

Race and Belonging in School: How Anticipated and Experienced Belonging Affect Choice, Persistence, and Performance

MARY C. MURPHY

Indiana University

SABRINA ZIRKEL

Mills College

Background/Context: *A sense of belonging in school is a complex construct that relies heavily on students' perceptions of the educational environment, especially their relationships with other students. Some research suggests that a sense of belonging in school is important to all students. However, we argue that the nature and meaning of belonging in school is different for students targeted by negative racial stereotypes—such as African American, Latino/a, Native American, and some Asian American students. Our conceptual framework draws upon stigma and stereotype threat theory and, specifically, the concept of belonging uncertainty, to explore how concerns about belonging in academic contexts may have different meaning for—and thus differentially affect the academic outcomes of—White students compared with underrepresented racial and ethnic minority students.*

Purpose/Objective: *Although feelings of belonging are important to all students, there are reasons to believe that students from stigmatized racial and ethnic groups may have especially salient concerns about belonging in school because their social identities make them vulnerable to negative stereotyping and social identity threat. Three studies examined how college and middle school students' feelings of belonging at school relate to their academic aspirations, motivation, and performance.*

Research Design: *One experiment (Study 1) and two longitudinal studies (Studies 2-3) examined the influence of belonging among students in different educational settings. Study 1 examined first year college students' social representations of the kinds of students that comprised various majors on campus and their self-reported sense of belonging in those majors. Study 2 examined middle school students' self-reported sense of belonging and how it related to their educational goals and efficacy. Study 3 examined college students' belonging and its relationship to academic performance one year later.*

Setting: *The settings for the three studies varied. The setting for Study 1 was a large, urban, public university in a major Midwestern city that is racially, ethnically, and socioeconomically diverse. The setting for Study 2 was Prince George's County, a predominantly African*

American, largely middle-class county near Washington, DC from which the student sample of middle school students was drawn. The setting for Study 3 was a large predominantly White “flagship” university located in a Midwest college town.

Data Collection and Analysis: Findings revealed that college students’ anticipated sense of belonging in various college majors was predicted by their social representations of the students that comprised those majors. Both White students and students of color anticipated more belonging in majors where they perceived their group to be represented. In Study 2, middle school students’ self-reported belonging in school predicted educational efficacy and ambitions of African American middle school students, but not of White students. Finally, in Study 3, self-reported feelings of belonging in the first weeks of college predicted second semester grades (from university transcripts) among stigmatized college students of color, but not White college students (Study 3). Taken together, we suggest a more nuanced understanding of belonging is essential to creating supportive schools for everyone.

“The most important factor in choosing a college is fit,” according to Martha O’Connell, a professional academic advisor who helps high school students identify the best college for them. O’Connell urges students to visit potential schools, if possible, and to “Imagine yourself as part of the community” (O’Connell, 2007). Gauge, in short, whether you will feel like you *belong* there. Her advice provides a telling, if familiar, story about how students make many academic choices. In this paper, we explore the influence of *anticipated* and *experienced* belonging on students’ academic choices, persistence, and performance in school and college. In particular, we use stigma and stereotype threat theory as a framework to illuminate how different aspects of belonging will have differential influences on the outcomes of White students and negatively stereotyped students of color including African American, Latino/a, Native American, and some Asian American students.

A “sense of belonging” in school is a complex construct that relies heavily on students’ perceptions of the educational environment, especially their relationships with other students (e.g., Juvonen, 2006; Read, Archer, & Leathwood, 2003). That is, a sense of belonging is socially constructed, informed by a student’s experiences in a particular educational context. Research suggests that a sense of belonging in school is important to all students. Feelings of belonging in school have been linked to higher levels of academic engagement (Patrick, Ryan, & Kaplan, 2007), as well as academic motivation and persistence across racial and ethnic groups (Anderman & Freeman, 2004; Battistich, Solomon, Kim, Watson, & Schaps, 1995; Battistich, Solomon, Watson, & Schaps, 1997; Finn, 1989; Goodenow, 1993; Goodenow & Grady, 1993; Hausmann, Schofield, & Woods, 2007; Mahoney & Cairns, 1997; Sánchez, Colon, & Esparza, 2005; Tinto, 1994; Wentzel, 1998). Belonging has also been linked, although

inconsistently, to improved academic achievement (Faircloth & Hamm, 2005; Juvonen, 2006; Roeser, Midgley, & Urdan, 1996; Solomon et al., 2000). In much of this work and theory, however, belonging has been studied as a universal construct having the same meaning and influence on educational experiences for all students (e.g., Baumeister & Leary, 1995). In this paper, we agree that belonging is important to everyone. However, we argue that the nature and meaning of belonging in school is different for students targeted by negative racial stereotypes—such as African American, Latino/a, Native American, and some Asian American students. Our conceptual framework draws upon stigma and stereotype threat theory and, specifically, the concept of belonging uncertainty, to explore how concerns about belonging in academic contexts may have different meaning for—and thus differentially affect the academic outcomes of—White students compared with underrepresented racial and ethnic minority students.

CONCEPTUAL FRAMEWORK

Although feelings of belonging are important to all students, there are reasons to believe that students from stigmatized racial and ethnic groups may have especially salient concerns about belonging in school because their social identities make them vulnerable to negative stereotyping and social identity threat—the threat that one’s social group may be devalued in a particular setting (Steele, Spencer, & Aronson, 2002). Stereotype threat theory (e.g., Steele, 2011; Steele et al., 2002) highlights the role that belonging to a stigmatized group plays in our lives. When our identities are stigmatized by negative stereotypes, we experience stereotype threat—a psychological state characterized by arousal and anxiety that interferes with performance, well-being, and the process of identification with the domain in question. Within education, longstanding stereotypes about the intellectual or academic capacities of African American or Latino/a students mean that those contexts become threatening to their social identities. Similarly, though Asian American students may not be subject to the same negative stereotypes about their intellectual capacities, they are often the target of other negative stereotypes (e.g., perpetual “foreigner”) and questions about their standing and whether they “belong” in a variety of academic contexts (e.g., Cheryan & Monin, 2005; Lee, 2005; 2011; Shimpi & Zirkel, 2012).

In this framework, and within this article, students’ racial and ethnic identifications serve as a means of identifying an aspect of their lived experiences—the shared experience of contending with questions about whether they are seen to “belong” in educational settings, due to their

racial and ethnic group memberships. This is not a study of students' engagement with their own racial and ethnic identities, or even of their active engagement with the racialized nature of many educational contexts. Rather, here we use racial and ethnic identifications to illuminate something about our participants' experiences that is shared among stigmatized groups: the need to manage and operate within a context where negative stereotypes about one's group, abilities, and, indeed, one's likelihood of "belonging," are culturally pervasive.

Educational settings are raced in the sense that the social construction of "race" is enacted and instantiated through a variety of social practices in school (e.g., Leonardo, 2010; Lewis, 2003). Moreover, educational settings are places in which much attention and focus is centered on sorting people based on intellectual performance and achievement. In such a context, concerns about negative intellectual stereotypes that target one's group are heightened and individuals belonging to such stigmatized groups may experience concerns about whether or not they "belong" in those settings. Previous research with African American students in an elite university (Walton & Cohen, 2007) and African American, Latino/a, and Asian American middle school students (Zirkel, 2004) demonstrate the negative impact that belonging concerns can have for students' engagement, enjoyment, and performance in educational settings.

Concerns about fitting in and developing social relationships with peers are exacerbated among students of color entering predominantly White settings—demonstrated among studies of African American students entering social interactions with White students (Richeson & Shelton, 2007; Richeson, Trawalter, & Shelton, 2005; Shelton & Richeson, 2005, 2006), and African American (e.g., Chavous, 2000; Tatum, 1997), Latino/a (e.g., Ethier & Deaux, 1990; 1994; Gibson, Gandara, & Koyama, 2004; Villalpando, 2003), Native American (e.g., Brayboy, 2004; Fryberg, Markus, Oyserman, & Stone, 2008) and Asian American students (e.g., Cheryan & Monin, 2005; Shimpi & Zirkel, 2012) entering predominantly White colleges and universities. For example, African American students often express concerns about rejection in academic settings (Richeson & Shelton, 2007). Likewise, Asian American students experience identity-based rejection in school contexts and express concerns about being perceived as foreigners who have not assimilated linguistically, culturally and socially (Cheryan & Monin, 2005). Shimpi and Zirkel (2012) report several cases illuminating the ways in which White Americans often express anger and resentment toward Asian American students and explicitly question whether they "belong" in a variety of educational contexts. For instance, Asian American students often report being asked, "Where are you *really* from?" by others in school regardless of how long they, or their family,

have lived in the United States (Lien, Conway, & Wong, 2004; Wu, 2003). Latino/as also experience this type of identity threat due to stereotypes that people from their group have immigrated to the United States illegally (K. Johnson, 1997). Thus, students of color, across a number of racial and ethnic identities, may feel uncertain about whether they are perceived to “belong” in particular educational settings. This pattern also extends to other marginalized groups in college settings. For example, Ostrove and Long (2007) found that, at a prestigious liberal arts college, feelings of belonging fully mediated the relationship between both objective and subjective measures of students’ social class origins and their college outcomes such that the negative impact of lower SES on students’ academic and social adjustment, as well as on their academic performance, disappeared when lower SES students experienced greater feelings of belonging on campus.

The current research focuses on how feelings of belonging at school relate to students’ academic aspirations, motivation, and performance. Unlike research that examines how stereotypes and institutional racism can become internalized and hamper students’ self-worth, this research takes a more sociocultural view—locating the problem in the local context or situation. Unlike theories of internalization, stereotype threat theory examines how widely known racial and ethnic stereotypes that exist “in the air” within educational settings have a disproportionate influence on the sense of belonging that students from stigmatized racial and ethnic groups may achieve in school. According to stereotype threat theory, students are aware of stereotypes that impugn their group, and they also know that others in the academic environment (e.g., teachers, peers) could potentially endorse those stereotypes. Rather than internalizing the stereotypes, many students respond to this “stereotype threat” by attempting to disprove the stereotypes about their group—to show that the stereotypes do not apply to them as an individual (Steele, 1997). However, these stereotypes constitute an additional cognitive and emotional burden that interferes with a sense of belonging at school among students from stigmatized groups, including African American, Latino, and sometimes, Asian American, students (for a review, see Schmader, Johns, & Forbes, 2008). As Linda Akutagawa—a Japanese-American, CEO, and President of Leadership Education for Asian Pacifics (LEAP)—describes, “stereotypes make people feel like they don’t belong, like they’re an outsider looking in” (Straczynski, 2014). Indeed, research suggests that while students from stigmatized racial and ethnic groups may experience a strong sense of self-worth and self-esteem overall, stereotypes in the educational context may nonetheless diminish their sense of belonging at school.

