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Extending Notions of Campus Climate and Diversity to Students' Transition to College

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Educating, training, and preparing future leaders for many segments of society continue to be the responsibilities of colleges and universities. This is particularly true for public universities that are state flagship campuses; yet with the changing demographics in the United States, the growth of immigrant populations in many states, and events of September 11, 2001, guarantees of a diverse, pluralistic society remain uncertain without more systematic attention to educating students for such a society. In June 2003, the U.S. Supreme Court's ruling in *Gratz v. Bollinger* struck down the mechanism the University of Michigan had used to achieve a diverse student body among undergraduates but supported the educative value of diversity in

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both this case and *Grutter v. Bollinger*. The Court affirmed the importance of diversity in higher education and reinforced the expectation that elite institutions have a responsibility to train their students to become leaders across all segments of society. Most importantly, these rulings affirmed that the cadre of future leaders should be diverse and that institutional initiatives to educate a diverse student body should reflect the centrality of diversity to key educational goals and outcomes. At the same time, access to higher education continues to be a contested area of U.S. society with regard to admission to flagships and other top-tier institutions. Thus, there has been a renewed focus on a more complex understanding of diversity in relation to student outcomes.

One key college student outcome is the successful transition and retention of diverse students in college. The American Association of Colleges and Universities (AAC&U) has introduced an initiative based on the concept of “inclusive excellence” to guide a national movement and campus efforts to make the success of diverse students a focal point. Specifically, it defines inclusive excellence as: (a) a focus on student intellectual and social development; (b) a purposeful development and utilization of organizational resources directed at student learning; (c) attention to the cultural differences that learners bring to the educational experience that enhance the educational enterprise; and (d) a welcoming community that engages all of its diversity in the service of student and organizational learning (AAC&U, 2007). In this perspective, a diversity agenda becomes part of the institution’s goals in achieving academic excellence using a student-centered approach. However, institutions require a better understanding of how the campus climate for diversity and intergroup relations plays a role in student outcomes. While much of the previous work has been conducted on underrepresented groups or groups who experience some sort of racial isolation on campus (Harper & Hurtado, 2007; Hurtado & Carter, 1997; Hurtado, Milem, Clayton-Pederson, & Allen, 1999), we are only beginning to understand how these factors related to diversity are similar or different for majority students and underrepresented students in their transition to college (Hurtado, Han, Sáenz, Espinosa, Cabrera, & Cerna, 2007).

The purpose of this study is to test a model of students’ diversity experiences in predicting the transition to college for White students and students of color. Specifically we examine the direct and indirect relationships between several measures of interactions with diverse peers before and during college on students’ sense of belonging in the second year of college. In testing a similar model, we attempt to determine if affective, behavioral, and perceptual dimensions of the climate for diversity impact students’ psychological sense of integration in the same way for White students and students of color attending predominantly White universities (PWIs). The implications

for student support may include greater attention to intergroup relations in improving student transition and retention in college.

TRANSITION TO COLLEGE FOR DIVERSE STUDENTS

Despite the wealth of higher education research on college students, higher education scholars and administrators need to continue to work on building better insights into the transition process for students, particularly on the challenges students face and appropriate responses of support. Terenzini, Rendón, Upcraft, Millar, Allison, Gregg, and Jalomo (1994) used a combination of Astin's (1993) theory of involvement and Tinto's (1993) college student departure theory to frame their qualitative examination of the transition to college. They note that nontraditional students experience the transition to college not only as an adjustment to a new academic environment, but also as an adjustment to a new social and cultural context. Terenzini et al. (1994) assert that, as part of the transition to college, students must be validated. A key aspect of this validation process is that students feel they are welcome in these new social and cultural contexts. However, the needs of students vary widely, especially for students of color at elite PWIs. Indeed, a growing body of research indicates that students of color who have negative experiences at PWIs are less likely to persist (Cabrera, Nora, Terenzini, Pascarella, & Hagedorn, 1999; Hurtado, 1992; Nettles & Perna, 1997).

Like all students, students of color experience challenges in making the successful transition to college (Carter, Locks, Winkle-Wagner, & Pineda, 2006; Kalsner & Pistole, 2003); however, they have the added burden of adjusting to college in what they may perceive as a hostile racial climate. Their presence on campus is often scrutinized (Jones, 2002; Solórzano, Ceja, & Yosso, 2001), and their talents and abilities are doubted (Davis, Dias-Bowie, Greenberg, Klukken, Pollio, Thomas, et al., 2004; Steele, 1997, 2004). For White students in the same environments, racial aspects of the environment also have an impact on their transition, but the magnitude of the effect differs (Hurtado et al., 2007). Hurtado, Carter, and Spuler (1996) found variations among Latino students involving such strategies as cognitive mapping, managing resources, and reliance on family support/independence as processes affecting students' academic, social, and personal-emotional adjustment, as well as their sense of attachment to the institution. Nora (2001) asserts that assessment of institutional commitment may in fact be a proxy measurement of the level of real and perceived institutional support students receive. Nora, Barlow, and Crisp's (2005) reformulation of the integration model includes many recent developments in retention research that more appropriately includes research on underrepresented students and also includes students' sense of belonging, the outcome of interest for this study.

The broader literature on college students frames the transition to college phenomena as a psychological adjustment process. These approaches focus on the individual student's psychological processes and traits rather than context, including factors such as coping, self-efficacy, attachment, and motivation. Students with an optimistic outlook, strong locus of control, high self-esteem, and proactive orientation toward seeking social support find the adjustment to college to be a smoother process (Aspinwall & Taylor, 1992; Bettencourt, Charlton, Eubanks, Kernahan, & Fuller, 1999; Protinsky & Gilkey, 1996; Shields, 2004). For students of color, racial and ethnic identity (Adan & Felner, 1995; Hatter & Ottens, 1998; Saylor & Aries, 1999), community involvement, and the negotiation of family support and relationships (Choi, 2002; Schneider & Ward, 2003) are key aspects of the transition-to-college process, indicating that social connections and context are important.

