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**Promoting Resilience among African American Girls: Racial Identity as a Protective
Factor**

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Abstract

This study examines school climate, racial identity beliefs, and achievement motivation beliefs within a cultural-ecological and risk and resilience framework. Data were drawn from a longitudinal study of 733 ($M_{age} = 14.49$) African American adolescent girls. A linear mixed effects model was used to determine if racial identity dimensions moderated the relationship between school climate and achievement motivation beliefs across four waves. Results revealed that racial identity (private regard and racial centrality) and ideology (nationalist) beliefs were associated with higher achievement motivation beliefs over time, while racial centrality and private regard, and a sense of belonging served as protective factors. The findings contribute to the importance of racial identity beliefs and increase the visibility of African American girls.

Keywords: racial identity, African American girls, school climate, academic beliefs

Promoting resilience among African American girls: Racial identity as a Protective Factor

There is an ongoing debate in the literature regarding how racial identity beliefs impact African American students' academic outcomes. The deficit-oriented perspective has become well known in contemporary educational discourse, and suggests that a strong attachment to one's racial group places African American students at risk for poorer academic achievement and a decreased sense of school connectedness. Much of this work originated from Fordham and Ogbu's (1986) "Acting White" hypothesis, which proposes that African American students' underachievement is best understood as an expressive response to their historical status and experiences as involuntary minorities in America. According to the hypothesis, African American students are afraid of being accused of "Acting White" if they strive to perform well in school; thus, students instead choose to disengage from the academic process in an effort to maintain allegiance and authenticity as a member of their racial group (e.g., Farkas, Lleras, & Maczuga, 2002; Fordham & Ogbu; Fryer & Torelli, 2010; Ogbu, 2004). For instance, Fordham and Ogbu, (1986) found that Black girls (high-achieving) used more gender-specific coping strategies to adapt to their environment. Farkas and colleagues (2002) found that in high minority schools Black boys and girls who reported being a good student were more likely to be put down by their peers. Lastly, Fryer and Torrelli (2010) found that high achieving Black boys reported having fewer friends in comparison to high achieving Black girls.

Yet, the main underlying problematic assumption with this hypothesis is that academic excellence is positioned as at-odds with racial identity beliefs among African Americans, thus intimating that students cannot simultaneously be "Black" and high-achievers. An increasing body of recent work has severely challenged and largely debunked this hypothesis, instead positing that racial identity beliefs promote academic achievement among African American students (Archer-Banks & Behar-Horenstein, 2012; Byrd & Chavous, 2011; Chavous, Rivas-Drake, Smalls, Griffin, & Cogburn, 2008; Rivas-Drake et al., 2014). This strengths-based approach suggests that having a strong connection to one's racial group membership provides a source of academic and psychological support for African American students that may buffer against negative race-based experiences in school. There is a strong base of empirical evidence supporting the strengths-based approach. For example, Oyserman and colleagues (2001) explored how positive in-group identification (i.e.,

being proud to be Black) and awareness of negative out-group perceptions (i.e., racial prejudice against Blacks) related to academic efficacy among African American middle school students. The findings provided evidence that for African American girls specifically, viewing achievement as part of one's in-group identification or having an embedded achievement ideology, bolstered academic efficacy.

In the present study, we seek to contribute to this research by further exploring the intersection between race and gender and the unique role of racial identity beliefs in the lives of African American girls. More specifically, we were interested in how racial identity beliefs buffer and mitigate the effect of negative school experiences on academic beliefs and attitudes. This study will expand upon previous work by examining nationalist and minority racial ideology beliefs, which are largely overlooked in other racial identity work especially with adolescent populations (see, Smalls & colleagues, 2007, for exception). Further, our analyses focus on the racial identity and educational processes of African American girls specifically, contrary to most research frameworks in social science that consider the roles of either race or gender among African American adolescents (i.e., boys and girls). There is also very little work available that considers how African American girls construe their school environment and how their perceptions relate to motivation and achievement processes. Thus, this study will add to the small body of research that enhances our understanding of African American girls' educational development in relation to their racial identity beliefs.

Focus on African American Girls

Due to the well-documented gender achievement gap that casts African American females as well ahead of their male counterparts in educational attainment and success, there has been less emphasis on the academic experiences of African American girls (e.g., Carter, 2006). Scholars suggest that African American girls receive more affirmative socialization from parents around education (Hill, 2001), encounter fewer academic risks (i.e., unfair disciplinary practices, lowered expectations from school authorities) than boys (Noguera, 2003), and also engender behaviors that are more congruent with schooling contexts (Fordham, 1993). Thus, many studies focus on the plight of African American boys in education. However, Chavous and Cogburn (2007) highlight how the dearth of scholarship available on the educational processes of Black girls and women inhibits scholars' ability to understand their unique risks, needs, and resilience strategies in academic contexts.

There are a dearth of studies that specifically consider the racialized gender socialization of African American girls in relation to schooling, an approach that would better address the intersectionality of racial identity and gender. Morris (2007) reports that African

American girls encounter unique educational perceptions and obstacles related to their race and gender identity centering on historical negative stereotypes of Black females. Although the girls in the study were performing well academically, educators deemed them too “loud, assertive, and unladylike.” Other work suggests African American girls receive unique messages about race and gender that may undermine their educational success (Fordham, 1993; Froyum, 2010) but these studies do not focus on the intersecting social constructions of gender and race for African American girls. In her book, *Teaching Black girls: Resiliency in Urban Classrooms*, Evans-Winter (2005) examines the experiences of working-class African American girls in middle and high school and highlights how the girls draw on networks of social support to navigate their poorly resourced urban school. Her work demonstrates that the girls rely on a community of individuals to support their academic success and other studies have illustrated a strong commitment among African American female adolescents to overcome academic challenges, maintain a sense of school connectedness, and achieve their aspirations to attend college (Archer-Banks et al., 2012; Farinde, 2012; Mirza, 1992, 1997a; Muhammad & Dixon, 2008). Still, none of these studies examine racial identity and achievement motivation beliefs among African American girls.

In defining achievement motivation beliefs we used Skinner and Belmont’s (1983) theory of motivation, in that, achievement motivation is an internal asset, which children and adolescents draw on to persist. Yet, achievement motivation can be hindered within environments depending on how the setting meets students’ basic needs. Thus, if adolescents’ internal academic assets are threatened in the academic setting, this could have a deleterious impact on adolescents’ achievement motivation beliefs. According to Skinner and Belmont (1983, p. 572), engagement involves curiosity and persistence. For instance, exerting effort, being positively engaged in tasks, and having interest and enthusiasm is *academic curiosity*. Students exhibiting disaffection, not exerting effort, and withdrawing from learning activities lack *academic persistence*.

Racial Ideology Beliefs

In the current study, we use Sellers, Smith, Shelton, Rowley, and Chavous (1998) Multidimensional Model of Racial Identity (MMRI) as a conceptual framework for racial identity, which consists of centrality, regard (private and public), and ideology scales. In the current study, the dimensions of racial identity studied were: *centrality*—how central your racial group membership is to your sense of self, *private regard*—how positively you feel about being African American, and *public regard*—your perceptions about how others view African Americans. We also explored the nationalist and the minority ideology beliefs.

Nationalist ideology emphasizes the uniqueness of being Black and having a preference for predominantly Black and African American environments. Minority ideology emphasizes the similarities between Black experiences and other racial and ethnic oppressed groups. The ideology subscales refer to the beliefs associated with racial identity or more specifically, the meaning that individuals attach to being Black (e.g., attributes, characteristics, and values). Although a plethora of research has explored the extent to which centrality and private regard are associated with adaptive academic outcomes (Chavous, 2000; Chavous et al., 2003; Sanders, 1997), and act as buffering mechanisms against negative race-related experiences (Chavous et al., 2008; Dotterer et al., 2009; Sellers & Shelton, 2003; Sellers, Caldwell, Schmeelk-Cone, & Zimmerman, 2003; Sellers, Copeland-Linder, Martin, & Lewis, 2006), less is known about how the ideology subscales operate in promoting academic achievement.