Although students from stigmatized groups may be less certain about belonging in academic contexts than their nonstigmatized peers, if they do achieve a sense of belonging, those feelings of connection may have more significant consequences for their academic outcomes. For example, Zirkel (2004) found that feelings of belonging were a significant predictor of enjoyment of academic work and interest in pursuing academic goals among Black, Latino/a, and Asian American students. However, this was not the case among White students. Similarly, Walton and Cohen (2007, 2011) found that an intervention designed to increase students' sense of belonging and "fit" on campus motivated African American students to increase the amount of time they spent studying, improving their academic performance and graduation rates over time; interestingly, the intervention had no similar impact on White students' behavior or outcomes. This research suggests that experiencing a sense of belonging in school may be particularly linked to academic motivation among students from stigmatized groups. Thus, feeling a sense of belonging at school may be an important motivator for stigmatized students, reducing their concerns about negative group stereotypes when they have achieved a sense of fit with the academic context.

This article explores the ways that belonging influences students' academic choices, experiences, goals and outcomes. In particular, we focus on two different aspects of belonging: (a) "anticipated belonging"—that is, students' anticipations about how much they think they will belong in a future educational context, and (b) "experienced belonging"—that is, the extent to which students actually feel connected to and accepted by their peers within a current educational context. Although all students might implicitly or explicitly consult their *anticipated* sense of belonging when making future-oriented academic decisions, we believe that stigmatized students might have greater reason to experience belonging uncertainty when situated within their *actual* academic environments. As a result, we hypothesize that factors that help to reduce this belonging uncertainty will be particularly meaningful to stigmatized students—shaping their academic motivation and performance in school. For example, although relationships with peers are important to all students, the impact of these relationships on students' commitment, persistence, and performance will be greater for stigmatized than for non-stigmatized students. This work goes beyond previous studies of belonging by highlighting the contexts in which belonging has implications for the academic outcomes of all students and when it has implications primarily for students of color as members of a stigmatized group.

OVERVIEW OF PRESENT STUDIES

Belonging, we argue, may matter for everyone, but may matter especially for some. What are the conditions in which belonging matters more for some students than for others? In a series of three quantitative studies, we explore the factors that contribute to feelings of belonging among White students and students of color in a range of academic settings, including middle school and college, as well as predominantly White settings and settings in which racial minority students form a large majority. We then examine the impact of those feelings of belonging on students' academic choices, goals, and performance. With these studies, we hope to illuminate the educational trajectories that feelings of belonging (or not belonging) set up for students who are from social groups differentially targeted by negative stereotypes. Specifically, we investigate how *anticipated* and *experienced* belonging differently shapes young adolescents' and college students' interests in pursuing higher education, their choices of particular majors, and their academic performance. In Study 1, we use an experimental design to explore whether college students possess ideas about how students of various racial groups are dispersed throughout academic fields (what we refer to as their "social representations" of different fields). We next examine whether these social representations significantly shape students' *anticipated* sense of belonging and whether this anticipated belonging, in turn, influences the likelihood that students will consider majoring in these fields during their college careers. The final two studies explore how students' *actual* feelings of belonging and social connection in school are linked to their academic outcomes using naturalistic longitudinal designs to examine how these processes unfold over time. In Study 2, we investigate whether African American and White middle school students' feelings of belonging at school influence the development of their academic goals and feelings of educational efficacy. Finally, in Study 3 we explore the relationship between feelings of belonging and connection with school peers on students' academic performance over time, examining whether these relationships are different for White students and students of color.

STUDY 1

Study 1 explored three questions. First, because both qualitative and quantitative studies have found that students' sense of belonging is influenced, in part, by the representation of, and connections with, others from one's own racial or ethnic group in school settings (see, e.g., Hurtado & Carter, 1997; D. R. Johnson et al., 2007; Read et al., 2003; Villalpando, 2003;

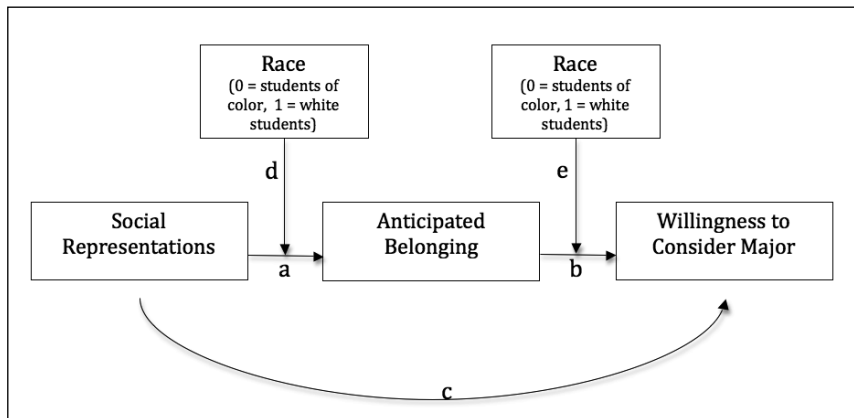
Wilcox, Winn, & Fyvie-Gauld, 2005), we explored whether college students carried with them perceptions about how students from different racial and ethnic groups are distributed among various academic disciplines. That is, do students perceive different disciplines in college to be comprised of different racial groups? If O’Connell’s advice (described at the top of the paper) to “imagine yourself as part of the community” holds for choosing a major, what do students imagine when considering various majors? Which majors are thought to be predominantly White and which include more underrepresented students of color? Second, we examined whether these “social representations” of different disciplines influence students’ anticipated feelings of belonging in those fields. We suspected that all students have a sense of the “racial demographics” of different majors, and that these representations would influence students’ anticipated belonging in these domains. Specifically, we hypothesized that when students perceive that their *own* social group is well represented within certain college majors, they would report greater anticipated belonging in those majors than ones where their racial or ethnic group is perceived to be poorly represented. This should be true for all students, across racial and ethnic groups.

Our last question examined how these social representations and anticipated belonging affect downstream outcomes. In this study, we focused on whether these variables predict college students’ willingness to consider majoring in various academic disciplines. We hypothesized that students’ social representations of race within academic disciplines might influence their willingness to major in those disciplines. Moreover, we expected that anticipated belonging would mediate the effect of social representations on students’ willingness to major in various fields.

However, the simple mediation model, suggested above, could not tell us whether these variables relate to each other similarly or differently for White students and students of color. Given prior research described above, we anticipated that a sense of belonging is important psychologically for all students, especially as they look forward and anticipate whether they will fit in an educational environment. However, stereotype threat theory posits that some students of color—most especially African American, Latino/a, Native American students, as well as many Asian American students (e.g., Shih, Ambady, Richeson, Fujita, & Gray, 2002)—may be particularly uncertain about their sense of belonging in college either because their intellectual abilities or other aspects of their group are negatively stereotyped in that domain and because they are numerically underrepresented in institutions of higher learning (D. R. Johnson et al., 2007; Steele et al., 2002; Walton & Cohen, 2007). Thus, the social representations of “who” students believe comprises academic disciplines

may be more influential when forecasting whether stigmatized students belong in a discipline, than those of non-stigmatized, White students. The degree to which sense of belonging influences academic outcomes may be different between numerically underrepresented students of color (e.g., African American, Latino/a and Asian American students) and White students (Walton & Cohen, 2007; Zirkel, 2004). To examine these questions directly, we tested whether the link between students' social representations and belonging *and* the link between their belonging and willingness to consider the academic majors was moderated by race (see Figure 1 for the hypothesized model). That is, we examined whether White students and underrepresented students of color would differ in (a) the degree to which their social representations shaped their anticipated belonging and (b) the degree to which their sense of belonging influenced their willingness to consider academic majors.

Figure 1. The conditional indirect effect of students' social representations on their willingness to consider areas of study through their perceived sense of belonging, moderated by students' race



SETTING

The setting for this study is a large, urban, public university in a major Midwestern city that is rated as having “selective” admissions—approximately two-thirds of applicants are admitted to the college. This university is the only public university within the city and region and it is significantly less expensive than other local university institutions. The student body is reflective of the racial, ethnic, and economic diversity of the city and includes a high proportion of first generation students from working class families educated in the public school system. Eighty percent of students

receive financial aid, primarily in the form of grants, in order to attend the school. Although a major research university, it serves a largely commuter student body, with a high percentage of first generation students and students working relatively large numbers of hours outside of school. The university is racially and ethnically diverse; official college statistics report that the student population is 42% White, 21% Asian American, 22% Latino/a, 8% African American, and includes 7% “other” or unidentified. The student body has a large immigrant base, with 1/3 of the students identified as “English Language Learners.”

PARTICIPANTS

Three hundred and thirty-eight college freshmen participated in this study for course credit. None of the students in the study had yet selected a college major. Of the students who participated in the study, 158 self-identified as White, 40 as African American, 66 as Asian American, and 74 as Latino/a. Unfortunately, students did not provide more specific racial/ethnic group memberships (for example, very few Asian students indicated a more specific identification indicating a national or regional affiliation such as “Indian American” or “Southeast Asian” and no Latino students specified whether their racial group membership was White or Black). Thus, we used the broader racial or ethnic group memberships that students themselves provided as an indication of racial and ethnic self-identification. Students who identified as “Other” were excluded from this study because it was unclear what they meant by “Other,” and because students did not respond to the “Other” category in a uniform manner (i.e., some listed regional or national identities such as “Middle Eastern” or “Irish”).