Sense of Belonging in College

Perceived social cohesion (Bollen & Hoyle, 1990), more commonly referred to as "sense of belonging" in the college student literature, has been identified as a key outcome of college students' experiences with academic and social integration on campus. Sense of belonging, in turn, also affects students' intention to persist (Hausmann, Schofield, & Woods, 2007). Researchers have typically conceived of sense of belonging as part of the psychosocial processes involved with the adjustment and transition to college. Different types of social and academic interactions (e.g., memberships, specific peer interactions on campus) affect a student's sense of belonging. For example, Hurtado and Carter (1997) found that Latino students who interacted with peers around academic (i.e., course-related) issues outside of class had a higher overall sense of belonging. In the Hurtado and Carter study, the sense of belonging measure was a latent factor consisting of the extent to which students felt they were "part of the campus community," "member of the campus community," and had a "sense of belonging to campus community." A similar measure was used in Hausmann, Schofield, and Woods (2007), both of which were based on Bollen and Hoyle's (1990) measure of social cohesion.

Hoffman, Richmond, Morrow, and Salomone (2002), based on qualitative work, conceived of "perceived peer support" as one of five factors that can be used to measure college students' sense of belonging. However, direct tests of a sense of belonging measure in complex models that study relationships with peer support reveal that the two are distinct constructs that are strongly related in the experiences of White students and students of color (Hausmann et al., 2007; Hurtado et al., 2007). In a growth model, researchers found changes in students' sense of belonging and the effect of peer support, with such peer support being more important for increasing African Americans' sense of belonging over time (Hausmann et al., 2007).

A student's sense of belonging can also mediate the relationships between parental support and perceptions of a hostile racial climate, particularly for students of color (Mounts, 2004). This finding may explain Hurtado and Ponjuan's (2005) finding that Latino students living at home and those living on campus did not differ in making a successful adjustment to college. Other scholars have found that students who have positive, race-related interactions and experiences feel a greater sense of belonging on campus (Mendoza-Denton, Downey, Purdie, Davis, & Peitzak, 2002). This finding is consistent for African Americans (Mendoza-Denton et al., 2002), Asian Americans (Lee & Davis, 2000), and Latinos (Hurtado & Carter, 1997).

Researchers are beginning to conclude that early social experiences in college are better determinants of "initial levels of sense of belonging than are demographic or academic experiences" (Hausmann et al., 2007, p. 829). Our study extends this work by examining how students' sense of belonging is affected by the quality of peer relationships associated with diversity on campus for White students and students of color.

PRECOLLEGE EXPERIENCES AND INTERACTING WITH DIVERSE PEERS IN COLLEGE

Early social experiences in college are influenced by the students' experiences prior to college as well as by their experiences with different racial/ethnic groups in college. Allport's (1954) contact hypothesis clearly outlines the conditions necessary to foster the positive effects of intergroup contact. The equal-group-status condition he recommends may be difficult for college campuses to achieve, given persistent social and economic disparities among racial/ethnic groups in their precollege environments. Students' precollege backgrounds, whether they have interacted with homogeneous peers or diverse peers, may be predisposed to continue the same interaction patterns in college (Sáenz, 2005; Sáenz, Ngai, & Hurtado, 2007). Initiatives like intergroup relations programs provide opportunities for students to develop common goals, a second condition of Allport's contact hypothesis (Zúñiga, Nagda, Chesler, & Cytron-Walker, 2007). The condition for sanctioned authority support speaks to how important it is that opportunities to interact across social identity memberships are provided through formal programs on campuses. Interactions across racial and ethnic boundaries can facilitate mutual liking and respect if such interactions are deliberate and structured to be more than superficial encounters. These conditions are especially important for today's college students, who are educated in increasingly segregated K-12 environments (Orfield, Bachmeier, James, & Eitle, 1997; Orfield & Lee, 2006).

Actual reports of the quality of interactions students have with diverse peers and the degree of intergroup anxiety they have with particular racial

groups are central to student outcomes (Gurin, Dey, Hurtado, & Gurin, 2002; Hurtado, 2003a) and sense of belonging, in particular, in the transition to college (Hurtado et al., 2007). Stephan and Stephan (1989) examined anxiety as a mediating factor for intergroup contact and found that students of color experienced a greater degree of anxiety when interacting with Whites, and that such anxiety over intergroup interactions is fear based. These fears of negative consequences are based on prior interactions, prior impressions, and the context of the interactions. Other research by Stephan and Stephan (1996) has shown that an increase or decrease in anxiety depends on the type of intergroup contact experienced.

Accentuation theory posits that students enter colleges with predispositions that are accentuated over time as they select peer groups and activities; they are also likely to select courses that reinforce these initial predispositions (Feldman & Newcomb, 1969; Nelson-Laird, Engberg, & Hurtado, 2005). The consistent findings about how participation in the Greek system isolates White students from interacting with their diverse peers is one such example (Chang & DeAngelo, 2002; Sáenz, Ngai, & Hurtado, 2007; Sidanius, Levin, Van Laar, & Sinclair, 2004). With diversity, such accentuation effects are likely to be powerful, as those students who are already comfortable with diversity and consider themselves strong in this area will select courses, peers, and activities that will strengthen their initial inclinations. Students' predispositions are likely to be accentuated over time, and these tend to accentuate group differences in interests, values, and behaviors. Moreover, recent research has shown the extent to which students' precollege racial environments influence student interaction in college (Sáenz, 2005; Sáenz et al., 2007). Thus, it is important to account for students' predispositions regarding diversity activities and any differences in the racial demographics of schools and neighborhoods as influences on students' interactions with diverse peers in college, which in turn, have been demonstrated to produce a host of educational outcomes that constitute desired skills and competencies in a multicultural society (Gurin et al., 2002; Hurtado, 2003a; Milem, Chang, & Antonio, 2005).

Campus Climate and Racial Tension

Research has shown that students of color are attuned to the campus racial environment and experience it differently than their White counterparts at PWIs. Hurtado et al. (1999) summarize the research on diversity in higher education and identify four interrelated aspects of the campus climate. Most of the empirical research reviewed for this analysis can be categorized as psychological and behavioral dimensions of the climate for diversity. Educational researchers have consistently identified these areas as barriers to the academic success, retention, and graduation of minority students.

