

Racial Identity Development: Academic Correlates of Change among African American
Adolescents

by

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Date: August 12, 2010

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Thesis submitted in partial fulfillment of
the requirements for the degree of Master of Arts in the Department of
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ABSTRACT

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Abstract

This study examined changes in African American adolescents' racial identity content (e.g., connectedness, awareness of racism, and embedded achievement) and academic adjustment (e.g., Academic and disciplinary adjustment, perceptions of school and teachers, and relationship with school peers) between early and late adolescence. Data analyzed were from a subsample of youth (N = 514) who participated in the multi-site Fast Track Project designed to prevent problem behaviors (e.g., disruptive, aggressive, and antisocial behavior). Results from latent growth curve models suggest that connectedness and embedded achievement remain stable across adolescence. However, awareness of racism increases from early to late adolescence and this increase is linked to declining self reported relationships with school peers. These findings also indicate that the relationship between racial identity and academic adjustment is moderated by gender. For girls, awareness of racism predicted negative peer relationships in early adolescence, but not across the study years. For boys, increasing awareness of racism predicted declines in peer relationships across adolescence. The present findings contribute to the understanding of adolescent racial identity content change.

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1. Introduction

1.1 Statement of the Problem

During adolescence individuals begin to reconsider and challenge adult-imposed identities. Consequently, youth must establish for themselves a sense of identity, thereby dealing with a key task of adolescence (Erikson, 1968). While this process continues into adulthood, increased independence and cognitive maturity experienced during adolescence is thought to facilitate identity exploration and formation (French, Seidman, Allen, & Aber, 2006). These identities are complex, multifaceted, and may encompass religious, sexual, and vocational identities (Tatum, 1997). Additionally, identities are shaped by one's interaction and interpretations of the social environment (Spencer, 2006). The phenomenological variant of ecological systems theory (PVEST) model frames development with the interaction between identity and context (Spencer, Fegley, & Harpalani, 2003). Specifically, this framework incorporates meaning-making processes as contributing factors to human development. This perspective also considers differences in perception, experience, and responses to events and contexts as contributors to developmental outcomes (Spencer, 2006).

Beyond more general identity development, youth of color also face the task of establishing an identity related to race (Phinney, 1989). Given the structure of the current educational system in the United States, adolescents spend a large proportion of their

time in academic settings surrounded by their peers and teachers. These academic settings are not devoid of interracial and race-related experiences. The PVEST model offers a formulation that accounts for the unique experiences African American youth face in academic contexts and how they are shaped by racial identity. This model of development also provides flexibility to consider the implications of person-level factors beyond race such as gender and age. This framework posits that racial identity develops as part of a system of stable coping strategies employed across development. This identity-centered framework underscores the importance of establishing a healthy sense of racial identity for improved adjustment across all domains. Therefore, it is important to know whether African American adolescents develop positive racial identities in the context of school in light of pervasive negative stereotypes. Using this perspective, it is posited that racial identity can be a predictor of academic adjustment for African American youth. In the present study, the longitudinal relationships among racial identity and academic adjustment were examined. In particular, the present study explored whether change in racial identity content (e.g., connectedness, embedded achievement, and awareness of racism) across adolescence is related to perceptions of academic performance and environment. Additionally, PVEST argues that identity construction is determined by context and phenomenological experiences of individual characteristics, such as race and gender (Spencer, Dupree, & Hartmann, 1997).

Therefore, this study tested the moderating role of gender on the relationship between racial identity and academic adjustment.

Racial identity specifically encompasses personal attitudes about one's own race and the meaning of racial group membership in the context of broader society (Sellers, Smith, Shelton, Rowley, & Chavous, 1998). Studies on the importance of racial identity show that racial identity is an important correlate of African American mental health and academic outcomes throughout development (Caldwell, Kohn-Wood, Schmeelk-Cone, Chavous, & Zimmerman, 2004; Mandara, Gaylord-Harden, Richards, & Ragsdale, 2009; Sellers, Copeland-Linder, Martin, & Lewis, 2006). Additionally, empirical and theoretical work implies that personal characteristics such as gender may be related to racial identity and adjustment (Benner, & Graham, 2009; Chavous, Rivas-Drake, Smalls, Griffin, & Cogburn, 2008). However, longitudinal studies are needed to examine the influence of gender upon the relationship between racial identity and academic adjustment longitudinally.