PROCEDURE

Students participated in this study as part of an hour-long online experiment involving the completion of many questionnaires presented as separate studies. Each “study” was included its own consent form and instructions. In the present study, participants were asked to estimate the racial breakdown of eighteen majors offered at their university (see the Appendix for a list). Each participant was asked to rate only five majors to reduce fatigue; this resulted in 1,690 evaluations. The majors were randomly assigned to participants without replacement such that the website presented 5 of the 18 majors in random order to each participant. This random assignment to majors ensured that participants could not choose to rate only majors that they liked or disliked, biasing the sample; instead, each participant had an equal chance of rating any 5 of the 18 majors.

Although, ideally, each participant would have rated every major, pilot testing revealed that participants became fatigued when rating all eighteen majors, compromising the quality of the data. Thus, each participant was randomly assigned to rate just 5 of the 18 majors. Several studies later, participants encountered a study about choosing college majors. During this study, they rated their anticipated sense of belonging in the five majors that they previously considered. Finally, participants rated the likelihood that they would major in these five fields.

MEASURES

Social Representations

Students were asked to assign a percentage to five racial categories (White/Caucasian, Latino/Hispanic, African American/Black, Asian/Asian American, and Other) representing their perceptions of the racial background of students comprising each academic major. This question read: “*Approximately what is the racial/ethnic breakdown of [Education] majors at this school?*” Students were free to provide any percentage in the five racial categories that they deemed to be accurate. These numbers summed to 100% of the majors in those fields.

Anticipated Belonging

Three questions adapted from Murphy, Garcia, and Steele (2014) measured students’ anticipated feelings of belonging in the particular majors. Each question was assessed on an eight-point scale ranging from 0 (not at all) to 7 (extremely). These questions read: “*How much do you anticipate feeling like you belong as a student in [Education] courses at this school?*”; “*How comfortable do you think you might feel as a student in [Education] courses at this school?*”; and “*How much do you feel like you could ‘be yourself’ during [Education] courses at this school?*”

Willingness to Major

Students’ willingness to consider the majors were assessed with the item: “*How likely are you to consider majoring in [Education] at this school?*” Students responded using an eight-point scale ranging from 0 (not at all likely) to 7 (extremely likely).

RESULTS AND DISCUSSION

ANALYTIC STRATEGY

Throughout the analyses in this study, the responses of White students are compared to the responses of African American, Latino/a and Asian American students. This analytic strategy is motivated by stereotype threat theory (e.g., Steele et al., 2002) and allows us to compare the experiences of non-stigmatized White students (who comprise the largest racial or ethnic group of the student body at this university) to more underrepresented and stigmatized racial and ethnic minority students, whose group memberships may make them less certain about their belonging in school than their White, nonstigmatized peers (D. R. Johnson et al., 2007). Moreover, separating the data for each racial or ethnic group presents several practical and theoretical challenges. Theoretically, it raises questions how about how we should assess students' statements about "who" is in the major (e.g., should we include perceptions about people from only the student's own racial or ethnic group—examining ingroup and outgroup distinctions very narrowly—or should we include perceptions across stigmatized racial and ethnic groupings, revealing the shared experience of stigma and belonging uncertainty posited by stereotype threat theory?). Practically, separating and reporting the data of African American, Latino/a, and Asian American students would quickly become unwieldy, and it is empirically unnecessary given that the data in this study reveal that the experiences of African American, Latino/a, and Asian American students hold together and significantly differ from those of White students on this college campus.² Thus, going forward, the responses of White students are compared to the responses of African American, Latino/a, and Asian American students, who we refer to, collectively, as "students of color."

SOCIAL REPRESENTATIONS

Students' perceptions about how students of color were dispersed throughout the majors was assessed by summing the percent "Latino/Hispanic," "African American/Black," and "Asian/Asian American" that students assigned to each major. Results revealed a significant interaction between the majors and participants' racial or ethnic group memberships on students' social representations, $F(17, 1654) = 2.27, p < .001$. White students and students of color agreed on the majors they perceived to be majority White and majority students of color; group differences emerged only when the majors were perceived to have much racial variation (i.e., those majors perceived to fall between the "mostly White" and "mostly students of color" majors).

White students and students of color agreed that the majors with the most students of color were two ethnic studies majors—African and African American Studies and Latin American Studies. White students perceived that 79% of the students majoring in these two fields were students of color (21% of majors were perceived to be White); students of color perceived that 74% of students in these majors were students of color (26% of majors were perceived to be White). The majors that were perceived to contain the fewest students of color, according to the White participants, were Political Science and Anthropology (perceived to be about 43% White), while participants of color perceived that Political Science and Psychology had the greatest proportion of White students (at about 51%). Taken together, the data show that even though students' representations of race across the 18 majors varied between White students and students of color, there was consensus about which majors were perceived to be “majority-White” and “majority-students of color.”

SENSE OF BELONGING

Belonging was regressed on students' perceptions of the distribution of race in the majors, the participants' race (dummy coded; students of color = 0, White students = 1), and the interaction of these two factors. Students' race and their perceptions of the distribution of race among the majors significantly predicted students' sense of belonging, $b = .79$, $t(1686) = 2.92$, $p < .001$ and $b = .007$, $t(1686) = 2.07$, $p < .05$. These main effects were qualified by the predicted race X social representations interaction, $b = -.01$, $t(1686) = -3.01$, $p < .001$. This significant moderation indicates that the relationship between students' social representations and their anticipated belonging differs between students of color and White students. Decomposing this interaction by racial group, we find that for White students, as more students of color were perceived to comprise the majors, their anticipated belonging in the majors significantly *decreased*, $b = -.007$, $t(788) = -2.21$, $p < .05$. Students of color showed the opposite pattern: the more that students perceived that the majors were comprised of students of color, the *more* they anticipated belonging in these fields, $b = .007$, $t(898) = 2.06$, $p < .05$.

MODERATED MEDIATION ANALYSIS

We expected that students' anticipated feelings of belonging would account for the relationship between their social representations and their willingness to consider majoring in the various academic fields. That is, we hypothesized that students' social representations of different majors should influence their anticipated belonging, which should in turn, influence their willingness to major in those academic disciplines.

To examine whether White students and students of color's anticipated sense of belonging depended on whether they perceived their own group to be represented in the major, we investigated whether students' race moderated the relationship between social representations and belonging (path "d" in Figure 1). As reported above, this moderation should be significant such that the more one's own racial group was perceived to comprise the majors, the more students should anticipate belonging there.

Also, because some research has documented divergent effects of feelings of belonging on downstream outcomes for White students and under-represented students of color (Walton & Cohen, 2007; Zirkel, 2004), we examined whether the link between anticipated belonging and willingness to consider majoring might also differ between these groups (path "e" in Figure 1). This analysis allows us to examine whether there are differences between White students and students of color in the relationship between their anticipated belonging and their willingness to consider majoring in an academic discipline. That is, do anticipating feelings of belonging in an academic discipline matter for some groups more than others?

To this aim, we conducted a moderated mediation analysis using multiple regression and the recommended bootstrapping procedure described by Preacher, Rucker, and Hayes (2007; SPSS macro: MODMED; Model 5). This analysis used 5,000 bootstrap resamples and a bias-corrected 95% confidence interval at each level of the moderator and is reported as Preacher et al. (2007) recommend. More specifically, we tested whether anticipated belonging would mediate the relationship between students' social representations and their willingness to consider majoring in a field. Students' racial group membership (dummy-coded; 0 = students of color and 1 = White students) was included as a moderator of both the path from social representations to anticipated belonging (path "d" in Figure 1) and the path from anticipated belonging to willingness to consider the academic majors (path "e" in Figure 1).

The results of these analyses are found in Table 1. The first regression examined the effects of the mediator (anticipated belonging) on the predictor (social representations) and the moderator (students' race). As reported above, social representations were positively associated with anticipated belonging and this relationship was moderated by students' race such that the more one's group was perceived to comprise a major, the more one anticipated belonging there.

Table 1. Anticipated Belonging Mediates and Race Moderates the Effect of Social Representations on Students' Willingness to Consider Majoring in a Discipline

Predictor	b	se	t	p
<i>Anticipated Belonging (Mediator Variable Model)</i>				
Constant	2.382	0.193	12.36	0.00
Social Representations	0.007	0.004	2.07	0.03
Participant Race	0.794	0.272	2.92	0.00
Social Representations X Participant Race	-0.014	0.005	-3.01	0.00
<i>Willingness to Consider Major (Dependent Variable Model)</i>				
Constant	-0.306	0.164	-1.87	0.06
Social Representations	0.001	0.002	0.34	0.73
Social Representations X Participant Race	-0.001	0.004	-0.14	0.89
Anticipated Belonging	0.727	0.026	27.82	0.00
Participant Race	-0.052	0.241	-0.22	0.83
Anticipated Belonging X Participant Race	-0.104	0.038	-2.70	0.01

Notes: $N = 1690$. Unstandardized regression coefficients are reported.

Bootstrap sample size = 5,000.

The second analysis regressed the outcome variable (i.e., willingness to consider majoring) on the predictor variable, moderator, and mediator. Results revealed that anticipated belonging was positively related to students' willingness to consider the majors ($b = .73$, $t(1686) = 27.82$, $p < .001$) and that the interaction between participants' race and their anticipated belonging significantly predicted their willingness to consider the majors ($b = -.01$, $t(1686) = -2.70$, $p = .01$).

Though these results support a moderated mediation hypothesis, they do not tell us how this effect differed for White students and students of color. To examine this question, we used the MODPROBE macro provided by Hayes and Matthes (2009) to examine the mediational effect of anticipated belonging on students' willingness to major at the two dummy-coded values of the moderator (i.e., for White students and for students of color). This conditional effect was significant for students of color ($b = 0.72$, $p < .001$, CI: .6762, .7783), and for White students ($b = 0.62$, $p < .001$, CI: .5671, .6773). Thus, the data suggest that when all students perceive that their racial group is represented in a major, they

anticipate a greater sense of belonging there, and they are more willing to consider majoring in that academic field. Consistent with previous research, the effect is larger for students of color than for White students. This suggests that these linkages might be somewhat stronger for students of color than for White students, though it is clearly important for both groups.