Institutional climate and commitment are evidenced by academic, social, and financial support (Freeman, 1997; Green, 2001; Hurtado et al., 1999).

At times, institutions may ignore the fact that these levels of support are affected by campus racial dynamics. However, perceptions of a poor racial campus climate can have a negative effect on students' ties to the academic and social arenas of college life (Sáenz, Marcoulides, Junn, & Young, 1999). Morley (2003) found that elements affecting African American students' adjustment to college were pressure from White students to disclose their racial background, encountering a negative reaction to their minority status, and encountering colorblind ideologies. A poor climate and repeated experiences with disrespectful actions by their peers and the institution lowers African Americans students' investment in remaining at their institution (Solórzano et al., 2001; Zea, Reisen, & Beil, 1997). However, perceptions of a hostile climate affect students from many different racial/ethnic groups and majors in the transition to college (Cabrera et al., 1999; Hurtado et al., 1999; Hurtado et al., 2007).

STRUCTURAL MODEL AND HYPOTHESES

This study combines a number of conceptual frames of reference relevant to understanding the relationship between interactions with diverse peers and the transition to college. Our hypothesized model builds on previous scholarship on college transition and students' sense of belonging in college. In particular, we adapted constructs from previous models on diverse students, campus climate, integration, and transition to college (Cabrera et al., 1999; Hurtado & Carter, 1997; Hurtado et al., 1999; Nora et al., 2005). We examine perceptions of the racial climate, accounted for in previous models. Additionally, we consider predispositions toward interactions with diverse peers, the nature of contact with diverse peers based on Allport's (1954) contact hypothesis, and accentuation theory based on the work of Feldman and Newcomb (1969). Based on previous research, we control for gender differences in predicting sense of belonging and activities that influence college involvement, such as living in college residences and hours per week spent socializing (Milem & Umbach, 2003; Pike, 2002).

Many predominantly White, flagship institutions are becoming increasingly diverse, but many of the students enrolling on such campuses come from homogeneous environments due to persistent racial segregation in housing and education (Orfield et al., 1997; Orfield & Lee, 2006). We anticipate that, as findings by Sáenz, Ngai, and Hurtado (2007) suggest, higher proportions of Whites in the precollege neighborhood, peer group, and high school will have a negative effect on students' reporting that they have had positive interactions with diverse peers in college. Further, it is probable that this relationship will be stronger for students of color than for White students. We expect that larger numbers of Whites in the precollege environ-

ment will have opposite effects for White students and students of color. We predict that White students from predominantly White backgrounds will be less likely to indicate a predisposition to participate in diversity activities at the beginning of college. We think that the opposite will be true for students of color, who, we hypothesize, will be more comfortable with diverse peers and possibly will seek out diversity activities and other students of color on campus.

Based on the outcomes of participating in programs like intergroup relations and taking courses related to diversity, our conceptual model predicts that students of color and White students will be more likely to have positive interactions with diverse peers if they indicate they are likely to participate in diversity activities in college. These students who have a predisposition toward participating in college diversity activities, we think, will increase their opportunities for positive interactions with a diverse set of peers. We anticipate that this effect will be strongest for students of color who are more likely to be exposed to diverse peers (Rowley, 2000).

We posit that students who are predisposed to participate in diversity activities are likely to have a unique set of multicultural competencies that not only spur an interest in participating in diverse activities but that also decrease their anxiety with diverse peers. We expect that these students have developed a heightened sense of awareness about cultural and racial differences and are more sensitive to any resulting racial tensions on their campuses.

We anticipate several direct and indirect effects on sense of belonging. Higher education literature gives strong indications that the campus social environment and peer relationships are critically important for transition to college and academic success (Astin, 1993; Tinto, 1993). Further, there is a growing body of research that this situation is especially pronounced for students of color (Antonio, 2004; Hausmann et al., 2007; Hurtado et al., 2007; Rendón, Jalomo, & Nora, 2000; Tierney, 1992). We hypothesize that positive interactions with diverse peers will have a direct, positive effect on sense of belonging and an indirect effect on sense of belonging mediated by the perception of racial tension on campus. Additionally, we anticipate that perceived racial tension will have a negative, direct effect on sense of belonging (Hurtado & Carter, 1997).

METHODS

Data Source

Data are derived from a national, multi-institutional research project titled Preparing College Students for a Diverse Democracy (Hurtado, 2003a). Ten public universities participated in the study; each was chosen for its

strong commitment to diversity, recent success in diversifying its student body, and/or substantial engagement in community-building activities. The longitudinal surveys, administered in 2000 (at the beginning of the first year of college) and 2002 (at the end of the second year of college), examined students' attitudes and experiences on a variety of issues with a focus on issues related to diversity and civic engagement. A survey distribution method was deemed most appropriate for each participating campus after consulting with the institutions.

Three campuses administered the survey during its summer orientation sessions; four campuses mailed the survey to its incoming students, sending a second wave of surveys to those who did not respond; and three campuses distributed the surveys to students taking freshman seminar and English composition classes. The average response rate for the 10 institutions was approximately 35%, ranging from a high of 81% to a low of 12%. A follow-up survey was mailed in 2002 to all second-year students near the end of their second year of college. Due to low second-year response rates for one institution, one campus was eliminated from the sample. We include students who completed both the baseline and the follow-up in this study—a total of 4,471 students.

Sample

For this study, we randomly selected a sub-sample of students for analysis. As suggested by researchers (Bentler, 2006; Bollen, 1989), we divided the sample in half to perform preliminary analyses on one ($N = 1,112$) and confirmatory analyses on the other ($N = 1,234$). In the unweighted sample, 69% of participants were White, 17% were Asian American/Pacific Islander, 8% were Hispanic/Latino/Chicano, 4% were African American/Black, 1% were American Indian/Alaskan Native, and 67% of the sample was female.