For instance, the extant research suggests that ideology may be important for college students' grade point average (GPA) and college satisfaction. Sellers, Chavous, and Cooke (1998) found that among African American or Black college students, nationalist (e.g., focusing on the uniqueness of being Black) and assimilationist (e.g., focusing on similarities between African American and mainstream views) ideologies were associated with lower GPA. Chavous (2000) found that nationalist ideology was associated positively with perceived ethnic incompatibility (e.g., less fit between one's ethnicity and their institution). In other words, African American students who emphasized the uniqueness of being Black felt threatened to express their ethnic identity on their college campus.

Despite these findings and several other studies suggesting the importance of racial ideological beliefs (e.g., Carter, 2006; O'Connor, 1999; Sanders, 1998), very few studies have empirically explored these dimensions and their role in achievement outcomes among African American youth. In one of the few studies that have explored racial ideologies and achievement among African American adolescents, Smalls and colleagues (2007) found that assimilationist and nationalist ideologies were associated with lower academic persistence. In addition, the findings demonstrated that minority ideology (e.g., Blacks should identify with the oppression of other groups) was associated with higher academic persistence, while assimilationist ideology was associated with lower academic curiosity.

Thus, we were interested in the ways in which racial identity beliefs protect African American girls across racially diverse school districts (e.g., predominately White, predominately Black, and racially and ethnically diverse), and in various aspects of the school climate (peer to peer interracial interaction, racial climate, teacher support, and sense of belonging). Since we were most interested in the racial ideologies that incorporated

students' self-awareness about their racial status in terms of being Black or minority, we did not include the assimilationist ideology (adapting oneself to mainstream values and ideals) or humanist ideology (adopting a race-less persona) subscales. In summary, the present study will focus on the following racial identity beliefs and racial ideology subscales: racial centrality (describing oneself as Black), private regard (being proud to be Black), nationalist ideology, and minority ideology.

Racial Identity Beliefs in Context

Researchers theorize that identity is linked to motivation in important ways, such that individuals are motivated to perform actions that are congruent with their social and personal identities (Oyserman, 2009). Such motivation may be important for understanding adolescent academic motivation and achievement. In one of the few longitudinal studies available that explore racial identity beliefs in connection with academic achievement, Chavous, Bernat, Schmeelke-Cone, Caldwell, Kohn-Wood, and Zimmerman (2003) examined links between dimensions of racial identity, academic beliefs, and academic performance among African American high school students, who were followed from 12th grade until two years later. Results indicated that students' racial identity beliefs were indeed supportive of their academic achievement. Private regard was positively associated with school attachment, relevance, efficacy, and importance. A similar relationship was found for racial centrality, school relevance, and efficacy. In addition, students who were higher in private regard and centrality beliefs were also more likely to be attending college. This study suggests that racial identity is promotive of educational success throughout adolescence and into early adulthood.

Chavous and colleagues (2008) also found empirical support for the notion that strong racial identity beliefs buffered adolescents from the negative impact of perceived racial barriers in their school environment. In that study, African American girls who reported more school-based racial discrimination in the 8th and 11th grade were at risk for lower achievement scores. Further, for girls who scored lower in centrality (i.e., importance of race to one's self-concept), peer racial discrimination was associated with decreased beliefs about school importance. Conversely, girls with a stronger sense of racial centrality were buffered against the negative impact of peer-based racial discrimination on their academic beliefs. However, there are also very few studies available that focus explicitly on the relationship between racial identity beliefs and academic achievement among African American girls.

Thus, our primary research focus involves examining how school climate (e.g., racial climate, supportive teachers, interracial interactions, and sense of belonging) influences the achievement motivation beliefs (e.g., academic curiosity and academic persistence) of

African American adolescent girls. Our focus on the various dimensions of school climate (e.g., sense of belonging, interracial interactions, racial climate, and supportive teachers) was to understand the myriad experiences within the middle and high school settings for African American girls. Adolescents in middle and high school are more likely to move from class to class throughout the day, interact with different teachers, peers, and staff (see Brand et al., 2003). As a result of this movement, adolescents encounters within the school setting shapes academic behavior. Additionally, the research suggests that school belongingness, a healthy racial climate, cross-ethnic peer interactions, and supportive teachers promote positive outcomes (e.g., Graham, Monniksma, Juvonen, 2014; Klem & Connell, 2004; Graham, Munniksma, Juvonen, 2014).

On the basis of previous studies, we considered the social position and context of African American girls and the impact on their schooling experiences. First, we hypothesized that achievement motivation beliefs would differ based on girls' perceptions of a positive or negative school climate. More specifically, girls reporting a positive climate would report higher academic persistence and curiosity in comparison to girls reporting a more hostile racial climate, fewer interracial interactions, less teacher support, and a lower sense of belonging. For the current study, a positive school climate refers to high perceptions of teacher support, a positive racial climate, more interracial interactions among students, and a strong sense of belonging.

The second goal of the study was to examine how racial identity beliefs influence achievement motivation beliefs. Based on previous literature, we hypothesized that higher racial centrality and private regard would be associated with more academic curiosity and persistence. Given the literature on nationalist ideology (Smalls et al., 2007), we predict that nationalist beliefs would be associated with lower achievement motivation beliefs and that minority ideology would be positively associated with achievement motivation beliefs.

The third goal of the study was to explore how racial identity beliefs moderate the relationship between school climate perceptions and achievement motivation beliefs over time. We predicted that racial centrality and private regard would serve as protective factors for African American girls' sense of academic curiosity and persistence amidst perceptions of a negative school climate. Again, given the dearth of research on nationalist and minority ideology in relation to achievement, no hypotheses were generated.

Guiding Framework

To guide our current study, we used Garcia-Coll and colleagues' (1996) conceptual model: the Integrative Model for the Study of Developmental Competencies in Minority

Children, which highlights the intersection of adolescents' social identity position in society (e.g., race, class, and gender) with their experiences in larger, environmental contexts (e.g., school settings). This model is particularly useful in understanding the complexities of the formation of racial identity and gender identity development within particular contextual settings, such as learning environments. For instance, the context of schooling involves multiple nested levels (e.g., classrooms within schools) that play unique roles in the lives of adolescents (e.g., Eccles & Roeser, 2011), in which experiences within this setting may shape adolescents' achievement motivation beliefs.

Previous research has found associations between school climate and achievement motivation beliefs, however it is understudied amongst African American girls. The little that is known suggest that African American boys' perceptions of the school climate has a more deleterious impact on their developmental competencies (e.g., Kuperminc, Leadbeater, Emmons, & Blatt, 1997; Kuperminc, Leadbeater, & Blatt, 2001; Way, Reddy, & Rhodes, 2007). Other studies find that girls encounter unique experiences in the classroom, however, these studies have little to no samples of African American girls (e.g., Brown & Gilligan, 1993; Crick & Rose, 2000; Klein et al., 1994; Loukas & Robinson, 2004; Rys & Bear, 1997). Building on the work of Loukas and Robinson (2004), we explore different aspects of school climate. For instance, Loukas and Robinson (2004) found that girls reporting lower satisfaction and more friction within the classroom reported higher levels of depressive symptoms.

Lastly, we drew on Fergus and Zimmerman's (2005) Risk and Resilience Framework to better understand how African American girls' racial identity beliefs may moderate the relationships between school climate and achievement motivation. Overall, we suggest the following: African American girls' racial identity beliefs serve as culturally strength-based assets, serving as protective in the presence of risk factors. We used the following models to describe the role of racial identity beliefs: protective and a protective-protective model. The *protective model* suggests that girls who are exposed to a negative school climate would have lower achievement motivation beliefs; however, if girls endorse higher levels of racial identity beliefs (i.e., racial centrality, private regard, & minority ideology), these racial identity beliefs will serve as a protective factor for African American girls who encounter a negative school climate. In the *protective-protective* model, both perceptions of a better school climate and positive racial identity beliefs would result in higher achievement motivation beliefs (e.g., Brook, Gordon, Whiteman, & Cohen, 1989; Byrd & Chavous, 2011). For instance, Byrd and Chavous (2011) found that for African American adolescents, those

with higher levels of private regard and racial centrality, and who reported a positive school climate (i.e., teacher and peers) had higher levels of intrinsic motivation - supporting a protective-protective model.