1.2 Review of Empirical Literature

1.2.1 Racial Identity: Process versus Content

There is a distinction between two approaches commonly used to study racial identity. The first approach is process oriented and involves describing the process through which individuals explore and establish an understanding of the meaning of

race (Phinney, 1990). The second is concerned with the values and beliefs held by an individual at a particular point in time (Phinney, 1990). Racial identity content is a multifaceted construct that has been operationalized in numerous ways by different scholars in the field (Arce, 1981; Helms, 1990; Phinney, 1992; Sellers, Morgan & Brown, 2001). The dimensions of racial identity content most consistently represented throughout the literature include a sense of racial pride, a sense of racial group membership, and the endorsement of certain values and beliefs (Phinney & Ong, 2007; Sellers, Smith, Shelton, Rowley, & Chavous, 1998).

The present study relies upon the tripartite conception of racial identity content proposed by Oyserman, Gant, and Ager (1995). The tripartite model posits that there are three dimensions of racial identity content: awareness of racism, connectedness, and embedded achievement. *Awareness of racism* is a reflection of the perceived prevalence of racial discrimination faced by one's group (Oyserman, Gant, & Ager, 1995). *Connectedness* encompasses both a sense of pride in one's racial heritage and belonging to other racial group members (Oyserman, Gant, & Ager, 1995). In this way, it is similar to the affirmation and belonging component assessed by the Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992). The third component of racial identity content described by this model, *embedded achievement*, is defined as a sense that academic success is valued by members of one's racial group (Oyserman, Gant, & Ager, 1995).

Including embedded achievement makes the tripartite model a unique formulation of racial identity content. Additionally, this distinction allows for the examination of a component of racial identity opposing negative racial stereotypes about African American academic abilities. Thus, the present study is uniquely structured to examine change across three domains of racial identity content (connectedness, embedded achievement, and awareness of racism) and subsequent academic correlates of change for male and female African American adolescents.

1.2.2 Racial Identity Change

Adolescence is a period marked by great change in racial identity (Phinney, 1989). Youth progress through stages of racial identity as they explore the meaning of their race and adjust their world views accordingly (Cross, 1991). Subsequent interpretations may guide beliefs about one's racial group members. Furthermore, a novel integration of the meaning of race into one's personal-schema may contribute to how African American adolescents view themselves (Cokley, & Chapman, 2008).

Many of the studies examining change in racial identity during adolescence primarily focus upon progression through developmental stages (e.g., Plummer, 1996; Tse, 1999). These studies are specifically concerned with the process of racial identity exploration. For instance, a qualitative study with 64 tenth-graders supported a three-stage model of racial identity (Phinney, 1989). Adolescents in this study were

categorized as not having explored race (diffused-foreclosed), having some exploration and an unclear meaning of one's race (moratorium), or having a secure understanding of one's race as a result of exploration (achieved; Phinney, 1989). A later cross-sectional study of late adolescence, found that exploration is positively associated with age, but not with behaviors and affective racial identity components (e.g., affirmation and belonging; Phinney, 1992). This cross-sectional evidence supports the use of stage models to describe racial identity development. This evidence suggests that older youth have a clearer and more stable understanding of racial group membership (Phinney, 1992). These findings are helpful for understanding differences in racial identity exploration and formation across stages of development (e.g., early and late adolescence); however, these studies do not provide an understanding of developmental trajectories.

Although the majority of longitudinal studies examining racial identity have been conducted among college students, it has been suggested that racial identity exploration increases in adolescence (Smalls, White, Chavous, & Sellers, 2007). Indeed, there has been a recent movement to expand this longitudinal work to incorporate adolescence. Phinney and Chavira (1992) followed 18 Black, Asian American, and Hispanic adolescents over three years and discovered general patterns of progression toward achieved racial identity statuses. A few participants regressed toward a less