Missing Data Analysis

In social science empirical research, it is important to address the issue of missing data in quantitative studies. Researchers have used missing data techniques such as multiple imputation or EM algorithm to replace data. For this study, we utilized EM algorithms to replace missing data. To maintain statistical power, we replaced missing values for all independent variables using the EM algorithm. The EM algorithm represents a general method for obtaining maximum likelihood (ML) estimates when a small proportion of the data is missing (Dempster, Laird, & Rubin, 1977, cited in Allison, 2002; McLachlan & Krishnan, 1997). Less than 10% of the cases for the variables included in this study had missing data.

The EM algorithm consists of two steps—an expectation step, and a maximization step—that are repeated multiple times in an iterative process that eventually converges to the ML estimates. Unlike conventional regression

imputation, in which decisions must be made on which variables to use as predictors, the EM algorithm starts with a full covariance matrix and uses all available variables as predictors for imputing missing data.

Adjusting the Data for Non-Response

We created weights using the characteristics of each institution's first-year student population to correct for possible sources of response bias and to approximate the total first-year population for each campus. We requested electronic data from each institution on its population of first-year students so that we could develop the weights for their campus. We used the same weighting technique for all of the institutions.

To ensure that the weighted sample did not produce incorrect standard errors and inflated t-statistics results due to a large weighted sample size, we created an adjusted weight variable. This adjusted weight variable is the final total weight variable divided by the mean of the final total weight variable for all groups. This adjustment ensures that the weighted sample will closely match the original sample size, yet still yield a sample that proportionally corrects for nonresponse across the sample.

Main Dependent Variable

The primary outcome measure in the model was a latent factor that represented students' sense of belonging to the university. This factor was indicated by three items (e.g., "I see myself as a part of the university community"), each of which was scored on a four-point Likert scale (1 = "strongly disagree" to 4 = "strongly agree"). Means and standard deviations for all variables in the model are shown in Table 1 for separate samples of White students and students of color along with tests of significant group differences. (Correlation matrices are available upon request).

Endogenous Variables

Excluding the primary dependent measure, we used four endogenous variables or factors in the model. First, previous studies have shown that perceptions of racial tension influence students' sense of belonging. We measured this construct with a single item ("there is a lot of racial tension on the university campus"), which was scored on a four-point Likert scale (1 = "strongly disagree" to 4 = "strongly agree"). To adjust for the unreliability of the observed variable, we created a single-item factor.

Second, we also hypothesized that the frequency of positive interactions with diverse peers was related to the student's sense of belonging. We parceled the six items that measured this construct into three groups of two items; each parcel was the mean of the two measures that comprised it. Items were grouped together based on factor loadings from preliminary analyses (i.e., the item with the highest loading was paired with the item with the lowest

TABLE 1
MEANS AND STANDARD DEVIATIONS OF DIVERSITY AND TRANSITION VARIABLES
BY WHITE STUDENTS AND STUDENTS OF COLOR AND T-TESTS

<i>Variables and Factors</i>	<i>White Students</i>		<i>Students of Color</i>		<i>Group Comparison</i>				
	<i>Mean</i>	<i>SD</i>	<i>n</i>	<i>Mean</i>	<i>SD</i>	<i>n</i>	<i>t</i>	<i>df</i>	<i>p</i>
Proportion of Whites in precollege environments^a									
Racial composition of neighborhood grew up in	4.22	.89	849	3.35	1.26	374	-13.741	1221	***
Racial composition of high school	3.88	.91	848	3.15	1.09	370	-12.117	1216	***
Racial composition of friends in high school	4.06	.85	848	2.91	1.14	371	-19.490	1217	***
Precollege predisposition to participate in diversity activities^b									
Participate in activities of my own culture in college	2.07	.87	846	2.83	.87	371	13.946	1215	***
Take diversity course first year of college	2.16	.89	845	2.37	.92	370	3.646	1213	***
Join cultural diversity organization in college	2.23	.77	840	2.59	.88	371	7.314	1209	***
Positive interactions with diverse peers in college^c									
Discussed/studied with diverse peers	3.18	1.09	812	3.60	.98	357	9.325	1167	***
Talked honestly about race with diverse peers	2.93	1.07	822	3.34	1.06	361	6.102	1181	***
Dined/socialized with diverse peers	3.47	.99	821	3.89	1.03	361	6.598	1180	***
Anxiety interacting with diverse peers in college ^d	1.67	.64	803	1.69	.60	354	.469	1155	NS
Hours per week socializing with other students ^e	4.08	1.43	820	3.82	1.46	361	-2.872	1179	**
Lived with parent(s) (0=No, 1=Yes)	0.13	.33	803	0.21	.41	356	3.850	1157	***
Gender (1=Male, 2=Female)	1.68	.47	856	1.66	.47	378	-5.68	1232	NS
Perceived racial tension on campus ^f	1.69	.72	815	1.81	.77	359	2.478	1172	*

Table 1, cont.

<i>Variables and Factors</i>	<i>White Students</i>		<i>Students of Color</i>		<i>Group Comparison</i>		
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Sense of belonging^f							
I see myself as a part of the university community	2.98	.84	3.01	.81	.617	1170	NS
I feel a sense of belonging to this university	2.93	.86	2.88	.87	-.902	1172	NS
I feel that I am a member of the University community	2.99	.87	2.97	.86	-.500	1173	NS

*p < .05, **p < .01, ***p < .001

^a Five-point scale: From all people of color = 1 to all White = 5.

^b Four-point scale: From very unlikely = 1 to very likely = 4.

^c Five-point scale: From never = 1 to very often = 5.

^d Four-point scale: From often = 1 to never = 4. Coded so that anxiety with diverse groups different from their own was captured.

^e 1 = 0 hours, 2 = 1-5 hours, 3 = 6-10 hours, 4 = 11-15 hours, 5 = 16-20 hours, 6 = over 20 hours.

^f Four-point scale: From strongly disagree = 1 to strongly agree = 4.

loading, etc.; see Bandalos, 2002). The items asked students how often they interacted with peers from a different racial or ethnic group (e.g., “had intellectual discussions outside of class,” “socialized or partied”) and were measured with a five-point Likert scale (1 = “never” to 5 = “very often”).