Thus, drawing on Garcia-Coll and colleagues (1996) integrative model and Fergus and Zimmerman (2005) risk and resilience model, the unique interplay between social position (e.g., race and gender), context, and protective mechanisms delineate our understanding of African American girls' schooling experiences.

Methods

Participants

Data were drawn from a longitudinal study that examines how cultural, racial, and socioeconomic contexts influence the developmental competencies of Black or African American children. The study followed a cohort of 1587 adolescents in their 7th, 8th, and 9th grade school year across four waves of data. Adolescents' age ranged from 12 to 16 years of age at Time 1. Our focus in the present study concerned the experiences of African American girls, and the final analyses resulted in a sample of 733 Black adolescent girls ($Mage = 14.49$, $SD = 1.62$). All adolescents were invited to participate in the study. We imputed missing data using the estimation maximization algorithm that replaces missing values with iterative maximum likelihood estimations (Schafer, 1997). Forty-three percent of parents were married and 43.4% of the families reported an average of two children living in the household. Parents who had more than one child completed the demographic survey and were instructed to select the youngest child that participated in the study to indicate their responses to the survey. All questions answered by the parents were answered in reference to this child. Thus, the sample consisted of the youngest child only.

Procedures

African American adolescents were recruited from middle schools and high schools across three socioeconomically diverse school districts located in the Midwest during the 2010-2013 academic school years. The school districts selected for the current study was based on the variation of socioeconomic and racial or ethnic composition status of adolescents in diverse school contexts. School District 1 was racially and ethnically diverse with approximately 46% White, 36% African American, and 14% Asian American students, with another 4% identified as other in the middle school ($N = 785$). The high school was 60% White, 26% Black, and 14% other ($N = 1054$). Twenty-two percent of the schools received free and reduced lunch. School District 2 was predominately African American (93%) and 66% to 82% were eligible for free or reduced lunch across the middle ($N = 536$) and high

school ($N = 1476$). School district 3 was predominately White. In the middle school ($N = 756$) there were 63% White, 20% Black, and 17% other and in the high school ($N = 1843$) it was 64% White, 21% Black, and 14% other. Free and reduced lunch ranged from 24% to 30%. Overall, in this study we were also interested in how attending school districts that were racially and ethnically diverse, predominately White, and predominately Black would impact achievement motivation beliefs. Thus, we controlled for school minority status, in addition to parents' educational level. Information packets were sent home, and parents and or legal guardians gave consent by signing and returning the consent form before administration of the survey. Adolescents also signed assent forms the day of the survey administration. Students who participated were compensated with a \$20.00 gift card for completing a 30-45 minute survey. Institutional Review Board (IRB) was approved for this study.

Measures

Achievement motivation beliefs. We examined adolescents' academic persistence and academic curiosity using adapted items from the Scale for Academic Engagement (Wellborn, 1991). The academic persistence subscale was four items and included statements such as, "When I do badly on a test, I work harder next time." The academic curiosity subscale was comprised of two items (e.g., I participate when we discuss new material). Responses ranged from 1 (not at all true) to 4 (very true). Responses were averaged with higher scores representing higher levels of academic persistence and academic curiosity. Cronbach's alpha for these subscales were .71 and .69, respectively.

School climate. Adolescents' school climate was measured with items from the Inventory of School Climate- Student (ISC-S) Scale (Brand, Felner, Shim, Seitsinger, & Dumas, 2003). The original scale 50-item scale was designed to evaluate school climate and cultural pluralism. For the current study, we used 21 items that examined adolescents' perceived experiences with teachers and peers (*school climate, supportive teachers, interracial interactions, and sense of belonging*). The *school racial climate subscale* was comprised of nine items (e.g., At my school, students of all racial groups are treated equally), the *supportive teachers subscale* was comprised of 6 items (e.g., At my school, teachers go out of their way to help students), the *interracial interactions subscale* included 2 items (e.g., At your school, how often do students work together in the class with others of different racial backgrounds?), and *sense of belonging* included 4 items (e.g., At my school, I feel like I belong when I am at school). The responses ranged from 1 (never) to 5 (always).

Cronbach's alpha values demonstrated high reliability for these subscales, at .80, .87, .74, and .83, respectively.

Racial identity beliefs. Adolescents' racial identity beliefs were measured with items from the Multidimensional Inventory of Black Identity-Teen scale (Scottham, Sellers, & Nguyen, 2008). Four subscales were used: racial centrality, private regard, nationalist ideology, and minority ideology. The racial centrality subscale was comprised of three items (e.g., Being Black is an important part of who I am). The private regard subscale was comprised of three items (e.g., I am happy I am Black). Nationalist ideology was comprised of three items (e.g., Black parents should surround their children with Black art and Black books), and minority ideology was comprised of three items (e.g., people of all minority groups should stick together and fight discrimination). The responses ranged from 1 (really disagree) to 5 (really agree). Higher responses were indicative of higher endorsement of each racial identity belief. Cronbach's alpha for these subscales are .58, .79, .72, and .55, respectively. The measurement for the MIBI-Teen scale was validated and constructed for African Americans within the United States. The scale has been used in numerous studies to assess racial identity, achievement motivation beliefs, and psychological well-being (e.g., Scottham et al., 2008; Smalls et al., 2007; Rowley et al., 1998).

Demographic and control variables. The demographic and control variables in the study included adolescents' age, adolescent report of parent's educational level, and school district minority status. Table 1 provides the means and standard deviations for the study variables across four waves of data.

<insert Table 1>

Results

Linear Mixed Effects Model

The present study analyzed longitudinal data using linear mixed models (LMMs) procedure in SPSS 24.0 statistical software package. The method enables researchers to study change over time and may include both fixed and random effects. Advantages of LMMs include the following: the use of time-invariant and time-varying covariates, accommodation of data available for all subject participants without dropping from the analysis due to missing data, additional covariance structures, inclusion of random effects, and lastly, unbalances longitudinal data sets (e.g., West, 2009; West, Welch, & Galecki, 2007). In this study, school district minority status, parent's educational level, time, racial identity and ideology beliefs, and the school climate variables were treated as fixed-effects because of our interest in the specific differences between girls considered in the study. The metric of time is

the occasion of the study that was added to the model to test the linear effect of time on achievement motivation beliefs. To test the linear effect of time on academic curiosity and academic persistence, Time 1 = 0 (initial assessment) at wave 1, Time 2 = 1 at wave 2, Time 3 = 2 at wave 3, and Time 4 = 3 at wave 4 (at final assessment). Centering time allows the intercept to be interpreted as an estimated initial status (see Peugh & Enders, 2005).

There were three-levels in the individual growth curve model. Level 1 model represents the change each student in the sample is expected to experience over time (i.e., repeated measures over time). At this level, focus is on the students and describes the developmental changes for each student (i.e., variation within the individual over time). The level 1 model estimates the average within-person initial status (intercept) and the rate of change over time (slope). The level 2 model refers to the between-within predictors to explain variation in the intercept (initial status) and slope (growth rate). At level 3, we can model differences in growth between students within school districts (i.e., school climate) using the general modeling framework to examine variation in level 2 random intercept and slope predictors

Unconditional Mean Model (Model 1)

There were significant interindividual differences. Thirty-three percent of the total variation in academic curiosity was due to interindividual differences. There was also 47% of the total variance in academic persistence that was due to interindividual differences. In other words, the estimated average stability of academic curiosity was 33% and 47% for academic persistence. Thus, an individual growth curve model is required as the ICC is above 25% of the variance for both achievement motivation beliefs (see Heinrich & Lynn, 2001).