advanced status of racial identity; however, the authors suggested that these participants were initially misclassified or unable to handle the difficult nature of identity formation (Phinney, & Chavira, 1992). The pattern of regression found in their study (Phinney, & Chavira, 1992) is consistent with the concept of recycling in which an individual may move backward and forward through identity stages as a result of shifts in exploration following major life events (Cross, & Fhagen-Smith, 2001; Parham, 1989). However, contrary to evidence supporting recycling among adults (Scottham, Cooke, Sellers, & Ford, 2010), Phinney and Chavira (1992) did not consider regression as a part of the potential trajectories of racial identity development. However, a later study found evidence of Phinney's (1989) four status model of identity and oscillation of racial identity over the course of one year (Seaton, Sellers, & Scottham, 2006). African American youth aged 11 to 17 showed evidence of identity progression, regression, and constancy over two years (Seaton, Sellers, & Scottham, 2006). These findings suggest that racial identity exploration does not necessarily increase linearly in adolescence, but rather youth may reassess the meaning of race at different time points. In light of this evidence supporting regression and recycling, it is reasonable to expect subsequent changes in racial identity content (e.g., values, and beliefs).

Therefore, additional research has focused not only on the process through which race is examined and understood, but also the related beliefs and values (e.g.,

Cross, 1971). These studies examine racial identity development and affective components of content such as racial pride, in-group belonging, and an understanding of the social implications of group membership. One study suggests that racial identity achievement is associated with positive feelings of in-group belonging and affirmation in a diverse group of adolescents (Roberts et. al, 1999). Their findings highlight the relationship between developmental progression and content of racial identity (Roberts et. al, 1999). Another recent four-year longitudinal study also highlights the importance of exploring patterns of racial identity content change among adolescents (Kiang, Witkow, Baldelomar, & Fuligni, 2010). This study used the MEIM (Phinney, 1992), and found substantial longitudinal variation in racial identity exploration and belonging among Latino and Asian American high school students (Kiang, et al., 2010). These studies provide support that youth are exploring the meaning of race and reconsidering their values and beliefs. Considering evidence of increased identity exploration throughout adolescence and the linkages between exploration and endorsement of affective components of racial identity, it follows that youth should also report fluctuations in racial identity content over time.

Appropriately, scholars have begun to examine the extent and direction of racial identity content change, which may differ across dimensions (Seaton, Yip, & Sellers, 2009). Pahl and Way (2006) found that across middle and late adolescence affirmation is

stable, and exploration increases in early adolescents, but begins declining beyond 10th grade. Less research has examined content change across adolescence using frameworks and measures specifically concerned with content (e.g., MMRI; Sellers, Smith, Shelton, Rowley, & Chavous, 1998). A contemporary study by Seaton and colleagues (2009) has been successful in doing so by incorporating the Multidimensional Inventory of Black Identity-Teen (MIBI-T; Scottham, Sellers, & Nguyễn, 2008) based on the MMRI (Sellers, Smith, Shelton, Rowley, & Chavous, 1998). Researchers followed a sample of African Americans over three years and found stability in private regard (i.e., an individual's affective valuation of their racial group) and declines in public regard (i.e., assessment of out group members' valuation of one's racial group) across middle and late adolescence (Seaton, Yip, & Sellers, 2009). These studies provide evidence that African American youth may report fluctuations in endorsement of racial attitudes, values and beliefs throughout adolescence.

1.2.3 Academic Correlates of Racial Identity

African American youth must contend with pernicious racial stereotypes that place them at a critical impasse (Burchinal, Roberts, Zeisel, & Rowley, 2008; Steele, 1997). However, racial identity may buffer youth of color from the damaging academic implications of stereotypes (Wong, Eccles, & Sameroff, 2003), insufficient neighborhood resources (Corneille, & Belgrave, 2007; Chavous, Rivas, Green, & Helaire, 2002; Ong,

Phinney, & Dennis, 2006), and perceived discrimination (Taylor, Casten, Flickinger, Roberts, & Fulmore, 1994; Thomas, Caldwell, Faison, & Jackson, 2009). Accordingly, racial identity content and academic achievement has been linked in the literature for youth of color (Fuligni, Witkow, & Garcia, 2005) and specifically for African American youth (Byrd, & Chavous, 2009; Chavous, Rivas-Drake, Smalls, Griffin, & Cogburn, 2008; Harper, & Tuckman, 2006). For example, Byrd and Chavous (2009) found that for youth living in neighborhoods with low economic opportunities (e.g., few adult role models, poverty, and low adult monitoring), racial pride cross-sectionally predicted higher grade point averages (GPAs) among African American eighth graders. Interestingly, they also reported that racial group connection negatively predicts school utility values (i.e., perceived importance of school on future success), but marginally predicted higher GPA (Byrd, & Chavous, 2009).