SUMMARY AND DISCUSSION

Study 1 demonstrates that students have social representations about how race is distributed throughout academic majors. All groups (i.e., White students and students of color) were affected by these social representations of race when considering future academic choices. In particular, the more people perceived their group to comprise a major, the more anticipated belonging they experienced. Consistent with past work, sense of belonging had somewhat stronger effects for students of color compared to White students. However, anticipated belonging is an important factor for both groups when they consider which fields they would consider studying in college.

Study 1 employed an experimental, quantitative approach to examine the relationship between *anticipated* belonging and academic outcomes among stigmatized and nonstigmatized students. There, we found that students' social representations of race in academic disciplines were a significant predictor of student belonging for both White students and students of color. Moreover, students' belonging significantly predicted their interest in those college majors. Studies 2 and 3 build upon and extend Study 1 by exploring how students' *actual* (not *anticipated*) belonging in school affects their academic outcomes beyond interest in academic disciplines (including their goals, aspirations, and performance in school). Moreover, these studies involve different samples of students and academic contexts. Specifically, Study 2 examines whether feelings of belonging in school predict the educational goals that junior high school students set for themselves and their sense of efficacy in meeting those goals at a middle school comprised mostly of African American students. Study 3 employs a longitudinal design to investigate whether students' feelings of belonging in their first months in college predict their later academic performance.

Following our conceptual framework, we examined whether sense of belonging would be equally predictive of downstream outcomes for stigmatized students of color and White students (as in Study 1 when students report their *anticipated* sense of belonging in school). That is, Studies 2 and 3 explore whether students' actual belonging in school is linked to

downstream educational outcomes for all students, or, as suggested by stereotype threat theory, mainly for students from stigmatized racial and ethnic groups. As students move from predicting their future sense of belonging in school, to reporting what their actual sense of belonging is once enrolled in school, belonging may become more predictive of downstream academic outcomes for these students than for nonstigmatized White students.

STUDY 2

Study 1 suggests that feelings of belonging can have considerable consequences for students' future goals and choices. In Study 2, we wanted to explore whether the effects of belonging can be observed in a younger population that is perhaps setting even more consequential educational goals and plans as they decide whether they will pursue higher education at all. Study 1 revealed that *anticipated belonging* matters to all students, though the data suggest that it might matter more for stigmatized students of color, as this group contends with persistent stereotypes about their belonging in academic contexts, than for White students. Might students' *actual* feelings of belonging have a different impact on academic outcomes? Finally, in Study 1, these issues were explored in a context in which students of color formed a minority of the student population. School segregation data suggest that many younger students attend schools that are far more racially isolated and segregated. That is, many African American or Latino/a students are enrolled in schools in which they form a large majority of the student body. Do students' feelings of belonging matter in these contexts?

In Study 2, we utilize data from a large middle school sample in a predominantly African American and economically diverse county in the Northeast to investigate three theoretically important questions about the downstream consequences of feelings of belonging in school. Do feelings of belonging in school among young adolescents influence their educational aspirations and their own assessments of their likelihood of achieving those ambitions? Is the impact of feelings of belonging in middle school on these goals and ambitions different for White students and for students of color? And finally, do we see the impact of feelings of belonging among a group of African American students in predominantly African American schools?

METHOD

Data for this study are taken from a larger study of adolescent development. The dataset is made publicly available by the original Principal Investigator through the Henry A. Murray Research Center at Harvard University (Eccles, 1997) after researchers pledge to abide by all relevant ethical guidelines for research with human participants. All identifying student information was removed before we gained access to the data. Data were collected in accordance with the ethical principles of the American Psychological Association. All participants and their parents gave their full informed consent to participate in the study and to have their data used for research. Human subjects approval was granted by the PI's university and the relevant officials from the participants' schools.

Although the larger dataset is longitudinal in design, the measures relevant to the present research questions were not collected in later waves of data. Thus, we will examine data from the first year of the larger study, when students were in the seventh grade.

SETTING

The setting of this study is Prince George's County, a predominantly African American, largely middle-class county near Washington, DC. The sample population reflects this broader context (approximately two-thirds of the sample is African American, one-third White).

PARTICIPANTS

The sample for this study consisted of 1,377 seventh grade students (918 African American; 459 White; 51% female, 49% male). The original sample from which the data are drawn consisted of 1,482 seventh grade students (918 African American students; 459 White students; 19 Latino/a students, 32 Asian American students, 8 Pacific Islander students, and 8 Native American students). Unfortunately, the relatively small numbers of Latino/a, Asian American, Pacific Islander, and Native American students, relative to the numbers of African American and White students, meant that statistical analyses could not provide appropriate comparisons of these groups' experiences due to the dramatically different sample sizes. Thus, our analyses focused on comparisons of the African American and White students only.

Participants were recruited by schools across the county, and, as seventh graders, they were typically 12 or 13 years old at the time of data collection. Participants broadly represent urban, suburban, and rural areas of the state, and include a broad range of economic situations.

MEASURES

Measures were included in the original dataset to assess students' feelings of belonging in school, students' educational goals, and educational efficacy. These measures were used to explore the present research questions.

Belonging

Whereas Study 1 examined students' anticipated sense of belonging in various academic disciplines, this study focused on students' actual sense of belonging with their peers in school. Students' belonging with school peers was measured by two items ($\alpha = .70$): "*It's easy to make friends at this school*" and "*I feel as if I really belong at this school*" (1 = strongly disagree; 5 = strongly agree).

Educational Goals and Efficacy

Educational goals and efficacy were measured by two questions developed by Stevens, Puchtell, Ryu, and Mortimer (1992). The item "*How far would you like to go in school?*" assessed students' educational goals. The item "*Not everyone gets to go as far in school as they would like. How far do you think you will actually go in school?*" measured students' perceived educational efficacy. Students responded to both items on a nine-point scale, with higher numbers reflecting higher levels of schooling (i.e., 1 = 8th grade or less; 2 = 9th–11th grade, etc.) and perceived educational efficacy.

RESULTS

We examined the relationships between students' feelings of belonging and their educational goals and efficacy. We began by looking for group differences in our core variables to assess the general pattern of belonging, educational goals, and efficacy between groups. African American and White students in the sample reported nearly identical levels of (high) educational aspirations (White students: $M = 7.57$, $SD = 1.47$; African American students: $M = 7.67$, $SD = 1.59$, $t(1378) < 1.3$, *ns*; these average responses reflect goals of attaining a master's degree, teaching credential, or other professional degree). The students also reported similar levels of educational efficacy (White students: $M = 6.89$, $SD = 1.54$; African American students: $M = 6.77$, $SD = 1.78$, $t(1371) < 1.3$, *ns*; these responses reflect expectations of graduating from a two- or four-year college). African American students, who constituted a majority of the student body, felt significantly greater belonging than did White students, though the variability in students' feelings of belonging was similar within groups ($M = 3.64$, $SD = .83$

and $M = 3.36$, $SD = .87$, respectively; $t(1478) = 5.60$, $p < .001$). This finding replicates others conducted in schools where racial minority students comprise the majority of the student body (e.g., Griffith, 1999). Next, we examined whether feelings of belonging related to students' educational efficacy and goals differently for African American and White students.

Students' reports of their educational goals and efficacy were regressed against the belonging composite to assess the extent to which belonging was associated with a greater commitment to remain in educational institutions for a longer period of time. Among African American students, greater levels of belonging was associated with higher educational goals and higher levels of educational efficacy (see Table 1) (African Americans: Educational Goals, $b = .28$, $t(916) = 3.50$, $p < .001$; Educational Efficacy, $b = .29$, $t(916) = 3.20$, $p < .001$). In contrast, among White students, there was no relationship between belonging and educational goals or educational efficacy (White students: Educational Goals: $b = .11$, $t(457) = 1.13$, ns ; Educational Efficacy: $b = .11$, $t(457) = 1.01$, ns)³.

Table 2. Middle School Students' Feelings of Belonging and Educational Aspirations

Educational Goals Regressed on Feelings of Belonging at School:						
	African American Students <i>n</i> = 913			White Students <i>n</i> = 459		
	<i>b</i>	<i>t</i>	<i>p</i> <	<i>b</i>	<i>t</i>	<i>p</i>
How far would you <i>like</i> to go in school?	.28	3.50	.001	.11	1.13	ns
How far are you <i>likely</i> to go in school?	.29	3.20	.001	.11	1.01	ns

DISCUSSION

These data are consistent with prior studies demonstrating that peer friendships in racially diverse schools affect middle school students' engagement and enjoyment of school (Zirkel, 2004). They are also consistent with stereotype threat theory, which suggests that students' actual experiences of belonging in school may be particularly important for students of color as their racial group is intellectually stereotyped in American society. Here we see that when African American middle school children feel they belong with peers at school, they set higher educational goals for themselves and experience more educational efficacy to reach those goals. These same relationships are not found among White middle school children who may not have the same level of belonging uncertainty in educational environments because they are not stigmatized by similar

intellectual stereotypes. Building on earlier work by Zirkel (2004), this research is one of the first studies to extend previous findings that illuminated the importance of peer friendships to school engagement in a predominantly African American, middle class academic context. African American students still benefited from feelings of belonging with peers even when their group comprised a majority of the student body.