Unconditional Linear Growth Model (Model 2)

In this model, time was added. This baseline growth curve model examines student variation of the growth rates. The findings in the academic curiosity individual growth curve model suggest that linear growth was constant over time ($\beta = -.01$, $SE = .02$, $p > .05$). For academic persistence, the significant values in both the intercept and slope indicate that the initial status and growth rate were not constant over time ($\beta = -.04$, $SE = .02$, $p < .05$). The mean estimated initial status and linear growth rate for the sample was 3.18 and $-.04$, respectively. The classification variable, adolescent ID (individual adolescent) is a unique identifier for girls and will be considered as a random factor in the analysis. The residual maximum likelihood estimation (REML) will be used for estimating because it produces unbiased estimates of the covariance parameters (see West, Welch, & Galecki, 2007, p. 28).

Linear Growth Model (Adding Predictors)

In the final model, demographics (school district minority status, adolescent age, & parent's educational level), school climate variables (racial climate, interracial interactions, supportive teachers, & sense of belonging), and racial identity and ideology variables (racial centrality, private regard, minority ideology, & nationalist ideology) were added.

Academic persistence. The results revealed that adolescent age was significantly negatively associated with academic persistence ($B = -.03, t = -2.97, p = .003$), with younger adolescents reporting lower academic persistence over time. Private regard ($B = .07, t = 2.68, p = .007$) and minority ideology was associated with academic persistence over time ($B = .08, t = 2.89, p = .004$). School racial climate ($B = .20, t = 6.72, p = .001$) and sense of belonging ($B = .11, t = 4.82, p = .001$) was significantly positively associated with academic persistence over time (see Table 2).

To examine the relationship between time, school climate, and racial identity and ideology beliefs we included all the school climate and racial identity and ideology variables. All pairs of two-way interactions terms and three-way interactions terms were examined. Dawson and Richter (2006) test for differences between slopes was used to determine significance. There were two significant three-way interactions: time x private regard x interracial interactions ($B = .09, t = 2.66, p = .008$) and time x private regard x sense of belonging ($B = -.07, t = -2.63, p = .009$). For Black girls with higher levels of private regard those with lower interracial interactions at the initial status reported higher academic persistence than those with higher levels of interracial interactions. Yet, over time for those with low levels of interracial interactions coupled with higher levels of private regard, academic persistence increased over time with similar levels in comparison to girls with higher levels of private regard and interracial interactions.

There were also significant slope differences for Black girls reporting higher levels of private regard and low interracial interactions and low private regard and low interracial interactions. More specifically, we found that Black girls who reported lower levels of private regard and lower interracial interactions had lower levels of academic persistence than Black girls with higher private regard and lower interracial interactions at the initial status. Over time, their academic persistence was similar. Lastly, Black girls with lower levels of private regard and higher levels of interracial interactions had higher academic persistence than girls with lower levels of private regard and lower levels of interracial interactions at the initial status. Yet, over time girls with lower levels of private regard and higher levels of interracial interactions reported lower academic persistence over time than girls with lower levels of private regard and lower levels of interracial interactions (see Figure 1).

<insert Table 2>

<insert Figure 1>

Analysis revealed significant differences for time x private regard x sense of belonging, as shown in Figure 2. We found that for Black girls with higher private regard and higher levels of sense of belonging at time 1 reported higher academic persistence than those with higher levels of private regard and lower sense of belonging, such that over time Black girls high in both private regard and sense of belonging had higher levels of academic persistence than those with high private regard and a lower sense of belonging.

Similar findings were also found for girls with low private regard and a high sense of belonging. We found that girls high in both private regard and sense of belonging had higher academic persistence than those with low private regard and high sense of belonging at initial status. However, over time academic persistence beliefs of both groups are similar underscoring the importance of a sense of belonging.

Lastly, girls with low private regard and low sense of belonging had lower levels of academic persistence at initial status than girls high in private regard and high in sense of belonging. Additionally, this trend remained the same over time for girls low in private regard and sense of belonging as they had lower levels of academic persistence over time.

<insert Figure 2>

Academic curiosity. In Table 3, we found that private regard ($B = .07, t = 2.22, p = .026$) and nationalist ideology ($B = .06, t = 2.60, p = .009$) was associated with academic curiosity over time. School racial climate ($B = .17, t = 4.96, p = .001$), supportive teachers ($B = .07, t = 2.25, p = .024$), interracial interactions ($B = .07, t = 2.77, p = .006$), and sense of belonging ($B = .10, t = 3.89, p = .001$) also significantly positively predicted higher academic curiosity over time.

Similar to the academic persistence, a series of two-way interactions and three-way interactions were examined. There were two significant three-way interactions: time x nationalist ideology x supportive teachers ($B = -.07, t = -2.18, p = .029$) and time x racial centrality x interracial interactions ($B = -.08, t = -2.34, p = .019$).

The findings revealed for time x nationalist ideology x supportive teachers that girls with lower nationalist ideology beliefs and higher levels of supportive teachers had lower levels of academic curiosity than girls with low nationalist beliefs and low levels of supportive teachers at time 1. However, over time girls in both low nationalist ideology and low supportive teachers reported lower academic curiosity over time (see Figure 3).

<insert table 3>

<insert figure 3>

As shown in Figure 4, girls with high racial centrality and high interracial interactions reported higher academic curiosity beliefs than those high in racial centrality with lower levels of interracial interactions at the initial status. However, as time progressed girls reported similar levels of academic curiosity. Lastly, girls with high racial centrality and low interracial interactions at the initial status reported lower levels of academic curiosity than girls low in racial centrality and low in interracial interactions. Yet over time girls lower in both racial centrality and interracial interactions reported lower levels of academic curiosity than those with higher levels of racial centrality and low levels of interracial interactions.

<insert figure 4>

<insert table 4>

Discussion

In this study, we examined the ways in which African American girls' perceptions of school climate and racial identity beliefs related to achievement motivation beliefs. We also explored how racial identity beliefs and school climate interacted to explain achievement motivation beliefs. We hypothesized that African American girls who perceived a better school climate would have higher achievement motivation beliefs compared to girls who perceived a worse school climate. We also hypothesized that racial centrality, private regard, and minority ideology would be positively related to achievement motivation beliefs, while nationalist ideology would be negatively related. Finally, we hypothesized that racial centrality and private regard would be protective factors for African American girls in the presence of negative school climate experiences. Our hypotheses were partially supported. We found that African American girls who perceived a more positive racial climate, more teacher support, more interracial interactions, and a stronger sense of school belonging also had higher academic curiosity and academic persistence. Racial identity attitudes and school climate constructs were related to the two achievement motivation beliefs in different ways.

First, our hypothesis that perceptions of a positive school climate would be related to higher achievement motivation beliefs was partially supported. A positive school racial climate, including more teacher support and a stronger sense of belonging, was related to both higher academic curiosity and persistence. This indicates that African American girls benefit academically from a school setting in which they feel there is racial harmony, feel supported by their teachers, and feel they belong in the school setting. While other studies have demonstrated the importance of these constructs with African American samples of both adolescent girls and boys (Kuperminc et al., 1997; Nasim, Roberts, Harrell, & Young, 2005; Smalls et al., 2007), our study further confirms the need to understand how the racialized

nature of schooling impacts African American girls. Additionally, interracial interactions were positively related to academic curiosity, but not persistence. While academic curiosity may involve more interactional tasks in the classroom (e.g., participating in class discussions), the academic persistence items in our study involved items that were more individualized (e.g., persistence after failure on an exam). Thus, interracial interactions may be more impactful for tasks that involve classroom (and potentially classmate) engagement.

Second, based on previous literature we hypothesized that racial centrality, private regard, and minority ideology would be positively related to achievement motivation beliefs, while nationalist ideology would be negatively related. We found that private regard was positively related to academic persistence and academic curiosity over time, supporting our hypotheses. The positive association between private regard and academic persistence suggests that private regard allows African American girls' to constructively contend with negative stereotypes about African American underachievement (Crozier, 2005).

Additionally, Mueller and Dweck (1998) found that when Black, White, and Hispanic students were praised for their effort (versus their intellect) during task completion, students were more likely to display task persistence. Thus, positive attitudes about the Black community may help students disregard stereotypes that Black people are innately less intelligent than their White counterparts, which may encourage them to think about academic achievement in terms of effort rather than an innate ability that Black people do not possess. This may then encourage persistence and curiosity in the face of academic challenges because they believe that academic achievement is available to anyone who puts in the effort.