Furthermore, scholars have begun to examine academic correlates of racial identity over time. For example, in a 2006 study, low-income African Americans' GPA was positively predicted by higher levels of awareness of racism when accompanied by high embedded achievement and connectedness in the fall of eighth grade (Altschul, Oyerman, & Bybee). However, the pattern did not hold over time; change in racial identity did not predict change in GPA (Altschul, Oyerman, & Bybee, 2006). Using a cluster analytic approach, Harper and Tuckman (2006) found that African American

youth characterized as having low levels of centrality (i.e., how important it is to define oneself in terms of race), public regard and private regard had higher GPAs than youth high on these three dimensions of racial identity. These studies underscore the important relationship between racial identity and academic outcomes.

1.2.4 Racial Identity, Academic Adjustment, and Gender

Based on theoretical conceptions underlying this study (Phenomenological Variant of Ecological Systems Theory; PVEST), it is suggested that youths' identity development is shaped by not only race but also gender (Spencer, Dupree, & Hartmann, 1997). In fact, there is evidence that adolescents' academic values, achievement, and experiences are influenced by gender (Berndt, & Miller, 1990; Hudley, & Graham, 2001). For example, a recent study found that girls liked school more and had stronger feelings of belonging than boys (Benner, & Graham, 2009). Interestingly, they also found that girls had higher levels of loneliness and greater declines in GPAs than boys, suggesting that girls may be especially sensitive to certain academic risks during adolescence (Benner, & Graham, 2009). Qualitative evidence indicates that African American youth internalize different messages in regarding what it means to be "Black boys" versus "Black girls," highlighting the unique interaction of race, gender, and what it means to be African American (Isom, 2007). African American youth reported markedly more negative views of black girls and black boys than girls and boys in general. So it is

plausible that male and female African American youth experience their environments differently as a function of gender socialization and gender stereotypes (Davis, 2006; Graham, 2004; Coard, Wallace, Stevenson, & Brotman, 2004). In fact, the literature suggests that African American males are seen in a particularly negative way compared to other youth (Chavous, Harris, Rivas, Helaire, & Green, 2004). These gender differences point to the need to understand how gender might influence the pathways between racial identity and academic outcomes.

Researchers have recently begun to examine cross-sectional gender differences in the academic implications of racial identity. Among a sample of 8th and 11th grade African Americans, gender moderated the relationship between racial identity and academic outcomes (Chavous, Rivas-Drake, Smalls, Griffin, & Cogburn, 2008). They found that racial centrality (i.e., how important it is to define oneself in terms of race) predicted increased school importance and academic self-concept for boys, but not for girls (Chavous, Rivas-Drake, Smalls, Griffin, & Cogburn, 2008). Additional evidence suggests that the mechanism through which racial identity influences academic adjustment is not driven by gender differences in academic achievement of African American youth (Oyserman, Harrison, & Bybee, 2001). Among a sample of African American youth, connectedness was related to higher GPA for boys and embedded achievement was related to higher GPA for girls during the fall of eighth grade

(Oyserman, Harrison, & Bybee, 2001). Additionally, among girls, fall embedded achievement was related to GPA in the spring (Oyserman, Harrison, & Bybee, 2001).

The evidence supporting a longitudinal moderation effect of gender across adolescence is mixed. In a low-income sample of urban African American youth, embedded achievement predicted academic improvements among girls and connectedness predicted improvements for boys (Oyserman, Bybee, & Terry, 2003). However, in a later study among a low-income, middle adolescent sample, gender did not moderate the relationship between racial identity and academic outcomes (Altschul, Oyserman, & Bybee, 2006). Interestingly, their findings also indicated that youth high in awareness of racism attain better grades over time if they also have high levels of connectedness (Altschul, Oyserman, & Bybee, 2006). Given these contradictory findings in the literature, more research is needed to determine if gender does in fact moderate the relationship between racial identity and academic adjustment consistently over time.