Third, we also included the frequency of anxious interactions with diverse peers in the model. This variable was the mean of several items that asked how often the student “felt uncomfortable in a situation with a person or a group of people” from a particular racial/ethnic group. For example, if the respondent was Asian American, this variable would be the mean of the self-reported frequency of anxious interactions with African Americans/Blacks, with Whites/Caucasians, with Hispanics/Latinos/Chicanos, and with American Indians/Alaskan Natives.

Fourth, we created a factor that reflected students’ predisposition to participate in diversity-related activities in college. Each of the three items that indicated this factor asked students how likely they were to engage in various activities in college (e.g., “join an organization that promotes cultural diversity”) and was scored on a four-point Likert scale (1 = “very unlikely” to 4 = “very likely”). Table 2 contains all of the latent factors in the model with their loadings and alpha reliabilities.

Exogenous Variables

One of the exogenous measures was a three-item factor that gauged the diversity in students’ precollege environment, based on the level of segregation in their neighborhood and school (Orfield et al., 1997; Orfield & Lee, 2006). More specifically, the three items inquired about the demographics in the neighborhood where students grew up, in the high school from which they graduated, and of their friends in high school (1 = “all or nearly all people of color” to 5 = “all or nearly all White”). The remaining variables—all of which were single-item observed variables—served as controls for the other variables in the model. One dummy variable reflected whether students lived with their parents in their second year of college. Another dichotomous variable measured students’ gender (1 = male, 2 = female). To control for students’ feeling typically comfortable in social environments, another variable gauged the number of hours that students socialized each week (1 = 0 hours, 2 = 1–5 hours, 3 = 6–10 hours, 4 = 11–15 hours, 5 = 16–20 hours, 6 = over 20 hours).

Groups

We used a dummy-coded variable for race (1 = White, 0 = person of color) for subgroup analyses and selected two groups for analyses. Asian American/Pacific Islanders, Hispanic/Latino/Chicanos, African American/Blacks, and American Indian/Alaskan Native were included in the students of color group.

TABLE 2
FACTOR LOADINGS AND RELIABILITIES FOR
INDEPENDENT VARIABLES
(N = 17,792)

<i>Factor Scales and Item Wording</i>	<i>(alpha)</i> <i>Factor Loading</i>
<i>Proportion of Whites in precollege environments</i> ^a	(.853)
Racial composition of friends in high school	.843
Racial composition of high school	.826
Racial composition of neighborhood grew up in	.768
<i>Precollege predisposition to participate in diversity activities in college</i> ^b	(.670)
Join cultural diversity organization in college	.773
Take diversity course first year of college	.589
Participate in activities of my own culture in college	.565
<i>Positive interactions with diverse peers in college</i> ^c	(.884)
Had intellectual discussions outside of class	.823
Shared personal feelings and problems	.806
Dined or shared a meal	.763
Socialized or partied	.715
Had meaningful and honest discussions about race/ethnic relations outside of class	.693
Studied or prepared for class	.693
<i>Sense of belonging</i> ^d	(.909)
I feel that I am a member of the university community	.981
I see myself as part of the university community	.837
I feel a sense of belonging to this university	.819

^a Five-point scale: From all people of color = 1 to all white = 5.
^b Four-point scale: From very unlikely = 1 to very likely = 4.
^c Five-point scale: From never = 1 to very often = 5.
^d Four-point scale: From strongly disagree = 1 to strongly agree = 4.

ANALYSES

We conducted structural equation modeling (SEM) analyses, analyzing the covariance matrix of the data using the SEM software EQS Version 6.1 (hereafter EQS). Approximately 50% of the sample was randomly selected to perform exploratory analyses and to make modifications to the structural model ($n = 1,122$). We performed Cronbach's alpha reliability estimates on each group of items that we hypothesized would measure latent factors. The alphas in this model ranged from .67 to .91 with a median of .87. (See Table 2.)

Latent factors were confirmed in the next step of estimating a measurement model. We computed a measurement model that utilized all of the latent factors, the indicators for those factors, and the observed variable that measured the frequency of anxious interactions with peers from different racial/ethnic groups. We included this observed variable because it is an important part of the theoretical framework, unlike gender or number of hours socializing per week, which served as controls in the structural model. Next, based on previous research, we constructed a structural model to test the specific relationships among the constructs.

Based on EQS recommendations, we made several changes to improve the fit of the model to the data. Only changes that were reasonably large ($\chi^2 > 11$) and could be justified theoretically were made to the structural model. After these changes, we also tested a second structural model using subgroup analyses (students of color versus White students). Initially, all paths were constrained to be identical across subgroups. Based on recommendations from EQS, we removed the constraints on three of these paths one by one, analyzing the change in χ^2 to determine whether freeing each of the paths resulted in a statistically significant improvement in the model (Loehlin, 1998).

To ensure that these analyses did not capitalize on chance variation, we created an additional random sample from the remaining cases in the dataset to perform confirmatory analyses of the structural model ($n = 1,234$ weighted cases: 856 White, 378 people of color). All of the results in the following section are from these confirmatory analyses. We used the same procedure on this sample, except that no changes were made to the structural model.