We found that minority ideology was positively related to only academic persistence, partially supporting our hypotheses. Our results replicate those of Smalls and colleagues (2007), who found that minority ideology was related to higher academic persistence in a sample of African American adolescent boys and girls. However, we extend that study by being the first to demonstrate the positive effects of minority ideology beliefs for African American girls specifically. Minority ideology may act to encourage girls in similar ways to racial centrality and private regard. That is, students who understand oppressive systems have historically acted to marginalize certain groups, (1) may feel encouraged to break down such systems through educational attainment, which may therefore lead to higher achievement motivation beliefs, and (2) may be able to disregard stereotypes that Black individuals are inherently or culturally deficient in academics as tactics of discrimination and oppression. Minority ideology may also act to encourage coalition building among students of color in the school context, which may improve sense of belonging, and encourage achievement

motivation among students who feel empowered to break down oppressive power structures by succeeding themselves. Because the school districts in which our students were enrolled varied according to racial demographics, ranging from majority minority to majority White to overwhelming majority African American, we cannot draw firm conclusions about whether minority ideology encouraged coalition building, but we encourage future studies to explore this potential mechanism.

Nationalist ideology was positively related to academic curiosity but not with academic persistence. Previous research shows that nationalist ideology in Black college students was related to lower GPA (Sellers, Chavous, & Cooke, 1998), and persistence may be more closely related to academic achievement, given it predicts effort after academic challenge. Nationalist ideology may however predict more intrinsic motivation to learn and gain knowledge from various class topics, but may cause disillusion regarding traditional notions of academic success, given historical discrimination against people of color. Thus, African American girls who endorse nationalist ideology may feel engaged in classroom discussions or subjects, but may not place high value on traditional avenues to success. They may also feel that the academic system is rigged and may therefore be less likely to persist if they feel their persistence is not meaningful in a system in which their group is marginalized

Third, we hypothesized that racial identity and ideology attitudes would moderate the relationships between school climate and academic motivation beliefs over time and found significant interactions for academic curiosity and academic persistence. First, our findings suggest that private regard and racial centrality served as buffers for Black girls, supporting the assertion that racial centrality, along with other positive racial identity attitudes, may act in ways that protect African American students from negative cues from the environment (Neblett, Rivas-Drake, & Umaña-Taylor, 2012). This work furthers that of Chavous and colleagues (2008), who explored the relationship between racial identity and academic outcomes separately for African American adolescent boys and girls and found that African American girls who had high racial centrality were buffered against the negative association between peer discrimination and school importance.

In our study, we found that feeling positive about being Black and feeling support and belonging at school may be especially important for African American girls' classroom engagement and curiosity. Given the ways in which private regard buffered against the negative effects of a lower sense of belonging, feeling connected to the school may also work together with racial identity attitudes to improve academic outcomes. This is consistent with the notion put forth by Evans-Winter (2005) that Black girls utilize community support to

overcome risk factors (e.g., documenting the unique lived experiences of girls of color and providing a supportive climate) in urban schools. Future studies should examine the extent to which sense of belonging acts as a mechanism by which private regard and racial centrality predict higher academic motivation and achievement.

Private regard and racial centrality despite low or high frequencies of interracial interactions were protective for Black girls over time. However, when Black girls reported lower levels of interracial interactions despite having higher or lower levels of private regard, academic persistence is similar over time. This may be because they are in a context where their sense of self is not being challenged. For instance, interracial interactions subscale of the Inventory of School Climate asked students, “At your school, how often do students work together in the class with others of different racial backgrounds?” It may be that Black girls tended to be in more homogeneous environments. Black girls were also more likely to report lower academic persistence if they reported lower levels of private regard and high interracial interactions. For this finding, we speculate that some interracial interactions in the classroom may be challenging to their sense of self. Classroom observations would help researchers and educators understand how these interactions take place and under what conditions.

Another interesting finding was for Black girls reporting a higher sense of belonging. Black girls endorsing higher or lower levels of private regard and a higher sense of belonging reported higher academic persistence over time. It could be that having a higher sense of belonging in school encourages academic persistence and over time is not challenging to Black girls’ racial identity beliefs. Students who feel as if they belong in a school context may feel like they have more to offer and their voices are being heard and not being silenced. Future research should continue to understand qualitatively what a sense of belonging means for Black girls to further understand ways to promote positive development.

Lastly, in this study we also found that students low in racial identity beliefs and who reported little to no interactions within school whether it be a sense of belonging, supportive teachers, or interracial interactions were more likely to report lower levels of academic persistence and curiosity over time. These findings suggest that these girls may be at-risk socio-emotionally and academically. Future research should consider a mixed-methods approach to understand these findings.

Limitations

While this study provides further understanding of the ways in which the school climate and racial identity beliefs of African American girls relate to their academic outcomes, there are a few limitations worth noting. For example, while adolescents’ racial

attitudes and perceptions of school climate may lead to more positive academic outcomes as posited here, adolescents who are doing well in school may engender support from teachers and peers, creating a feedback loop by which adolescents' achievement leads to positive feedback in the environment, which then promotes positive feelings about both school climate and racial identity. Thus, future research should use lagged effects to explore directionality further.

Additionally, while our study is one of few to examine the associations between racial ideologies and academic outcomes with an adolescent sample, future studies should also explore the ways in which humanist and assimilationist ideologies relate to academic motivation beliefs and academic achievement. These are the other ideologies considered within the Multidimensional Model of Racial Identity along with the minority and nationalist ideologies examined within this study. Studies have shown that assimilationist ideology has a negative association with GPA among Black college students and lower academic persistence among Black adolescents (Sellers et al., 1998; Smalls et al., 2007), and other research has shown a positive relationship between humanist ideology and academic outcomes (Nasim et al., 2005). Thus, more work is needed to explore the humanist and assimilationist ideologies in order to have a more complete understanding of how the various aspects of the MMRI affect African American girls' achievement motivation beliefs. Additionally future research should also consider public regard as societal views could impact the way persons of color define themselves. Despite the results of this study regarding internal assets based on racial salience, racial pride, attitudes and beliefs about being an African American girl, for girls of color, societal perceptions about their racial and gender status may have a detrimental impact on various developmental competencies.

Another important limitation to note is the low reliabilities of the MIBI-Teen Scale (see Ponterotto & Ruckdeschel, 2007). The low reliabilities for these scales decrease the power of the analyses and increases the chance of underestimating the true relationships between racial identity and achievement motivation beliefs. However, despite the low reliabilities found in the development of the MIBI-teen scale, the items were internally consistent with items from the longer scales (Scottham et al., 2008). Thus, despite the low reliabilities, there is support for the construct validity of this scale. Future studies can be designed with stronger measures to further understand the role of racial identity beliefs and achievement motivation beliefs.

Additionally, a person-centered approach may provide further understanding of how combinations of racial identity attitudes work together to predict academic outcomes. While

it is important to understand how racial identity attitudes individually relate to academic outcomes, future research should further explore how the combination of individuals' racial identity attitudes relates to achievement motivational beliefs. For example, adolescents who are high in both nationalism *and* minority ideology may have better outcomes than adolescents who are high in nationalism, but low in other ideologies. Additionally, private regard may have a more prominent association with academic outcomes for adolescents who feel race is more central to their self-concept, compared to adolescents who feel race is less central. Thus, more research is needed to understand the dynamic nature of racial identity and its effect on achievement motivational beliefs.

While our study focused on school climate as an important factor in encouraging academic motivation, more research is needed in order to understand the factors that may contribute to school climate, including racial demographics of the students, teachers, and staff in schools. That said, in our study we did not directly measure the racial and ethnic composition of each of the schools and the opportunities for interracial contact. Future research should consider the frequency and opportunities for interracial contact within the school setting. While such an exploration is beyond the scope of the current study, given that the students in our study were from many schools within three districts with large variation in their racial demographics, future work should explore ways to encourage positive school climate, as it plays an important role in encouraging academic motivation in African American girls.

