helps to reduce stereotypes. In addition, there is some evidence that contact resulted in *increasingly* negative stereotypes towards Hispanics and Asians. White students who reported membership in an extracurricular activity dominated by Hispanics and those who reported having an Asian roommate have more negative stereotypes towards these groups respectively in the senior year. Although these findings remained once self-assessed contact in the senior year was added to the model, white students who assessed a higher degree of contact with blacks and Hispanics did have significantly lower ratings of social distance. Self-assessed contact was, however, unrelated to changes in Asian stereotypes.

Finally, I examined how interracial contact over the course of four years of college and interracial attitudes were related to a highly charged racial issue on campus: affirmative action. More specifically, seniors were asked to what extent they agreed that affirmative action had weakened academic standards at their universities. Although more proximate measures of close contact were not significantly related to how white students answered this question, students who reported participating in extracurricular activities in which blacks were a majority, and those who had taken an African American studies course, were significantly less likely to agree that affirmative action had weakened academic standards. White students expressing greater social distance towards blacks and, in particular, those who expressed more negative stereotypes of blacks in the senior year expressed stronger agreement that affirmative action weakens academic standards. Negative attitudes on affirmative action were also strongly related

⁹ In analyses not shown, models were run for each group using the individual elements from the stereotype scale as dependent variables. These results suggest that close contact for blacks most reduces stereotypes about being lazy and hard to get along with, while taking more African American studies courses reduces stereotypes about unintelligence and agreeing the blacks quit easily. For Hispanics, close contact affects stereotypes about laziness, unintelligence, and being hard to get along with. Having an Asian roommate increased stereotypes of laziness and unintelligence.

to gender, with white males expressing greater agreement that academic standards have been weakened by affirmative action.

On the whole, these findings suggest support for the positive effects of interracial contact in college on changes in interracial attitudes. The findings are particularly strong with respect to reductions in social distance towards blacks and Hispanics, for whom close relationships played an important role. These findings are consistent with Pettigrew's (1998a) emphasis on intergroup friendships as possessing the essential processes which optimize the positive impact of contact. He (and others) have speculated that the reason friendships are effective in improving racial attitudes is due to the mutual liking that occurs over time as these relationships develop. Models predicting changes in stereotypes explained less variation and were less likely to show statistically significant effects of contact for Hispanics and Asians, suggesting that stereotype reduction is perhaps not as closely coupled with interracial contact (or at least not the contact that was measured in this study). Changes in stereotypes towards blacks, however, were positively impacted by close contact. Views on affirmative action were not significantly related to most measures of interracial contact, but were strongly influenced by participation in extracurricular activities in which blacks were the dominant group, as well as by taking courses in African American studies. These results echo McClelland and Linnander (2006) who found that exposure to information about the African Americans had a significant effect on improving white student's racial attitudes.

Although this study offers several advantages over previous studies, it does have some short-comings that are important to note. One is that measures of interracial contact are not repeated in each survey wave so it is impossible to gauge whether interracial contact increased, decreased, or stayed the same over the course of four years of college. Related to this, it may be problematic that the measures of interracial contact are concentrated in the first two years of contact, while the attitudinal measures are not asked again until the senior year. Future research should focus on a more diverse array of contact measures, that are ideally repeated over time. Furthermore, negative conditions that may limit the effectiveness of contact, such as intergroup anxiety, should also be explored (Pettigrew and Tropp 2006). Also, this paper focused exclusively on the attitudes of white students. Examining how interracial contact on campus affects minority students is obviously important as well. It can have implications for their satisfaction with college, persistence (Fischer 2007, 2010) and potentially even guide career choices (Beasley 2011).

For universities who are concerned about intergroup relations on campus, there are several courses of action suggested by this research. These findings imply that encouraging involvement of all students in extracurricular activities, but in particular minority students to improve their representation in on-campus groups. Participation in extracurricular activities with black and Asian students was associated with reductions in social distance towards these groups for white students. Involvement in extracurricular activities also confers benefits to the minority students themselves, for whom participation has been found to result in better academic outcomes (Fischer 2007; Pettigrew 1998b; Walton and Cohen 2007), as well as higher overall satisfaction with college.

Underlying the recommendation to improve minority representation in student groups is the continued importance of increasing minority representation more

generally on campus. Although this study did not show strong direct effects of school racial composition on changes in interracial attitudes over the course of four years of college, it has important indirect effects and therefore should not be ignored. The percentage that each group comprises on campus is directly and strongly related to the probability of forming a friendship with that group (Duncan et al. 2006; Hallinan and Teixeira 1987a,b; Joyner and Kao 2000; Moody 2001; Quillian and Campbell 2003; Sigelman et al. 1996) and has a particularly profound impact on the diversity of white student's friendship groups (Fischer 2008). Finally, this study provides positive evidence to support the idea that both formal and informal interracial contact on campus generally results in reduced feelings of social distance towards minorities for white students. Certain forms of contact may also help to engender more positive feelings among white students towards policies such as affirmative action, which can help to improve the racial climate on campus.¹⁰