RESULTS

Mean Differences between Students of Color and White Students

Between-subjects t-tests showed that students of color are more likely than White students to have greater precollege exposure to people of color (all p 's $< .001$), to have a greater predisposition to engage in diversity-related activities in college (all p 's $< .001$), to have positive interactions with diverse peers (all p 's $< .001$), to perceive more racial tension on campus ($p < .02$), to spend less time socializing ($p < .005$), and to live with their parents in their second year of college ($p < .005$). (See Table 1.) However, it is interesting to note that there are no significant differences between students of color and Whites in the frequency of anxious interactions across race/ethnicity and in their sense of belonging in the second year of college

Structural Equation Model

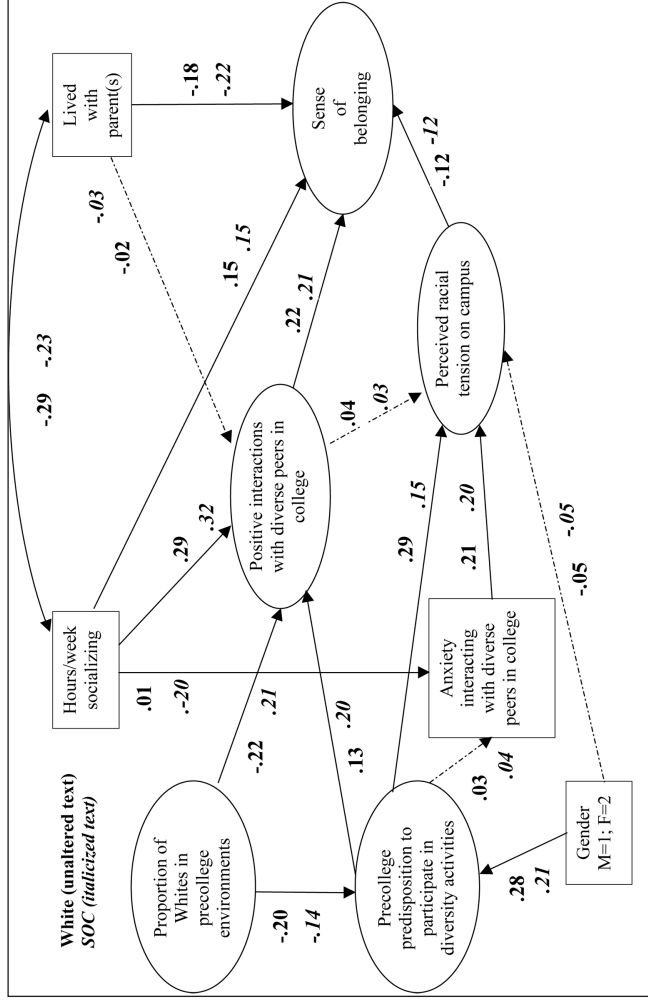
As expected with a sample of this size, the Chi-square statistic was relatively large: $\chi^2(56) = 163.646, p < .001$. However, all other indicators of the fit for the measurement model were more than satisfactory: Bentler-Bonett's normed fit index (NFI) = .972, non-normed fit index (NNFI) = .974, comparative fit index (CFI) = .982, root mean squared error of approximation (RMSEA) = .042, and the ratio of Chi-square to degrees of freedom (χ^2/df) = 2.92. The fit of the structural model was also more than adequate: NFI = .947, NNFI = .953, CFI = .963, RMSEA = .044. Again, as expected, the Chi-square statistic was large in absolute terms ($\chi^2(107) = 332.019, p < .001$); but the ratio of Chi-square to degrees of freedom, which is generally considered the better indicator of goodness of fit, was fairly low ($\chi^2/df = 3.10$). For the most part, these findings were consistent with those from the exploratory dataset.

The primary model of interest was the group comparison model, since our basic interest is whether the race climate and interracial contact play the same role for White students as it does for students of color in their sense of belonging. As the strongest test of this question, we constrained all paths to be equal. However, the removal of three paths yielded a significant improvement in the model: $p < .05$. Based on our theoretical predictions, as well as recommendations made by statistical indicators, released paths included those from (a) proportion of Whites in precollege environments to positive interactions with diverse peers at college; (b) hours per week socializing to anxiety interacting with diverse peers in college; and (c) precollege predisposition to participate in diversity activities to perceived racial tension on campus. All of the goodness of fit indicators for this final model are adequate, and some were quite good: NFI = .904, NNFI = .930, CFI = .939, RMSEA = .038, $\chi^2/df = 2.55$. The final group, partially constrained model is shown in Figure 1, summarizing the standardized direct effects (parameter estimates) for both White students and students of color structural models. Unless otherwise specified, many of the relationships are identical for both groups and all p 's $< .05$. A dotted path indicates the lack of significant coefficients for a hypothesized path.

Direct Effects

A higher sense of belonging in the second year of college is evident among all students who had frequent positive interactions with diverse peers. Consistent with this finding, perceptions of racial tension had a negative impact on sense of belonging for both White students and students of color. Further, as we might expect, students who spent more time socializing were likely to have a higher sense of belonging. In contrast, students who had lived with their parents in the first year of college were likely to have a lower sense of

FIGURE 1. FINAL STRUCTURAL EQUATION MODEL FOR COLLEGE DIVERSITY EXPERIENCES AND SENSE OF BELONGING GROUP COMPARISON



The relationship between diversity experiences and sense of belonging for White students and students of color (SOC). Structural model (Group comparison) NFI = .904, NNFI = .930, CFI = .939, RMSEA = .038, $\chi^2/df=2.55$. Non-significant coefficients are indicated with a dotted path. Disturbances, errors, and observed variables used to create latent constructs are not shown in this figure.

belonging by the second year of college and spent less time socializing, as indicated by the negative correlation between these two variables.

Students' positive interactions with diverse peers were strongly associated with the number of hours per week spent socializing. However, exposure to a higher proportion of Whites in the precollege environment and positive interactions with diverse peers varied across groups such that the relationship is negative for White students and positive for students of color. This indicates that White students who grew up in predominantly White environments have fewer positive interactions in college than those who grew up in more diverse environments. For underrepresented students of color, early exposure to living in a White environment leads to positive cross-racial interactions in college. Greater anxiety about interacting with various groups affects perceived racial tension across both groups. Once this anxiety is controlled, the quality of students' interactions are not associated with perceptions of racial tension.

Having a greater precollege predisposition to engage in diversity activities is associated with greater perceived racial tension, especially for White students, indicating that students may be more critical of the racial climate. Figure 1 also shows the significant correlation indicating that students who lived with their parents were less likely to spend a large amount of time socializing on campus. Parameter estimates for both direct and indirect effects for students of color and White students are summarized in Table 3.