Finally, while this study sought to understand the achievement motivation of African American girls from an intersectional lens, we focused specifically on their racial identity and not their gender identity. Future studies should seek to understand how racial *and* gender identity attitudes intersect to influence Black girls' academic outcomes as the social construction of gender is particularly important. Thus, while our focus was on racial ideology, it's important to explore the gendered socialization of African American girls. For example, negative stereotypes about women and girls in STEM fields, and the related consequences such as stereotype threat (Spencer, Steele, & Quinn, 1999), may negatively influence academic curiosity or persistence, especially in STEM related courses. Additionally, specific stereotypes about Black women may lead teachers to see them as more disruptive or loud (Fordham, 1993; Morris, 2007), which may lower perceptions of teacher support in the classroom. Thus, more intersectional work is needed to fully understand the academic experiences, risks, and strengths of Black girls.

Conclusions

In conclusion, while many recent studies have focused on the academic plight of African American boys, this study demonstrates that race matters for African American girls, too. As mentioned, African American girls are also at potential risk for being perceived as more disruptive and disrespectful in the classroom context (Brown, 2010; Froyum, 2010; Lei, 2003; Morris, 2007) and thus, more research is needed to explicate factors that promote academic motivation and achievement in African American girls.

In our study, we found that racial identity and positive perceptions of school climate both directly relate to more positive achievement motivation beliefs. Additionally, we demonstrated that racial identity attitudes act as a protective factor amidst a hostile or negative school climate, consistent with previous research (Chavous et al., 2008; Dotterer et al., 2009; Sellers et al., 1998; Smalls et al., 2007; Thomas, Caldwell, Faison, & Jackson, 2009). This study furthers our understanding of the strengths that African American girls bring to their academic experiences and, specifically, the ways in which their racial identity beliefs act an asset rather than a risk factor. We look forward to future research that takes an intersectional approach to improving the academic success of African American girls.

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Table 1
Mean and Standard Deviations for Selected Variables

	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
	(Time 1)		(Time 2)		(Time 3)		(Time 4)	
School Racial Climate	3.68	(.80)	3.55	(.93)	3.60	(1.38)	3.42	(.89)
School Climate (TS)	3.28	(.87)	3.27	(.89)	3.27	(1.27)	3.25	(.92)
School Climate (RI)	3.47	(1.09)	3.53	(1.02)	3.66	(1.52)	3.78	(.89)
School Climate (SOB)	3.05	(1.03)	3.09	(1.16)	3.07	(1.60)	2.79	(1.06)
Racial Centrality	3.78	(.82)	3.85	(.83)	3.86	(1.34)	3.82	(.90)
Private Regard	4.33	(.81)	4.27	(.81)	4.08	(1.24)	4.12	(.74)
Minority Ideology	3.97	(.78)	4.00	(.74)	4.21	(1.18)	3.99	(.76)
Nationalist Ideology	2.83	(.95)	3.19	(1.02)	3.64	(1.71)	3.59	(.90)
Academic Curiosity	3.16	(.72)	3.10	(.77)	3.53	(1.30)	2.97	(.79)
Academic Persistence	3.18	(.63)	3.13	(.70)	3.19	(1.02)	3.02	(.62)

Note. School Climate (ST) = Supportive Teachers, School Climate (RI) = Racial Interactions, School Climate (SOB) = Sense of Belongingness.

Table 2

Fixed and Random Effects of School Climate, Racial Identity Beliefs, on Academic Persistence

	Coefficient (<i>SE</i>)	<i>t</i> Statistic	<i>p</i>
Fixed Effects			
Academic Persistence (intercept)	2.99 (.29)	10.52	***
School District			
Racially & Economically Diverse	.222 (.14)	1.50	
Predominately Black	.086 (.14)	.600	
Predominately White	-.085 (.14)	-.590	
Time	.030 (.02)	1.22	
Adolescent Age	-.038 (.01)	-2.97	**
Parent Education	-.001 (.01)	-.207	
Racial Centrality	-.015 (.02)	-.541	
Private Regard	.077 (.02)	2.68	**
Minority Ideology	.082 (.02)	2.89	**
Nationalist Ideology	-.035 (.02)	-1.55	
School Racial Climate	.207 (.03)	6.72	***
Time x Racial Centrality	-.004 (.02)	-.180	
Time x Private Regard	-.034 (.03)	-1.07	
Time x Minority Ideology	.028 (.02)	1.00	
Time x Nationalist Ideology	-.021 (.02)	-.955	
Time x School Racial Climate	-.010 (.03)	-.338	
Racial Centrality x School Racial Climate	-.019 (.04)	-.479	

PROMOTING RESILIENCE

Private Regard x School Racial Climate	.043 (.04)	.978
Minority Ideology x School Racial Climate	-.040 (.04)	-.981
Nationalist Ideology x School Racial Climate	.007 (.03)	.252
Time x Centrality x School Racial Climate	.031 (.03)	.914
Time x Private Regard x School Racial Climate	-.041 (.04)	-.854
Time x Minority Ideology x School Racial Climate	.075 (.04)	1.83
Time x Nationality Ideology x School Racial Climate	-.015 (.03)	-.483

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Reference group for school district are students that transferred to another school district during the study.

ST=Supportive teachers. RI=Racial interactions. SOB=Sense of Belongingness.

Table 2 (continued)

Fixed and Random Effects of School Climate, Racial Identity Beliefs, on Academic Persistence

	Coefficient (SE)	t Statistic	p
School Climate (ST)	.018 (.02)	.649	
Time x School Climate (ST)	.070 (.02)	2.35	*
Racial Centrality x School Climate (ST)	-.008 (.03)	-.206	
Private Regard x School Climate (ST)	.001 (.03)	.004	
Minority Ideology x School Climate (ST)	.001 (.03)	.027	
Nationality Ideology x School Climate (ST)	.029 (.03)	.931	
Time x Centrality x School Climate (ST)	.039 (.03)	1.00	
Time x Private Regard x School Climate (ST)	.034 (.04)	.837	
Time x Minority Ideology x School Climate (ST)	-.041 (.03)	-1.05	
Time x Nationalist Ideology x School Climate (ST)	-.041 (.03)	-1.30	
School Climate (RI)	-.030 (.02)	-1.38	
Time x School Climate (RI)	.001 (.02)	.040	
Racial Centrality x School Climate (RI)	-.013 (.03)	-.440	
Private Regard x School Climate (RI)	-.053 (.032)	-1.67	
Minority Ideology x School Climate (RI)	.044 (.03)	1.41	
Nationality Ideology x School Climate (RI)	-.024 (.02)	-1.04	
Time x Centrality x School Climate (RI)	-.048 (.03)	-1.45	
Time x Private Regard x School Climate (RI)	.099 (.03)	2.66	**
Time x Minority Ideology x School Climate (RI)	-.061 (.03)	-1.70	
Time x Nationalist Ideology x School Climate (RI)	.040 (.02)	1.47	
School Climate (SOB)	.112 (.02)	4.82	***
Time x School Climate (SOB)	-.055 (.02)	-2.23	*
Racial Centrality x School Climate (SOB)	-.007 (.03)	-.246	
Private Regard x School Climate (SOB)	.050 (.03)	1.48	
Minority Ideology x School Climate (SOB)	-.017 (.03)	-.579	
Nationality Ideology x School Climate (SOB)	.001 (.02)	.052	
Time x Centrality x School Climate (SOB)	-.001 (.02)	-.054	
Time x Private Regard x School Climate (SOB)	-.077 (.02)	-2.63	**
Time x Minority Ideology x School Climate (SOB)	-.010 (.02)	-.363	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Reference group for school district are students that transferred to another school district during the study.

ST=Supportive teachers. RI=Racial interactions. SOB=Sense of Belongingness.