1.2.5 Current Study

1.2.5.1 Purpose

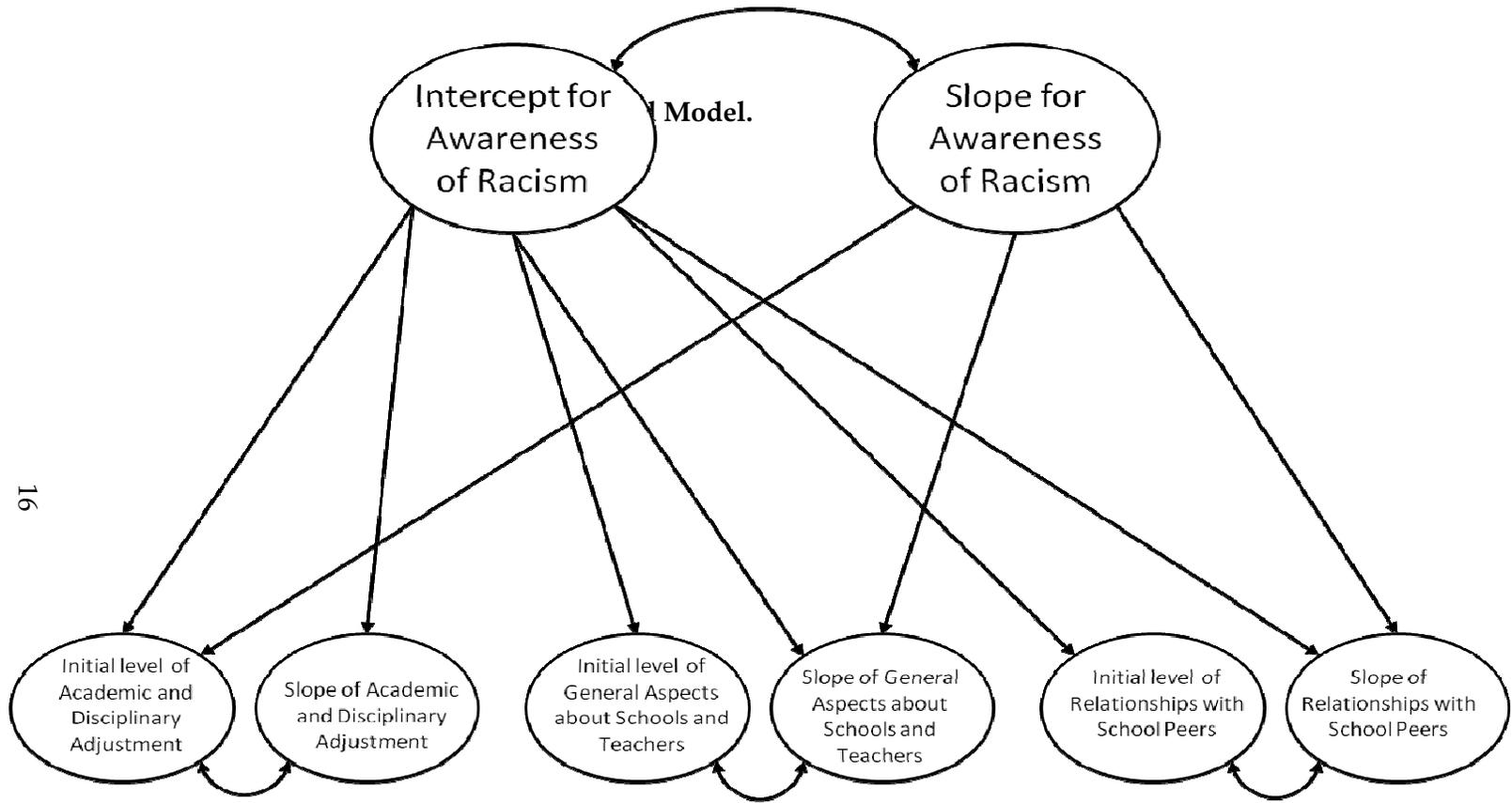
The purpose of the current study is to explore relationships among change in racial identity content and academic adjustment over time among a sample of African American adolescents. Three specific questions will be addressed. First, do adolescents report changes in their awareness of racism, connectedness, and embedded achievement