Indirect Effects

Students' hours per week spent socializing have a positive indirect effect on sense of belonging, mediated by students' positive interactions with diverse peers. Anxiety about interacting with diverse peers, in contrast, has a negative indirect effect on students' sense of belonging, mediated by perceptions of racial tension on campus. The proportion of Whites in the precollege environment has an indirect relationship on students' sense of belonging, one which is negative for White students and positive for students of color. It is interesting to note that this precollege variable has a negative indirect relationship on perceptions of racial tension, mediated by predisposition to engage in diversity activities. This finding indicates that perceptions of racial tension were generally lower among both White and students of color who grew up in predominantly White precollege environments, once one accounts for their predisposition to participate in diversity activities. However, the indirect effects also indicate that growing up in a predominantly White environment can also result in fewer positive interactions with diverse peers.

Other significant indirect relationships are also of interest. Women were more likely to perceive racial tension, mediated by their strong predisposition to participate in diversity activities. This was especially true for White

TABLE 3
DIRECT AND INDIRECT EFFECTS OF DIVERSITY EXPERIENCES AND SENSE OF BELONGING

<i>Direct effects</i>	<i>Students of Color (n=378)</i>		<i>White Students (n=856)</i>		<i>R</i> ²
	<i>b</i>	<i>B</i>	<i>b</i>	<i>B</i>	
Anxiety interacting with diverse peers in college					.001
Precollege predisposition to participate in diversity activities	.039	.040	.039	.029	
Hours per week socializing	-.085***	-.201	.004	.010	
Precollege predispositions to participate in diversity activities					.117
Proportion of Whites in precollege environments	-.117***	-.141	-.117***	-.201	
Gender	.261***	.207	.261***	.277	
Positive interactions with diverse peers in college					.167
Proportion of Whites in precollege environments	.217**	.209	-.237***	-.218	
Precollege predisposition to participate in diversity activities	.248***	.198	.248***	.133	
Hours per week socializing	.175***	.320	.175***	.293	
Lived with parent(s)	-.055	-.028	-.055	-.022	
Perceived racial tension on campus					.131
Precollege predisposition to participate in diversity activities	.179*	.154	.450***	.292	
Positive interactions with diverse peers in college	.030	.033	.030	.037	
Anxiety interacting with diverse peers in college	.237***	.198	.237***	.206	
Gender	-.071	-.049	-.071	-.049	
Sense of belonging					.154
Positive interactions with diverse peers in college	.203***	.208	.203***	.220	
Perceived racial tension on campus	-.130***	-.124	-.130***	-.116	
Hours per week socializing	.081***	.152	.081***	.147	
Lived with parent(s)	-.427***	-.218	-.427***	-.181	

Table 3, cont. DIRECT AND INDIRECT EFFECTS OF DIVERSITY EXPERIENCES AND SENSE OF BELONGING

<i>Indirect effects</i>	<i>Students of Color (n=378)</i>		<i>White Students (n=856)</i>	
	<i>b</i>	<i>B</i>	<i>b</i>	<i>B</i>
Anxiety interacting with diverse peers in college				
Proportion of Whites in precollege environments	-.005	-.006	-.005	-.006
Gender	.010	.008	.010	.008
Positive interactions with diverse peers in college				
Proportion of Whites in precollege environments	.029**	-.028	-.029**	-.027
Gender	.065***	.041	.065***	.037
Perceived racial tension on campus				
Proportion of Whites in precollege environments	-.016	-.017	-.062***	-.069
Precollege predisposition to participate in diversity activities	.017	.014	.017	.011
Anxiety interacting with diverse peers in college	-.015	-.029	.006	.013
Lived with parent(s)	-.002	-.001	-.002	-.001
Gender	.051*	.035	.122***	.084
Sense of belonging				
Proportion of Whites in precollege environments	.040**	.040	-.046***	-.046
Precollege predisposition to participate in diversity activities	.025	.020	-.010	-.006
Positive interactions with diverse peers in college	-.004	-.004	-.004	-.004
Hours per week socializing	.037***	.070	.035***	.063
Anxiety interacting with diverse peers in college	-.031***	-.025	-.031***	-.024
Lived with parent(s)	-.011	-.006	-.011	-.005
Gender	.016*	.010	.007	.004

*p < .05, **p < .01, ***p < .001

Note: All paths were constrained to be equal across groups with exceptions noted by differences in unstandardized coefficients (freely estimated paths).

women. Women of color were slightly more likely than men to have a higher sense of belonging in college.

DISCUSSION

These findings provide a more nuanced portrait of racial dynamics in the college environment that lead to students' sense of belonging in the early years of college. The study employed a strong test of whether aspects of these dynamics operate in a similar manner for White students and students of color. Positive interactions with diverse peers result in a greater sense of belonging to one's college or university. It is worth noting that this relationship held even when the amount of time spent socializing was controlled. In fact, positive interactions with diverse peers have a stronger effect on sense of belonging than the total amount of time students spend socializing. Thus, to feel a sense of belonging, it is not only important to interact frequently with one's peers but also to engage with a diverse range of peers in a substantive manner. This finding is consistent with previous research emphasizing that the quality of interactions with diverse peers—not merely the presence of diverse peers—is important (e.g., Chang, Denson, Sáenz, & Misa, 2006; Gurin et al., 2002; Hurtado, 2003a; Sáenz, Ngai, & Hurtado, 2007). This study affirmed the importance of such interactions on the sense of belonging in college for both White students and students of color.

This model also replicated two previous findings. First, perceived racial tension leads to a reduced sense of belonging on campus (Cabrera et al., 1999; Hurtado et al., 2007). Second, living with one's parents also leads to a reduced sense of belonging for both White students and students of color. However, some recent evidence suggests that this may not be the case for Latino students (Hurtado & Ponjuan, 2005); given that all students of color were analyzed as one group, this relationship for specific ethnic groups will have to be determined in future research.