Why might belonging have such a strong effect for African American students, even in contexts where they form the majority? We expect that there are at least two dimensions to the construct of *experienced belonging* in school; and we expect that when students are asked about whether they feel like they “belong,” both dimensions are activated and referenced in their statements. One aspect entails feeling socially connected and “a part” of the school environment—in other words, students report their feelings of belonging *in this particular school setting*. This aspect of belonging may be less problematic in a school environment where one is a part of the majority racial or ethnic group, such as here, in this particular school context. However, another dimension of belonging refers more broadly to a sense of belonging in “school”—that is, school as an institution, writ large. This aspect refers not to a specific school, but to the entire academic enterprise and schools more generally. We expect that this dimension of belonging is less dependent on whether the immediate environment reflects a majority of peers sharing the same racial or ethnic makeup in the setting. Instead, this dimension turns on the climate of the school and the way that “school,” as an institution, is organized—students consider whether the institution of school makes them feel like they, and others like them, can grow, graduate, and bridge to college, as well as whether people like them have a central place in the curriculum and in the organization and running of the school. Are people like them well-represented among the adults in this setting (teachers, principal(s), parent leadership)? Are they made to feel that they and students like them have strong academic potential? Are they encouraged to think that they are “college material”—that higher academic aspirations are something they should be thinking about and planning for? In other words, when students think about schools, are they places for *me and my group*, or rather, are schools for “someone else?” As Stacy Lee (2005) and Noguera and Wing (2006) both eloquently describe, a school can be “college preparatory” and still not be “college preparatory for *me*”—schools are raced and classed in ways that often make clear to students and families who they are “for.” This kind of belonging is an essential component of students’ feelings of belonging in school and might explain why previous studies have found that White students tend to report more belonging in school than racial and ethnic minorities (e.g., Osterman, 2000), why African American students remain relatively uncertain about their group’s

“fit” with school, and why these students’ sense of belonging is predictive of their educational goals and efficacy more so than among White students even in predominantly African American schools.

This study adds to our understanding of the complexity of the relationships between students’ belonging at school and their educational aspirations and efficacy. In particular, we see that although in Study 1, students’ anticipated sense of belonging influenced *both* White students’ and students’ of color academic interests, the experienced sense of belonging we investigate in Study 2 had a stronger effect on the academic outcomes of students of color. Of course, because students’ sense of belonging and their educational efficacy and aspirations were all measured in the seventh grade, there are limitations to how much we can infer about the causal relationships between these factors. In Study 3, we have a better opportunity to assess the relationships between students’ academic belonging and their subsequent academic performance due to the timing and longitudinal research design.

STUDY 3

In Study 3, we return to a college setting and utilize data from a longitudinal study of college students to examine how students’ feelings of belonging on campus are related to their subsequent academic performance. In prior studies, we did not have access to students’ academic records in order to examine whether belonging has a measurable relationship with performance over time. In Study 3, we explore this question and again examine whether the pattern is the same for both White students and underrepresented students of color. Building on Study 2, we hypothesize that there will be a relationship between students’ feelings of belonging early in their college experience and their later academic performance—but that this relationship will appear only for students from underrepresented racial minority groups.

METHODS

SETTING AND CONTEXT OF DATA COLLECTION

Data for this study were drawn from a longitudinal survey of students at a large mid-western state university. A different university from that reported in Study 1, this is a predominantly White “flagship” university located in a college town. The student body at this university is moderately racially and economically diverse. Although attempts have been made to ensure that the full racial and economic diversity of the state is represented in the student body, these efforts have had only partial success, and consequently the student body from which this sample was drawn is disproportionately White and middle class.

The study from which these data were drawn was focused on students' engagement in college and their extracurricular activities and well-being. Students were recruited to participate during the summer before matriculation. The primary focus of the study was students' experiences of college life viewed through the lens of their engagement in extracurricular group activities. For the purposes of the present study, we were interested in how students' engagement with, and the depth of their connection to, peers early in their college experience shaped their later academic performance in college. Although all three studies examine the effects of belonging derived from perceptions of, and relationships with, peers in the academic environment, the dataset used in this study allowed us to go beyond the two reported above to examine how students' connections with peers early in the first year of college relates to academic outcomes at the end of that year.

PARTICIPANTS

The researchers recruited a random sample of 10% of two successive undergraduate classes at the university and surveyed them about their experiences on campus in the beginning of their first year of college and at the end of their second semester. A total of 452 students (243 women, 199 men) participated in the two surveys, and approximately three-fourths of them agreed to provide access to their academic records. The present study included the 357 students who completed both surveys and who granted permission to access their official academic transcripts (i.e., all students whose had complete data). This final sample reflected the racial and ethnic make-up of the predominantly White university, and included 315 White students and 42 underrepresented students of color (25 African American, 15 Latino/a, and 2 Native American students). The relatively small numbers of students of color in this sample meant that statistical analyses required that we collapse across identifications for racial and ethnic minority students. While ideally we would examine the experience of each racial and ethnic minority group, collapsing across groups that are negatively stereotyped allows an examination of questions that emerge from our theoretical framework on the role of stigma and negative stereotyping in educational contexts. Students participated in the study voluntarily and in accord with the ethical guidelines of the American Psychological Association. Full informed consent was secured from all study participants, and the research was approved by the Human Subjects Committee of the university.

MEASURES

As in the previous study, these data were collected by other researchers for purposes that were aligned with, but not identical to, our own. The data we received contained no student identifying information (Kemmelmeyer, 2013). The survey was focused primarily on students' participation in organized extracurricular activities, and the relationship between their extracurricular activities and the rest of their college experience. Students were asked about their extracurricular involvement, relationships with peers, and overall well-being. Finally, using official campus records, students' college admission test scores (SAT) and college grades were collected.

Belonging

In this study, we operationalized experiences of belonging in a different way, given the available data. The longitudinal study included extensive data on students' relationships and engagement with school peers. Much of the focus of the original study was on students' participation in extracurricular activities, in part because previous work demonstrates that extracurricular activities play a central role in students' experiences of connection and belonging at school (Astin, 1997; Chavous, 2000; Guiffrida, 2003; Milem, Chang, & Antonio, 2005). Given this research, we conceptualized students' experiences of belonging as the extent to which their peer relationships at school played a central role in their daily lives.

Students reported on all extracurricular activities that they participated in. They were then asked to select the extracurricular activity that they identified as "*most important to your college experience.*" Next, in a series of four questions, students reported the extent to which they spent time with other students from that extracurricular organization outside of its official activities—in outside activities such as studying, socializing, sharing meals, and "just hanging out" with group members (e.g., *How often during a typical week do you eat with other students who participate in [your most important extracurricular activity]?*). Students responded using a four-point scale (1 = never, 4 = always). This measure revealed the degree to which friendships formed in extracurricular groups were deeply embedded in their daily lives. A belonging score was created by averaging across all four items (= .87). This score served as our measure of students' experiences of belonging with peers on campus.

Academic Performance

Students' SAT scores and college academic performance were assessed directly from university records with students' permission.

RESULTS AND DISCUSSION

Our main focus was to examine whether students' sense of belonging at college was related to their subsequent academic performance. Consistent with stereotype threat theory, we expected that belonging with peers would be significantly related to subsequent academic performance, particularly among students of color (whose groups are negatively stereotyped in academic domains). For these students, feeling connected to peers at school and creating meaningful relationships with them should mitigate stereotype threat concerns and buffer against stereotype threat underperformance in school (Steele et al., 2002). While belonging in school is important for the social development of White students (Goodenow, 1993; Goodenow & Grady, 1993), it may not be as crucial for their academic performance as it is for students of color who contend with group-based stereotypes about belonging and intelligence at school.

First, we examined students' overall feelings of belonging to explore group differences in average levels of connection with peers. Although White students reported slightly higher levels of belonging than did students of color, this difference was not significant; again the variability within and between groups was similar (White students: $M = 2.54$, $SD = .77$, students of color: $M = 2.40$, $SD = .73$, $F(1, 388) = 1.85$, *ns*).

Next, we explored whether these feelings of connection and belonging with peers were related to later academic performance by separately regressing participants' first and second semester GPAs on students' belonging while controlling for their college admission test scores (SAT). Here, the data revealed the pattern predicted by stereotype threat theory. Specifically, students' sense of belonging measured in the first semester of college showed no relationship to *first* semester college grades for either White students or students of color (B 's < .08, *ns*, see Table 3). However, students' belonging in their first weeks of college showed a strong and positive relationship to *second* semester grades for students of color, but not for White students (students of color, $B = .26$, $p < .01$; White students, $B = .05$, *ns*; see Table 3). These data suggest that, for students of color, experiences of belonging very early in their time on campus are related to their academic performance as it unfolds over the course of the entire academic year. These findings suggest that although belonging may not buffer the academic performance of students of color immediately, those early experiences of belonging in college have longer term implications for their academic engagement and performance. Thus, early connections seem particularly important for students of color as they are related to their downstream academic performance.

Table 3. Experienced Belonging and Academic Performance Among Students of Color and White Students

Academic Grades Regressed on Time Spent with Extracurricular Friends in First Weeks of College, Controlling for College Admission Test Scores (SAT):								
	Students of Color <i>n</i> = 44				White Students <i>n</i> = 315			
	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i> <	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Fall GPA (First year of college)	-.05	.13	< 1	<i>ns</i>	.08	.06	1.29	<i>ns</i>
Spring GPA (First year of college)	.26	.12	2.16	.01	.05	.05	1.04	<i>ns</i>

These findings extend our analysis of the relationship between belonging and academic outcomes in at least three ways. First, by showing that experiences of belonging in school are related to the long-term academic outcomes of college students of color, this study extends Study 2, providing initial evidence that the relationship between belonging and academic outcomes continues beyond early adolescence. Second, the present study brings into focus the ways in which peer relationships matter. In this study, the measure of belonging reflects the extent to which students create strong relationships on campus. Here, it refers literally to the extent to which their relationships with peers in a formal group on campus (athletics, band, clubs) are also reflected in their daily lives. As stereotype threat theory suggests, students of color have a different set of concerns than White students. They are concerned about being stereotyped, not “fitting” the educational environment, and not being included in important networks and opportunities (Murphy & Taylor, 2011); these concerns interfere with academic performance (Schmader et al., 2008; Steele & Aronson, 1995; Steele et al., 2002). Having connections with peers at school may help alleviate some of these concerns which may, in turn, forestall academic underperformance among students of color. Because White students do not contend with the same concerns, stereotype theory predicts and these data confirm that belonging is not linked to academic performance in the same way for these students. Future research should examine how experiences of belonging with peers influence other important outcomes for White students such as their social development and self-confidence in school.

Finally, the study supports the view that, for racial and ethnic minority students, social connection early in an academic environment improves academic outcomes. The study design allowed examination of the academic correlates of college friendships formed early in students’ first year

of college. We found that the extent to which underrepresented students are more fully integrated into the social world of college early in their college career presages the development of stronger academic performance over time. In this study, we examined the relationship between those early friendships and later academic performance, while controlling for college admission test scores (SAT). Thus, the relationship between school friendships and academic performance is not merely the result of the more academically successful students of color developing more friends. Rather, the data highlight that friendships and belonging contribute to academic success over time. Here, the time series data and research design supports the interpretation that the social connection and feelings of belonging *lead* to greater academic performance at the end of the first year in college, rather than the other way around.