Table 3

Fixed and Random Effects of School Climate, Racial Identity Beliefs, on Academic Curiosity

	Coefficient (SE)	t Statistic	p
Fixed Effects			
Academic Curiosity (intercept)	3.42 (.32)	10.69	***
School District			
Racially & Economically Diverse	-.094 (.16)	-.588	
Predominately Black	-.127 (.15)	-.813	
Predominately White	-.181 (.15)	-1.13	
Time	.008 (.02)	.312	
Adolescent Age	-.021 (.01)	-1.52	
Parent Education	.002 (.01)	.344	
Racial Centrality	.040 (.03)	1.24	
Private Regard	.074 (.03)	2.22	*
Minority Ideology	.055 (.03)	1.70	
Nationalist Ideology	.068 (.02)	2.60	**
School Racial Climate	.176 (.03)	4.96	***
Time x Racial Centrality	.032 (.03)	1.07	
Time x Private Regard	-.099 (.03)	-2.76	**

PROMOTING RESILIENCE

Time x Minority Ideology	.001 (.03)	.044
Time x Nationalist Ideology	-.009 (.02)	-.372
Time x School Racial Climate	-.029 (.03)	-.841
Racial Centrality x School Racial Climate	-.007 (.04)	-.158
Private Regard x School Racial Climate	-.019 (.05)	-.379
Minority Ideology x School Racial Climate	-.036 (.04)	-.754
Nationalist Ideology x School Racial Climate	-.002 (.03)	-.072
Time x Centrality x School Racial Climate	.064 (.03)	1.64
Time x Private Regard x School Racial Climate	-.072 (.05)	-1.34
Time x Minority Ideology x School Racial Climate	.010 (.04)	.230
Time x Nationality Ideology x School Racial Climate	.012 (.03)	.359

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Reference group for school district are students that transferred to another school district during the study. ST=Supportive teachers. RI=Racial interactions. SOB=Sense of Belongingness.

Table 3 (continued)

Fixed and Random Effects of School Climate, Racial Identity Beliefs, on Academic Curiosity

	Coefficient (<i>SE</i>)	<i>t</i> Statistic	<i>p</i>
School Climate (ST)	.075 (.03)	2.25	*
Time x School Climate (ST)	.093 (.03)	2.79	**
Racial Centrality x School Climate (ST)	-.048 (.04)	-1.06	
Private Regard x School Climate (ST)	-.082 (.04)	-1.80	
Minority Ideology x School Climate (ST)	-.096 (.04)	-2.19	*
Nationality Ideology x School Climate (ST)	.004 (.03)	.114	
Time x Centrality x School Climate (ST)	.004 (.04)	.101	

PROMOTING RESILIENCE

Time x Private Regard x School Climate (ST)	.083 (.04)	1.83	
Time x Minority Ideology x School Climate (ST)	.039 (.04)	.878	
Time x Nationalist Ideology x School Climate (ST)	-.078 (.03)	-2.18	*
School Climate (RI)	.070 (.02)	2.77	**
Time x School Climate (RI)	-.012 (.02)	-.452	
Racial Centrality x School Climate (RI)	.028 (.03)	.788	
Private Regard x School Climate (RI)	.016 (.03)	.444	
Minority Ideology x School Climate (RI)	-.014 (.03)	-.405	
Nationality Ideology x School Climate (RI)	.008 (.02)	.298	
Time x Centrality x School Climate (RI)	-.088 (.03)	-2.34	*
Time x Private Regard x School Climate (RI)	.002 (.04)	.051	
Time x Minority Ideology x School Climate (RI)	.004 (.04)	.116	
Time x Nationalist Ideology x School Climate (RI)	.033 (.03)	1.09	
School Climate (SOB)	.104 (.02)	3.89	***
Time x School Climate (SOB)	-.005 (.02)	-.187	
Racial Centrality x School Climate (SOB)	-.013 (.03)	-.390	
Private Regard x School Climate (SOB)	.105 (.03)	2.68	**
Minority Ideology x School Climate (SOB)	.067 (.03)	1.88	
Nationality Ideology x School Climate (SOB)	-.007 (.02)	-.256	
Time x Centrality x School Climate (SOB)	-.005 (.02)	-.200	
Time x Private Regard x School Climate (SOB)	-.010 (.03)	-.320	
Time x Minority Ideology x School Climate (SOB)	-.037 (.03)	-1.12	
Time x Nationalist Ideology x School Climate (SOB)	-.017 (.02)	-.598	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Reference group for school district are students that transferred to another school district during the study.

ST=Supportive teachers. RI=Racial interactions. SOB=Sense of Belongingness.

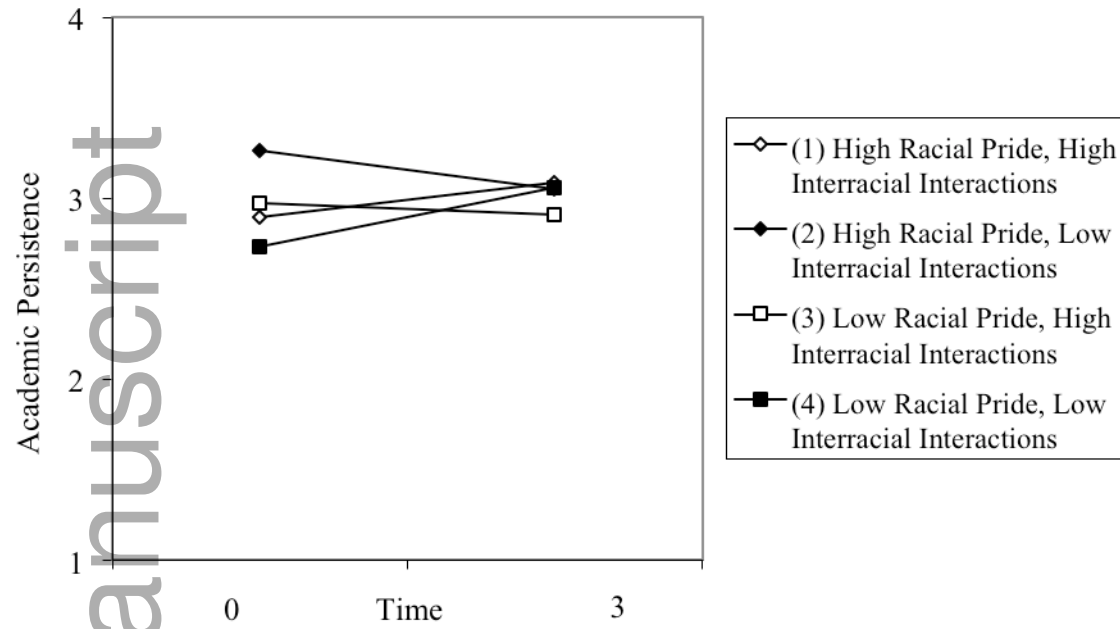


Figure 1. Academic persistence as a function of time, private regard (racial pride), school climate (interracial interactions).

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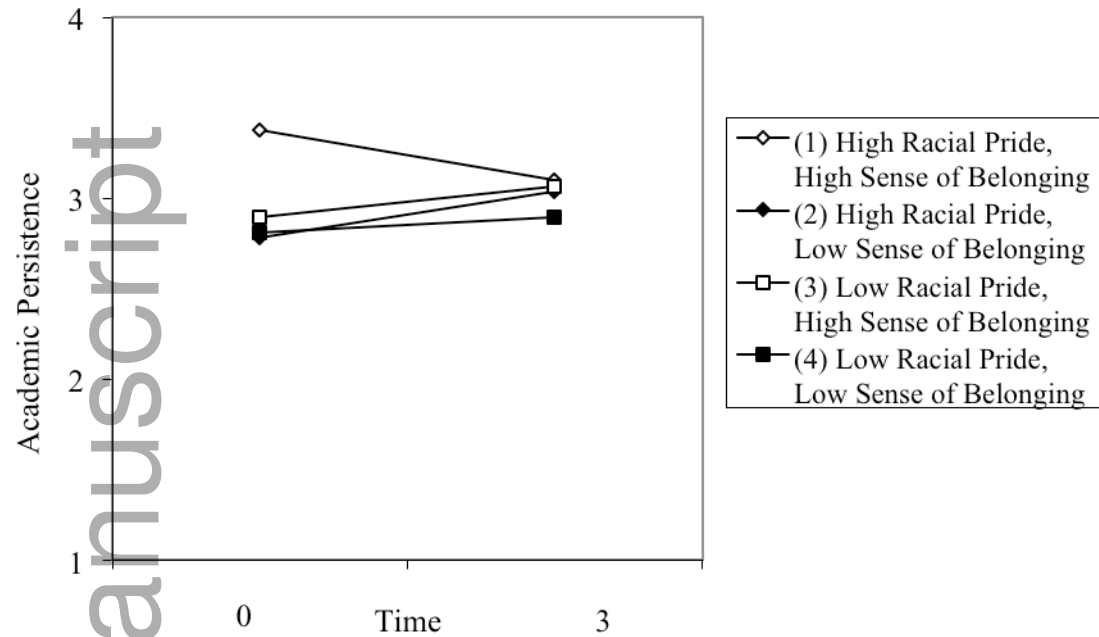


Figure 2. Academic persistence as a function of time, private regard (racial pride), and school climate (sense of belonging).