Some of the indirect effects of precollege experiences and predispositions on sense of belonging add to our understanding of the racial dynamics and student outcomes. The relationship between the proportion of Whites in the precollege environment and the frequency of positive interactions with diverse peers worked differently for Whites and students of color. This difference can probably be attributed to differences in who constitutes "diverse peers" (i.e., those from a different racial/ethnic background) for the two groups. White students who grew up in mostly White neighborhoods probably did not have much experience interacting with peers of color before college and find it more difficult to have positive interactions. Therefore, they are also less likely to interact with students of color in college than are White students who previously lived in more diverse areas. However,

students of color who lived in mostly White neighborhoods probably had a great deal of experience interacting with those from different racial/ethnic backgrounds, since the majority of their peers were White.

For indirect effects on the sense of belonging, this study found that White students who grew up with racially and ethnically diverse peers were more likely to interact with such peers in college and thereby had a greater sense of belonging. Students of color who interacted with diverse (White) peers were also more likely to do so in college and thereby had a greater sense of belonging at PWIs. Given the high level of residential segregation in the United States (Orfield et al., 1997; Orfield & Lee, 2006), students from all racial/ethnic backgrounds are often exposed to greater structural diversity in college than in their high schools and neighborhoods. Those students who have greater experience with diversity before college are more likely to embrace it during college, thus leading to a greater sense of belonging.

The relationship between the effect of precollege disposition and perceived racial tension was in the expected direction, but the strength of the relationship diverged from the hypotheses in that the relationship was stronger for White students. One possible explanation is that White students who initially plan to participate in diversity-related activities expect more and may be disappointed with intergroup relations on campus. Therefore, when these students form their judgments about the campus racial climate, they are likely to report racial tension as a problem. Using the perspective of Feldman and Newcomb's (1969) accentuation hypothesis, it makes sense that White students who are predisposed to engage in diversity activities are especially likely to engage in more positive interactions with diverse peers but are also more likely to *perceive* racial tension on their campus than other White students. Therefore, a predisposition toward diversity can be beneficial when it enhances interactions across groups but potentially disappointing for students when campus conditions are not ideal for intergroup contact.

Contrary to one of our hypotheses, the relationship between positive interactions with diverse peers and perceived racial tension was not supported. In one of the most commonly cited works in social psychology, Allport's (1954) contact hypothesis states that interactions across racial and ethnic boundaries can facilitate mutual liking and respect under certain conditions. Using this assumption, colleges and universities often attempt to foster interactions across difference in an effort to promote a number of outcomes, including the reduction of racial tension. We believe that our finding was a result of controlling for students' affective sense of anxiety in interacting with diverse groups. Such anxiety also had a depressing effect on students' sense of belonging, as evidenced by indirect effects for both groups. Therefore, a reduction of intergroup anxiety is key to reducing perceptions of racial tension and producing improvements in students' sense of belonging. This

study has implications for campus climate research in that it underscores the affective dimension of perceived racial tension that can affect important student outcomes like students' sense of belonging and their successful transition to college. However, a practical challenge remains in assessing the climate and improving the racial dynamics on a campus.

Sense of belonging is one dimension of the transition to college process. For a deeper understanding of diversity, other outcomes, which past research shows are important to consider, should also be explored. More research is needed on relationships between diversity and other transition outcomes such as academic self-concept, ease in managing family responsibilities, and ease in making new friends. In our study, we combined African American, Asian American, and Latino students into one group, which is a limitation. Future analyses will disaggregate students of color into discrete ethnic groups. Analyses examining difference for various ethnic groups is important as past research has demonstrated the unique positions of different groups. Racial and ethnic differences could have contributed to the minor differences we saw between students of color and White students and merits attention in future studies.

CONCLUSION

Checkoway (2001) writes, "For democracy to function successfully in the future, students must be prepared to understand their own identities, communicate with people who are different than themselves, and build bridges across cultural differences in the transition to a more diverse society" (p. 267). PWIs have made concerted efforts to increase the number of students of color on their campuses. Many campuses have institutionalized programs and practices designed to support their historically underrepresented students of color and facilitate interactions among diverse students. These include programs that provide academic support, community outreach, and "safe spaces" in addition to initiatives that integrate learning and put strategic plans into place. Examples of their goals and objectives, outlined by Hurtado (2003a) include:

1. Ensuring that students of underrepresented populations have the support they need to be academically successful.
2. Building relationships and developing multicultural skills with members from diverse backgrounds.
3. Enhancing students' ability to participate in a pluralistic, interdependent global community.
4. Increasing the participation of students of color in campus life.

Implicit and explicit in these four goals is a belief that there is a relationship between students' transition to college and their experiences with

diversity. Our findings support the increasing body of literature on the impact of interactions with diverse peers on college outcomes and provide additional empirical evidence to assist campuses who are responding to the AAC&U's charge for "inclusive excellence." Specifically, positive interactions with diverse peers result in an increased sense of belonging to campus, while interactions with diverse peers that result in anxiety detract from this sense of belonging.

The nature of interactions with diverse peers in college is affected by the demographics of students' precollege environment, students' predisposition to engage in diversity-related activities, and the frequency with which students socialize with one another. Given the importance of sense of belonging for promoting student persistence and academic achievement, colleges and universities should find ways to facilitate these interactions with diverse peers that lead to positive educational outcomes. Only recently has the relationship between diversity experiences and various cognitive, sociocognitive, and democratic outcomes been explored (Gurin et al., 2002; Hurtado, 2003a, 2003b; Milem et al., 2005), and much more research needs to be done to understand the types of experiences that yield long-term benefits in a variety of collegiate settings. The skills gained from interactions and relationships with diverse peers are important as a means not only for enhancing college success but also for providing experiences that will benefit graduates as they live and work in an increasingly pluralistic society.

Past research has demonstrated that students' sense of belonging is critical to college transitions. Successful transitions in turn lead to more positive educational outcomes. This paper demonstrated how students' predisposition as they entered college influenced their subsequent interactions but also how interactions in college influence their sense of belonging. It is these experiences that colleges can alter. Our findings underscore the importance of institutions investing resources in supporting and developing programs that facilitate meaningful interactions across racial and ethnic groups. A deepened understanding about how a sense of belonging facilitates college transitions and long-term success in college is key. Future research can explore the extent to which sense of belonging then translates into the development of knowledge and skills to function in a pluralistic society.

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