GENERAL DISCUSSION

Across three studies, we show how *anticipated belonging* as well as *experienced belonging* affect educational outcomes differently for White students and students from stigmatized racial and ethnic minority groups. Consistent with previous research, a sense of belonging matters for all students when they are *anticipating* how they think they will feel in a given educational context. In such cases, *who* students anticipate encountering in the environment—and whether those people are from their own social group—influences students' anticipated sense of belonging. This anticipated belonging, in turn, influences all students' preferences for academic majors but it has the most pronounced effect for stigmatized students of color. Studies 2 and 3 explore the impact of students' actual feelings of belonging and connection with peers in specific academic contexts. Here, we find that the impact of students' connections with peers and feelings of belonging in school shapes educational outcomes only for students of color. In Study 2 we see that a positive relationship between feelings of belonging and educational goals and aspirations emerges only for African American students—and this in a predominantly African American student body. In Study 3 we see the same pattern: connections with peers early in students' college life are associated with positive academic outcomes only for students of color, not for White students. Taken together, then, we see that when making future-oriented educational choices, anticipating a sense of belonging matters for all students. However, when students are already embedded in a particular academic environment, one's actual sense of belonging and connection with peers seems particularly important for stigmatized students (in this case, students of color), as it helps alleviate some of the threat conferred by their stigmatized status in educational settings *writ large*.

BELONGING AND IDENTITY

Why is it that sometimes feelings of belonging influence the behavior and outcomes of White students and sometimes they do not? Surely White students in school also worry about whether they will fit in socially. Indeed, this is the pattern we observe in our first study. There, White students anticipated less belonging in settings in which they expected to find more racial and ethnic minority students and this anticipated belonging influenced their interest in certain college majors. However, when we look at the academic impact of students' actual feelings of belonging in their current educational contexts, we see the influence of belonging holds only for stigmatized students of color.

We believe this pattern of findings can be explained by social identity threat and group differences in students' *belonging uncertainty* in educational settings (Walton & Cohen, 2007, 2011). As alluded to above, much research suggests that educational settings themselves are "raced." That is, students, and even some teachers, associate the institution of education—and especially higher education—as a "White" enterprise (e.g., Carter, 2005; Gillborn, 2008; Lee, 2005; Leonardo, 2010; Lewis, 2003; Noguera & Wing, 2006). Consequently, there is an implied degree of belonging for White students in educational settings: White students are presumed to "fit" in school and university settings, and so they don't share the same group level concerns about whether they "belong" as do racial and ethnic minority students whose groups are seen as "outsiders" to the academic enterprise. Even in academic settings in which students of color make up a majority of the student body, because the *institution* of education is raced in ways that favor White students, experiences of belonging may be more informative and diagnostic of their standing in school for students of color than for White students (Schwarz et al., 1991).

That is, because people of color are not seen to automatically "fit" with educational settings, and because these groups are often the targets of negative stereotypes that impugn their intellectual abilities (Steele, 1997, 2011), feelings of "fit" and belonging might be more meaningful or informative for these groups (Schwarz et al., 1991). Stigmatized students of color might use their feelings of belonging to guide them to places within academic settings that suggest identity safety, rather than threat (Steele et al., 2002). That is, feelings of belonging might inform the entire academic experience for stigmatized students of color. If this were the case, we would expect that the academic choices, goals, efficacy, and even the performance of these students would be linked to their feelings of belonging in school. This is exactly the pattern that we observe.

Previous studies of the impact of belonging on students' experiences tend to involve either qualitative studies of the experiences of particular groups of students in specific academic settings (e.g., Benmayor, 2002; Read, Archer, & Leathwood, 2003; Villalpando, 2003; Wilcox, Winn, & Fyvie-Gauld, 2005) or larger quantitative studies of how belonging shapes *all* students' experiences without more nuanced, theoretically driven hypotheses about how belonging may differ between groups of students (Freeman, Anderman, & Jensen, 2007; Hausman, Schofield, & Woods, 2007; Pittman & Richmond, 2007, 2008). Important work, by Hurtado and others, exploring how racial climates on college campuses shape students' sense of belonging are an important exception (e.g., Hurtado & Carter, 1997; D. R. Johnson et al., 2007). Here, we extend previous work by exploring the downstream consequences of feelings of belonging for students in a wide variety of educational settings. We employ quantitative experimental and longitudinal research designs to further our theoretical understanding of how, when, and for whom belonging matters most. In these studies, we see that "sense of belonging"—measured in multiple ways that index students' relationships with others—is a construct that influences young people as they make choices and decide where to invest their time and energy. These studies remind us that as students make important life choices, the social context of those choices looms large. These studies indicate that questions such as "Who will I be spending my time with if I choose to pursue higher education, this college, this major, or this profession?" seem to play an active, and perhaps central role in the choices young people make about which goals to pursue. Most importantly, we see that concerns about belonging and fitting in—although universal—are especially powerful and poignant for students from negatively stereotyped racial and ethnic minority groups.

Theories of the role that "belonging" plays in the lives of students of color often focus on the ways that institutions are or are not as welcoming and supportive of them as they are for White students (e.g., Hurtado & Carter, 1997). These are indeed important concerns for academic institutions to address. The findings of the present studies suggest that not attending to such climate questions may have especially grave consequences as concerns about belonging and "fitting in" are drawn from a feeling of inclusion with others (e.g., peers in a major, peers and friends at school). These social experiences of schools are especially salient and particularly influential for stigmatized students of color. Moreover, concerns about belonging seem to be tied to "academic institutions" as a whole, and extend beyond the precise racial and ethnic make-up of the institution in question; thus including racial and ethnic minorities in our notions of who school is "for" at a broader socio-cultural level seems particularly important.

RECURSIVE NATURE OF BELONGING, ACADEMIC CHOICES, AND ACADEMIC COMMITMENT

The present work also reminds us that students' choices and commitments are ongoing and recursive. Commitment to the pursuit of higher education, choosing a college, choosing a major, and one's level of engagement in any given educational institution is not static. Instead, these choices are often made and reconsidered as time progresses. Although anticipated feelings of belonging shape the choices and decision-making processes when exploring future options and interests, students may revisit their decision again once they have embarked on their educational path. Once in a school or major, actual feelings of belonging influence ongoing decisions about how much energy to invest in academic pursuits, as observed in Studies 2 and 3. Moreover, experienced belonging will likely shape decisions about whether to stay in a particular college, whether to transfer to another school, or whether to persist in a major. In Studies 2 and 3, we see that students' ongoing commitment to education more generally, and their effort in academic work in particular, is strongly related to their self-reported feelings of belonging in school (Study 2) as well as the extent to which they describe themselves as solidly integrated into a peer community during their first months of college (Study 3). Although none of these studies individually can "capture" the nuanced, and indeed cyclical, nature of the questions students ask again and again about belonging ("Will I fit in here? Or there?"; "Do I fit in here? How do I know?"), together these studies highlight that questions of belonging are persistent ones that influence students at many different times throughout their academic career.

LIMITATIONS

The data we present here capture only parts of the story of students' academic choices, commitments, and engagements. As quantitative data, they offer snapshots of students' experiences; they allow us insight into students' decision-making processes but cannot reveal all the complexities and nuances involved. Nor do they enable students to provide in-depth personal accounts of the meaning of belonging in their academic experiences (such as in Nichols, 2006, 2008, which included a mix of interview and survey data). However, what these data can provide is a demonstration of the pervasiveness and consistency of these patterns across large numbers of participants and within a number of different contexts. Moreover, the large numbers of participants afforded by quantitative data collection methods enables us to demonstrate that the experiences identified by

more qualitative studies of belonging among smaller numbers of participants in very specific educational contexts (e.g., Nichols, 2008) are actually widespread experiences shared by many. This approach enables us to explore the complexity of the meaning of a concept such as belonging and to observe its impact on stigmatized racial and ethnic minority students as they set goals for future educational endeavors, such as college, that may be coded as “White” in their imagination.

The data we present in Studies 2 and 3 offer limited opportunities to make clear causal inferences about the impact of belonging on students’ goals, plans, and outcomes. Our data enable us to use time (in the case of the longitudinal study) and statistical analyses to reveal the relationships between factors theorized to be causally related. However, as Studies 2 and 3 do not include experimental data in which we manipulate levels of belonging and then measure its impact, we cannot make definitive causal claims from them. We argue that the benefits of studying these concepts “in the field” and the external validity accompanying such methods outweigh these limitations, and highlight the consistency of the data across contexts and student populations to support our conclusions. However, future experimental studies will be necessary to definitively draw the causal conclusion that belonging shapes goals and outcomes.

Finally, the conceptualization of belonging that we used throughout these studies is centered on peer relationships. This makes sense, because peer relationships form a core aspect of students’ experience of belonging in a variety of educational settings (e.g., Osterman, 2000; Wentzel, 1998). However, other aspects of students’ feelings of belonging, might center on other factors, including relationships with faculty and staff, or cognitive assessments of the compatibility of an organization’s values and ideals with their own (e.g., Anderman & Freeman, 2004; Osterman, 2000; Wentzel, 1998). These are interesting and exciting areas for future research into the ways that feelings of belonging are developed and the influence they have on students’ experiences.

IMPLICATIONS

Throughout these studies, we see that, although belonging is important to everyone in academic settings, belonging has a particularly powerful influence on the academic interests, plans, goals, and performance of students of color. For this reason, belonging is an important construct in considering how to develop and reshape schools to better serve students of color. Schools and colleges can do a great deal to foster a sense of belonging in classrooms, schools, colleges, and disciplines. Facilitating the development of peer relationships in school that are centered on both

school *and* extracurricular activities will foster students' sense of connection and belonging. Also important is our finding that concerns about belonging seem to shape the educational goals and commitments of African American middle school students in schools in which African American students form a large majority. This suggests that these are issues to which all schools would do well to attend, not just those in predominantly White communities.