References

- Allport, G. W. (1958). *The nature of prejudice*. Garden City, N.Y.: Doubleday.
- Beasley, M. (2011). *Opting out: Losing the potential of America's young black Elite*. Chicago: University of Chicago Press.
- Boisjoly, J., Duncan, G. J., Kremer, M., Levy, D. M., & Eccles, J. (2006). Empathy or antipathy? The impact of diversity. *American Economic Review*, 96, 1890–1905.
- Dixon, J. C. (2006). The ties that bind and those that don't: Toward reconciling group threat and contact theories of prejudice. *Social Forces*, 84, 2179–2204.
- Dixon, J. C., & Rosenbaum, M. S. (2004). Nice to know you? testing contact, cultural, and group threat theories of anti-black and anti-hispanic stereotypes. *Social Science Quarterly*, 85, 257–280.
- Duncan, G. J., Boisjoly, J., Levy, D. M., Kremer, M., & Eccles, J. (2006). Empathy or antipathy? The consequences of racially and socially diverse peers on attitudes and behaviors. In *Joint center for policy research working paper series*. Chicago, IL.
- Fischer, M. J. (2007). Settling into campus life: Differences by race/ethnicity in college involvement and outcomes. *Journal of Higher Education*, 78, 125–161.
- Fischer, M. J. (2008). Does campus diversity promote friendship diversity? a look at inter-racial friendships in college. *Social Science Quarterly*, 89, 631–655.
- Fischer, M. J. (2010). A longitudinal examination of the role of stereotype threat and racial climate on college outcomes for minorities at Elite institutions. *Social Psychology of Education*, 13, 19–40.
- Fischer, M. J., & Massey, D. S. (2007). The effects of affirmative action in higher education. *Social Science Research*, 36, 531–549.
- Forbes, H. D. (1997). *Ethnic conflict commerce culture and the contact hypothesis*. New Haven: Yale University Press.
- Gurin, P. (1999). The compelling need for diversity in education.
- Hallinan, M. T., & Teixeira, R. A. (1987a). Opportunities and constraints: Black-white differences in the formation of interracial friendships. *Child Development*, 58, 1358–1371.
- Hallinan, M. T., & Teixeira, R. A. (1987b). Students' interracial friendships: Individual characteristics, structural effects, and racial differences. *American Journal of Education* 95, 563–583.
- Jackman, M. R., & Crane, M. (1986). Some of my best friends are black...: Interracial friendship and whites' racial attitudes. *The Public Opinion Quarterly*, 50, 459–586.

¹⁰ These negative views about affirmative action are a contributing factor to stereotype threat which serves to undermine minority performance in college (Fischer, Mary J. 2010. "A Longitudinal Examination of the Role of Stereotype Threat and Racial Climate on College Outcomes for Minorities at Elite Institutions." *Social Psychology of Education* 13:19–40; Fischer, Mary J. and Douglas S. Massey. 2007. "The Effects of Affirmative Action in Higher Education." *Social Science Research* 36:531–549).

- Joyner, K., & Kao, G. (2000). School racial composition and adolescent racial homophily. *Social Science Quarterly*, *81*, 810–825.
- Krysan, M. (2000). Prejudice, Politics, and Public Opinion: Understanding the sources of racial policy attitudes. *Annual Review of Sociology*, *26*, 135–168.
- Levin, S., Van Laar, C., & Sidanius, J. (2003). The effects of ingroup and outgroup friendships on ethnic attitudes in college: A longitudinal study. *Group Processes & Intergroup Relations*, *6*, 76–92.
- Massey, D. S., Charles, C. Z., Lundy, G. F., & Fischer, M. J. (2002). *The source of the river: The social origins of freshmen at America's selective colleges and universities*. Princeton NJ: Princeton University Press.
- McClelland, K., & Linnander, E. (2006). The role of contact and information in racial attitude change among white college students. *Sociological Inquiry*, *76*, 81–115.
- Moody, J. (2001). Race, school integration, and friendship segregation in America. *American Journal of Sociology*, *107*, 679–716.
- Odell, P., Korgen, K., & Wang, G. (2005). Cross-racial friendships and social distance between racial groups on a college campus. *Innovative Higher Education*, *29*, 291–305.
- Pettigrew, T. (1998a). Intergroup contact theory. *Annual Review of Psychology*, *49*, 65–85.
- Pettigrew, T. (1998b). Prejudice and discrimination on the college campus. In J. L. Eberhardt & S. T. Fiske (Eds.), *Confronting racism: The problem and the response*. Thousand Oaks CA: SAGE Publications.
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, *90*, 751–783.
- Powers, D. A., & Ellison, C. G. (1995). Interracial contact and black racial attitudes: The contact hypothesis and selectivity bias. *Social Forces*, *74*, 205–226.
- Quillian, L., & Campbell, M. E. (2003). Beyond black and white: The present and future of multiracial friendship segregation. *American Sociological Review*, *68*, 540–566.
- Schuman, H., Steeh, C., Bobo, L., & Krysan, M. (1997). *Racial attitudes in America: Trends and interpretations*. Cambridge: Harvard University Press.
- Sigelman, L., Bledsoe, T., Welch, S., & Combs, M. W. (1996). Making contact? black-white social interaction in an urban setting. *The American Journal of Sociology*, *101*, 1306–1332.
- Sigelman, L., & Welch, S. (1993). The contact hypothesis revisited: Black-white interaction and positive racial attitudes. *Social Forces*, *71*, 781–795.
- Taylor, M. C. (1998). How white attitudes vary with the racial composition of local populations: Numbers count. *American Sociological Review*, *63*, 512–535.
- Walton, G. M., & Cohen, G. L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology*, *92*, 82–96.
- Wilson, T. C. (1996). Cohort and prejudice: Whites' attitudes towards Blacks, Hispanics, Jews, and Asians. *Public Opinion Quarterly*, *60*, 253–274.

Author Biography

Mary J. Fischer is an Associate Professor of Sociology at the University of Connecticut and affiliate of the Center for Population Research. She is co-author of *Taming the River: Negotiating the Academic, Financial, and Social Currents in Selective Colleges and Universities*. Her research interests include minorities in higher education, residential segregation, and immigration.