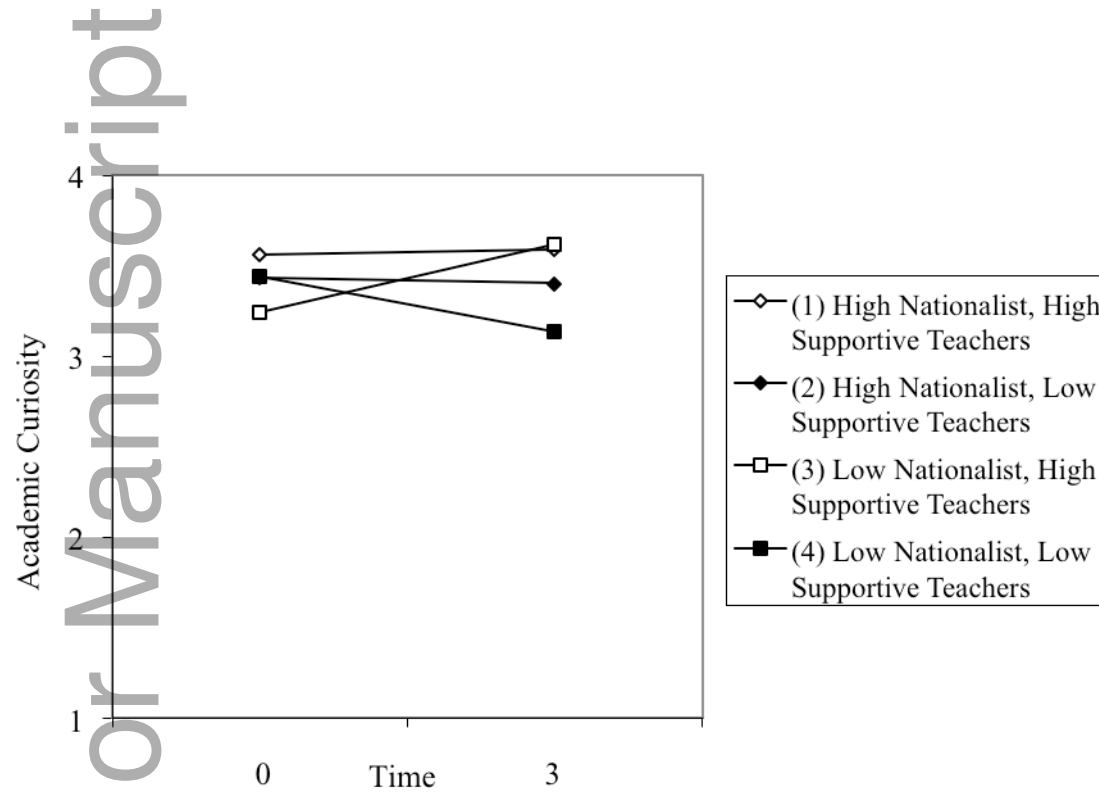


Figure 3. Academic curiosity as a function of time, nationalist ideology, and school climate (supportive teachers).

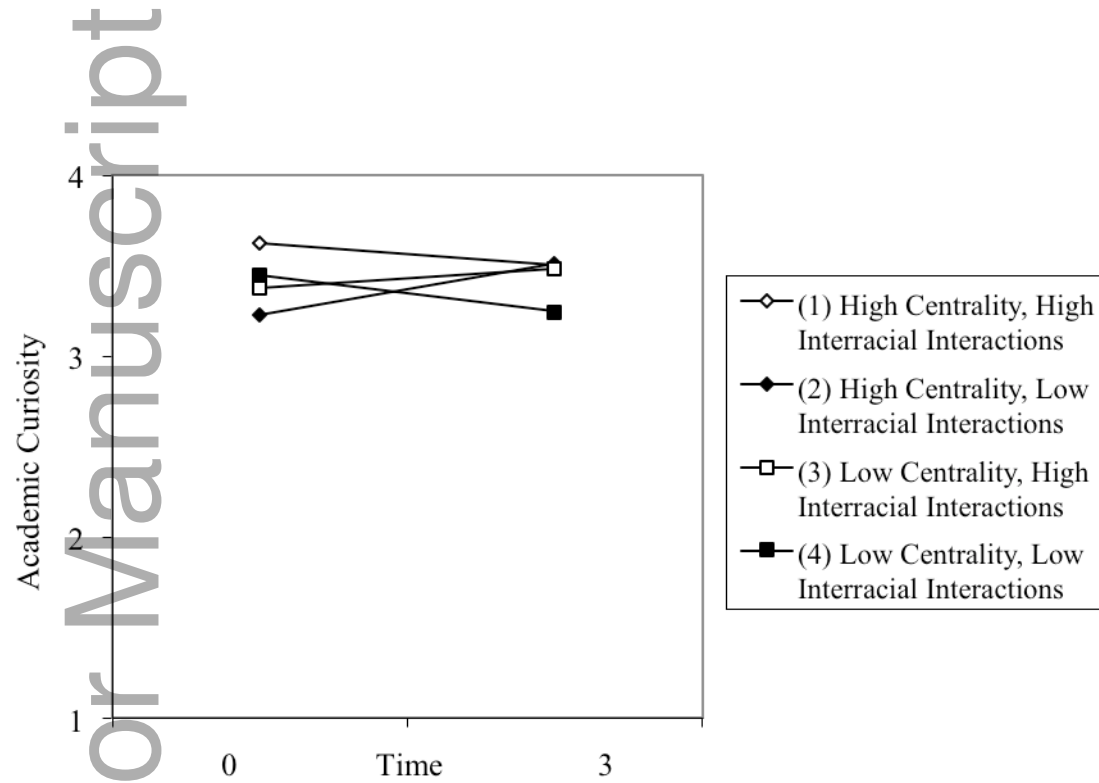


Figure 4. Academic curiosity as a function of time, racial centrality, and school climate (interracial interactions).

Table 4

Slope Difference Test

Variables	Pair of Slopes	t-value for slope difference	p-value for slope difference
Academic Persistence			
Time x Private Regard x Interracial Interactions	(1) and (2)	-2.150	.032*
	(1) and (3)	-1.291	.197
	(1) and (4)	.494	.622
	(2) and (3)	1.102	.271
	(2) and (4)	2.26	.024*
	(3) and (4)	1.632	.103
Time x Private Regard x Sense of Belonging	(1) and (2)	-3.184	.002**
	(1) and (3)	-2.653	.008
	(1) and (4)	-2.387	.017*
	(2) and (3)	0.482	.630
	(2) and (4)	0.948	.343
	(3) and (4)	0.621	.535
Academic Curiosity			
Time x Nationalist x Supportive Teachers	(1) and (2)	.347	.729
	(1) and (3)	1.016	.310
	(1) and (4)	.0972	.332
	(2) and (3)	-1.194	.233
	(2) and (4)	.789	.430
	(3) and (4)	3.129	.002**
Time x Centrality x Interracial Interactions	(1) and (2)	-2.150	.032*
	(1) and (3)	-1.291	.197

(1) and (4)	0.494	.622
(2) and (3)	1.102	.271
(2) and (4)	2.26	.024*
(3) and (4)	1.632	.103

Note. * $p < .05$, ** $p < .010$.