Although we saw that all students carry representations of the racial demographics of particular college majors, it is possible that these representations may be particularly damaging for stigmatized students of color, in part because the representations of prestigious and lucrative fields (such as science and math) are overwhelmingly White. Efforts to change those social representations—including the availability of race-matched role models (Zirkel, 2002), mentoring programs, identity-based clubs and organizations (e.g., Black Student Union; Black Engineering Student Societies)—might help as they may shift social representations of those fields and ease students' belonging concerns. It is important to remember that the effects of these social representations on students' intentions to major in different fields are mediated by feelings of belonging. Thus, interventions that focus directly on belonging, such as the one used by Walton and Cohen (2007, 2011) may be particularly effective in shaping student outcomes.

Within higher education, student services is the professional field in which the cocurricular lives of students are carefully considered and energy is directed towards students' total educational experiences—both inside and outside the classroom. Considerations of belonging and connection between students are often foremost among the considerations of student well-being. What might the implications be if a similar level of attention was devoted to students' overall levels of belonging and connection in K–12 settings? We argue that this could have a positive impact on the academic outcomes of racial and ethnic minority students and we would encourage schools to consider ways to actively create such a positive climate for younger students of color.

SUMMARY AND CONCLUSIONS

Across three studies our data illuminate how, and for whom, anticipated and experienced belonging shapes academic outcomes. The choices about where to invest one's time and energy do not occur at a single point in time—rather, they are decisions that people make over and over again. For example, when we choose to pursue higher education, or a particular major, and again when we decide whether to stay with the major or the

college during challenging times, we invest our time and energy more fully and with less ambivalence when we feel like we belong. Those feelings of belonging are derived from our social representations of a setting and the degree to which we see ourselves represented there. Feeling one does not belong saps interest and motivation in a way that is likely to hurt academic performance over time. We may not have conscious access to the fact that these factors influence our choices—the question of how consciously these concerns shape our decisions is an important one for further study—but they nevertheless contribute to our decisions.

Secondly, we find that although feelings of belonging are important for everyone in academic settings, they are especially important for stigmatized students of color. The very nature of stigma, prejudice, and discrimination suggests that feelings of belonging cannot be taken for granted among members of negatively stereotyped groups. The studies we report here are part of a growing body of research that supports this perspective. Becoming more conscious of students' belonging concerns and being vigilant about how these concerns are addressed by institutions are an essential component to creating schools, workplaces, and other settings that support everyone (Zirkel, 2008). College administrators have long realized that efforts to diversify the student body need to extend well beyond the admissions office. We believe that attention and efforts directed at increasing the feelings of belonging among students of color are likely to not only aid efforts to attract (and retain) larger numbers of minority students, but they are also likely to improve the performance and persistence of these students within educational institutions.

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Correspondence concerning this article should be addressed to: Mary C. Murphy, Department of Psychological and Brain Sciences, Indiana University, 1101 E. 10th Street, Bloomington, IN 47405 (email: mcmpsych@indiana.edu).

NOTES

1. The design of Study 1 required a trade-off. In order to have a complete mixed model design, it would have been ideal to have all participants evaluate all 18 of the majors. However, pretesting revealed that participants fatigued after evaluating just half of the majors. Therefore, following other researchers that have encountered this issue (Cuddy, Fiske, & Glick, 2007; Fiske, Cuddy, Glick, & Xu, 2002), participants were randomly assigned to evaluate only a subset of the eighteen majors in order to reduce fatigue, preserve the quality of the data, and minimize order effects. Because these majors were randomly assigned to participants, few participants evaluated the same majors and even fewer evaluated them in the same order. Thus, the with-in subjects nature of the data could not be analyzed.

2. Analyses examining the effects of students' perceptions of the number of White students in the majors were also conducted. The results mirror those presented in Study 1, such that White students experienced more belonging and a stronger willingness to consider a major when they expected White students to comprise a larger percentage of students in a major. Students of color, across racial and ethnic groups, showed the opposite pattern such that the more White students participants perceived to hold the major, the less belonging students of color reported experiencing. The moderated mediational model held in the same way when students' perceptions of the number of White students served as the predictor of belonging and willingness to consider the majors. These analyses, as well as the perceived racial and ethnic representations of each major, are available upon request but are not included here to reduce redundancy.

Additional analyses were conducted to empirically examine whether the responses of Asian American participants were more closely aligned with those of White students or with those of African American and Latino/a students among the university sample in Study 1. Analyses compared the responses of Asian American students to White students and found significant differences in their sense of belonging among the college majors perceived to contain more racial/ethnic minorities (i.e., African American and Latino/a students) than White students, $b = .26$, $t(1168) = 2.34$, $p = .02$. Asian American students felt more sense of belonging in these majors relative to White students. A comparison of responses from Asian American students to those of Black and Latino students revealed no significant differences, $b = .001$, $t(1046) = .007$, $p = n.s$. In this sample, then, the Asian American student responses most closely resembled those of other underrepresented racial and ethnic groups. This finding is consistent with stereotype threat theory that has posited a solidarity or common experience of stigma and underrepresentation among many racial and ethnic minority group members (K. Johnson, 1997; D. R. Johnson et al., 2007; Steele et al., 2002).

3. We also ran the analyses using a self-report measure of the "*grades I typically got*" in elementary school as a control, and it did not effect the results. We do not include this measure because of the inherent problems of asking seventh graders to report elementary school grades.

REFERENCES

- Anderman, L. H., & Freeman, T. M. (2004). Students' sense of belonging in school. In P. R. Pintrich & M. L. Maehr (Eds.), *Motivating students, improving schools: The legacy of Carol Midgley. Advances in Motivation and Achievement* (Vol. 13, pp. 27–64). New York, NY: Elsevier.
- Astin, A. W. (1997). *What matters in college? Four critical years revisited*. San Francisco, CA: Jossey-Bass.
- Battistich, V., Solomon, D., Kim, D., Watson, M., & Schaps, E. (1995). Schools as communities, poverty levels of student populations, and students' attitudes, motives, and performance: A multilevel analysis. *American Educational Research Journal*, 32(3), 627–658.
- Battistich, V., Solomon, D., Watson, M., & Schaps, E. (1997). Caring school communities. *Educational Psychologist*, 32(3), 137–151.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), 497–529.
- Benmayor, R. (2002). Narrating cultural citizenship: Oral histories of first-generation college students of Mexican origin. *Social Justice*, 29(4), 96–121.
- Brayboy, B. M. J. (2004). Hiding in the ivy: American Indian students and visibility in elite educational settings. *Harvard Educational Review*, 74(2), 125–152.
- Carter, P. (2005). *Keepin' it real: School success beyond Black and White*. New York, NY: Oxford University Press.
- Chavous, T. M. (2000). The relationships among racial identity, perceived ethnic fit, and organizational involvement for African American students at a predominantly White university. *Journal of Black Psychology*, 26(1), 79–100.
- Cheryan, S., & Monin, B. (2005). Where are you really from?: Asian Americans and identity denial. *Journal of Personality and Social Psychology*, 89(5), 717–730.
- Cuddy, A. J. C., Fiske, S. T., & Glick, P. (2007). The BIAS Map: Behaviors from intergroup affect and stereotypes. *Journal of Personality and Social Psychology*, 92(4), 631–648.
- Eccles, J. S. (1997). [MADICS Study of Adolescent Development in Multiple Contexts, 1991–1998]. Raw data. Available through the Henry A. Murray Research Archive, Harvard University, Cambridge, MA.
- Ethier, K., & Deaux, K. (1990). Hispanics in ivy: Assessing identity and perceived threat. *Sex Roles*, 22(7), 427–440.
- Ethier, K. A., & Deaux, K. (1994). Negotiating social identity when contexts change: Maintaining identification and responding to threat. *Journal of Personality and Social Psychology*, 67(2), 243–251.
- Faircloth, B. S., & Hamm, J. V. (2005). Sense of belonging among high school students representing four ethnic groups. *Journal of Youth and Adolescence*, 34(4), 293–309.
- Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research*, 59(2), 117–142.
- Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from status and competition. *Journal of Personality and Social Psychology*, 82(6), 878–902.
- Freeman, T. M., Anderman, L. H., & Jensen, J. M. (2007). Sense of belonging in college freshmen at the classroom and campus levels. *The Journal of Experimental Education*, 75(3), 203–220.
- Fryberg, S. A., Markus, H. R., Oyserman, D., & Stone, J. M. (2008). Of warrior chiefs and Indian princesses: The psychological consequences of American Indian mascots. *Basic and Applied Social Psychology*, 30(3), 208–218.
- Gibson, M. A., Gandara, P., & Koyama, J. P. (Eds.) (2004). *School connections: U.S. Mexican youth, peers, and school achievement*. New York, NY: Teachers College Press.

- Gillborn, D. (2008). *Racism and education: Coincidence or conspiracy?* New York, NY: Routledge.
- Goodenow, C. (1993). Classroom belonging among early adolescent students: Relationships to motivation and achievement. *Journal of Early Adolescence, 13*(1), 21–43.
- Goodenow, C., & Grady, K. (1993). The relationship of school belonging and friends' values to academic motivation among urban adolescent students. *Journal of Experimental Education, 62*(1), 60–71.
- Griffith, J. (1999). School climate as "Social Order" and "Social Action": A multi-level analysis of public elementary school student perceptions. *Social Psychology of Education, 2*(3), 339–369.
- Guiffrida, D. A. (2003). African American college student organizations as agents of social integration. *Journal of College Student Development, 44*(3), 304–319.
- Hausmann, L. R. M., Schofield, J. W., & Woods, R. L. (2007). Sense of belonging as a predictor of intentions to persist among African American and White first year college students. *Research in Higher Education, 48*(7), 803–839.
- Hayes, A. F., & Matthes, J. (2009). Computational procedures for probing interactions in OLS and logistic regression: SPSS and SAS implementations. *Behavior Research Methods, 41*(3), 924–936.
- Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino college students' sense of belonging. *Sociology of Education, 70*(4), 324–345.
- Johnson, D. R., Soldner, M., Leonard, J. B., Alvarez, P., Inkelas, K. K., Rowan-Kenyon, H. T., & Longerbeam, S. D. (2007). Examining sense of belonging among first-year undergraduates from different racial/ethnic groups. *Journal of College Student Development, 48*(5), 525–542.
- Johnson, K. (1997). Racial hierarchy, Asian Americans and Latinos as foreigners, and social change: Is law the way to go. *Oregon Law Review, 76*(2), 347–356.
- Juvonen, J. (2006). Sense of belonging, social bonds, and school functioning. In P. A. Alexander & P. A. Winne (Eds.), *Handbook of educational psychology* (2nd ed.) Mahwah, NJ: Erlbaum & Associates.
- Kemmelmeier, M. (2013). Student campus engagement and well-being. [Unpublished data]. University of Nevada, Reno, NV.
- Lee, S. A. (2005). *Up against Whiteness: Race, school and immigrant youth*. New York, NY: Teachers College Press.
- Lee, S. A. (2011). *Unraveling the "model minority" stereotype: Listening to Asian American youth*. New York, NY: Teachers College Press.
- Leonardo, Z. (2010). *Race, Whiteness and education*. New York, NY: Routledge Press.
- Lewis, A. (2003). *Race in the schoolyard: Negotiating the color line in classrooms and communities*. New Brunswick, NJ: Rutgers University Press.
- Lien, P., Conway, M.M., & Wong, J. (2004). *The politics of Asian Americans: Diversity and community*. New York, NY: Routledge Press.
- Mahoney, J. L., & Cairns, R. B. (1997). Do extracurricular activities protect against early school dropout? *Developmental Psychology, 33*(2), 241–253.
- Milem, J. F., Chang, M. J., & Antonio, A. L. (2005). *Making diversity work on campus: A research-based perspective*. Washington, DC: American Association of Colleges and Universities.
- Murphy, M. C., Garcia, J. A., & Steele, C. M. (2014). The fragility of fit: Cues affect the concerns, belonging, and performance of women and men in STEM settings. Manuscript submitted for publication.
- Murphy, M.C., & Taylor, V.J. (2011). The role of situational cues in signaling and maintaining stereotype threat. In Inzlicht, M. & Schmader, T. (Eds.). *Stereotype Threat: Theory, Process, and Applications*. Oxford University Press: New York, NY.

- Nichols, S. L. (2006). Teachers' and students' beliefs about student belonging in one middle school. *Elementary School Journal*, 106(3), 255-271.
- Nichols, S. L. (2008). An exploration of students' belongingness beliefs in one middle school. *Journal of Experimental Education*, 76(2), 145-169.
- Noguera, P. A., & Wing, J. Y. (Eds.). (2006). *Unfinished business: Closing the achievement in our schools*. San Francisco, CA: Jossey Bass.
- O'Connell, M. (2007). How to choose a college that's right for you. *NPR*. Retrieved from <http://www.npr.org/2010/12/08/7506102/how-to-choose-a-college-that-s-right-for-you>
- Osterman, K. F. (2000). Students' need for belonging in the school community. *Review of Educational Research*, 70(3), 323-367.
- Ostrove, J. M., & Long, S. M. (2007). Social class and belonging: Implications for college adjustment. *Review of Higher Education: Journal of the Association for the Study of Higher Education*, 30(4), 363-389.
- Patrick, H., Ryan, A. M., & Kaplan, A. (2007). Early adolescents' perceptions of the classroom social environment, motivational beliefs, and engagement. *Journal of Educational Psychology*, 99(1), 83-98.
- Pittman, L. D., & Richmond, A. (2007). Academic and psychological functioning in late adolescence: The importance of school belonging. *The Journal of Experimental Education*, 75(4), 270-290.
- Pittman, L. D., & Richmond, A. (2008). University belonging, friendship quality, and psychological adjustment during the transition to college. *The Journal of Experimental Education*, 76(4), 343-362.
- Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, 42(1), 185-227.
- Read, B., Archer, L., & Leathwood, C. (2003). Challenging cultures? Student conceptions of "belonging" and "isolation" at a post-1992 university. *Studies in Higher Education*, 28(3), 261-277.
- Richeson, J. A., & Shelton, J. N. (2007). Negotiating interracial interactions: Costs, consequences, possibilities. *Current Directions in Psychological Science*, 16(6), 316-320.
- Richeson, J. A., Trawalter, S., & Shelton, J. N. (2005). African American's implicit racial attitudes and the depletion of executive function after interracial interactions. *Social Cognition*, 23(4), 336-352.
- Roeser, R. W., Midgley, C. M., & Urdan, T. C. (1996). Perceptions of the school psychological environment and early adolescents' psychological and behavioral functioning in school: The mediating role of goals and belonging. *Journal of Educational Psychology*, 88(3), 408-422.
- Sánchez, B., Colon, Y., & Esparza, P. (2005). The role of sense of belonging and gender in the academic adjustment of Latino adolescents. *Journal of Youth and Adolescence*, 34(6), 619-628.
- Schmader, T., Johns, M., & Forbes, C. (2008). An integrated process model of stereotype threat effects on performance. *Psychological Review*, 115, 336-356.
- Schwarz, N., Bless, H., Strack, F., Klumpp, G., Rittenauer-Schatka, H., & Simons, A. (1991). Ease of retrieval as information: Another look at the availability heuristic. *Journal of Personality and Social Psychology*, 61(2), 195-202.
- Shelton, J. N., & Richeson, J. A. (2005). Intergroup contact and pluralistic ignorance. *Journal of Personality and Social Psychology*, 88(1), 91-107.
- Shelton, J. N., & Richeson, J. A. (2006). Ethnic minorities' racial attitudes and contact experiences with White people. *Cultural Diversity and Ethnic Minority Psychology*, 12(1), 149-164.

- Shih, M., Ambady, N., Richeson, J. A., Fujita, K., & Gray, H. M. (2002). Stereotype performance boosts: The impact of self-relevance and the manner of stereotype activation. *Journal of Personality and Social Psychology*, 83(3), 638–664.
- Shimpi, P. M., & Zirkel, S. (2012). One hundred and fifty years of “The Chinese Question”: An intergroup relations perspective on immigration and globalization. *Journal of Social Issues*, 68(3), 534–558.
- Solomon, D., Battistich, V., Watson, M., Schaps, E., & Lewis, C. (2000). A six-district study of educational change: Direct and mediated effects of the child development project. *Social Psychology of Education*, 4(1), 3–51.
- Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, 52(6), 613–629.
- Steele, C. M. (2011). *Whistling Vivaldi: How stereotypes affect us and what we can do*. New York, NY: Norton Press.
- Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African-Americans. *Journal of Personality and Social Psychology*, 69, 797–811.
- Steele, C. M., Spencer, S. J., & Aronson, J. (2002). Contending with group image: The psychology of stereotype and social identity threat. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 34, pp. 379–440). San Diego, CA: Academic Press.
- Stevens, C. J., Puchtell, L. A., Ryu, S., & Mortimer, J. T. (1992). Adolescent work and boys' and girls' orientations to the future. *The Sociological Quarterly*, 33(2), 153–169.
- Straczynski, S. (2014). 7 things not to say to Asian Americans. *Diversity Inc*. Retrieved from <http://www.diversityinc.com/things-not-to-say/7-things-not-to-say-to-asian-americans/>
- Tatum, B. D. (1997). *Why are all the Black kids sitting together in the cafeteria? and other conversations about race*. New York, NY: Basic Books.
- Tinto, V. (1994). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago, IL: University of Chicago Press.
- Villalpando, O. (2003). Self-segregation or self-preservation? A critical race theory and Latina/o critical theory analysis of a study of Chicana/o college students. *Qualitative Studies in Education*, 16(5), 619–646.
- Walton, G. M., & Cohen, G. L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology*, 92(1), 82–96.
- Walton, G. M., & Cohen, G. L., (2011). A brief social-psychological intervention improves academic and health outcomes of minority students. *Science*, 331(6023), 1447–1451.
- Wentzel, K. R. (1998). Social support and adjustment in middle school: The role of parents, teachers, and peers. *Journal of Educational Psychology*, 90(2), 202–209.
- Wilcox, P., Winn, S., & Fyvie-Gauld, M. (2005). “It was nothing to do with the university, it was just the people”: The role of social support in the first-year experience of higher education. *Studies in Higher Education*, 30(6), 707–722.
- Wu, F. H. (2003). *Yellow: Race in America beyond black and white*. New York, NY: Basic Books.
- Zirkel, S. (2002). Is there a place for me? Role models and academic identity among White students and students of color. *Teachers College Record*, 104(2), 357–376.
- Zirkel, S. (2004). What will you think of me? Social integration and educational achievement among White students and students of color in elementary and junior high school. *Journal of Social Issues*, 60(1), 57–74.
- Zirkel, S. (2008). Creating more effective multiethnic schools. *Social Issues and Policy Review*, 2(1), 187–241.

APPENDIX

Alphabetical list of majors (Study 1)

African and African American Studies
Anthropology
Bioscience
Chemistry
Computer Science
Economics
Education
Engineering
English
International Relations
Latin American Studies
Math
Philosophy
Physics
Political Science
Psychology
Sociology
Urban Studies

MARY C. MURPHY is Assistant Professor of Psychological and Brain Sciences at Indiana University. Her research focuses on prejudice, stereotyping, and the situational cues in education and organizations that trigger social identity threat. She has published in various scholarly journals including *Psychological Science*, *Journal of Experimental Social Psychology*, *Personality and Social Psychology Bulletin*, *Cultural Diversity and Ethnic Minority Psychology*, and *Social and Personality Psychological Science*. Along with Sabrina Zirkel and Julie A. Garcia, she has a forthcoming paper in *Educational Researcher* on the use of experience sampling methodology for Education research.

SABRINA ZIRKEL is Professor of Education at in the Mills College School of Education. Her research interests center on issues of race, ethnicity, and gender in education through a critical lens. Recent work has appeared in *Race, Ethnicity, and Education*, *Teachers College Record*, *Social Issues and Policy Review*, and *The Urban Review*. Along with Mary C. Murphy and Julie A. Garcia, she has a forthcoming paper in *Educational Researcher* on the use of experience sampling methodology for education research.