from early to late adolescence? Second, does racial identity predict academic adjustment across adolescence? Third, does gender moderate the relationship between racial identity and academic adjustment outcomes among African American adolescents? A structural equation (SEM) approach to latent growth curve modeling (LGC; Bollen, & Curran, 2006) was used to examine growth, longitudinal relationships, and moderation among the study variables. Connectedness, embedded achievement, and awareness of racism are predicted to increase over time (Seaton, Scottham, & Sellers, 2006; Seaton, Yip, & Sellers, 2009). It is also hypothesized that awareness of racism, connectedness and embedded achievement will predict academic adjustment over time (Altschul, Oyserman, & Bybee, 2006). Specifically, awareness of racism is expected to negatively predict academic and disciplinary adjustment, perceptions about school and teachers, and relationships with other students (Burchinal, Roberts, Zeisel, & Rowley, 2008; Steele, 1997). However, it is expected that a higher sense of racial group belonging and higher sense of embedded achievement will longitudinally predict better academic and disciplinary adjustment, perceptions about school and teachers, and relationships with other students (Byrd, & Chavous, 2009). It is also predicted that the relationships between racial identity and academic outcomes will be moderated by gender (Chavous, Rivas-Drake, Smalls, Griffin, & Cogburn, 2008; Oyserman, Harrison, & Bybee, 2001). Specifically, racial group belonging is expected to be a stronger predictor of positive

academic outcomes among boys and embedded achievement will be a stronger predictor of positive academic outcomes among girls over time (Oyserman, Bybee, & Terry, 2003).

1.2.5.2 Models tested

Figure 1 depicts the hypothetical model describing the relationship between racial identity and academic adjustment across early to late adolescence. This model tested the ways in which early adolescent racial identity (initial level of racial identity) is related to academic adjustment in early adolescence (initial level of academic adjustment) as well as changes in academic adjustment (slope for academic adjustment) throughout adolescence. This model also examined the ways in which change in racial identity content (slope for racial identity) predicted change in academic adjustment (slope for academic adjustment). Additionally, this model was used in a two-group analysis to test for gender moderation of this relationship.



2. Method

2.1 *Fast Track Sampling Procedures*

The Fast Track Project¹ is a 10-year, multi-site, randomized controlled trial to prevent the development of antisocial behavior in three successive cohorts of children identified as high risk upon entrance to first grade in 1991, 1992, and 1993 (see CPPRG, 1992; McMahon, Greenberg, and The Conduct Problems Prevention Research Group [CPPRG], 1995). The sites selected for inclusion were Durham, North Carolina; Nashville, Tennessee; Seattle, Washington; and rural central Pennsylvania. Participants were recruited for the Fast Track project from multiple schools within each site selected as high risk based on crime and poverty statistics of the neighborhoods that they served. Schools were randomly assigned to intervention and control conditions after being matched for demographics (size, percentage free or reduced lunch, ethnic composition). Using a screening procedure that combined teacher and parent ratings of disruptive behavior (Lochman & CPPRG, 1995), all 9,594 kindergarteners across three cohorts

¹ Members of the Conduct Problems Prevention Research Group, in alphabetical order, include Karen L. Bierman, Pennsylvania State University; John D. Coie, Duke University; Kenneth A. Dodge, Duke University; Mark T. Greenberg, Pennsylvania State University; John E. Lochman, University of Alabama; Robert J. McMahon, University of Washington; and Ellen E. Pinderhughes, Tufts University. This work was supported by National Institute of Mental Health (NIMH) grants R18 MH48043, R18 MH50951, R18 MH50952, and R18 MH50953. The Center for Substance Abuse Prevention and the National Institute on Drug Abuse also have provided support for Fast Track through a memorandum of agreement with the NIMH. This work was also supported in part by Department of Education grant S184U30002 and NIMH grants K05MH00797 and K05MH01027.

(1991-93) in 54 schools were screened initially for classroom conduct problems by teachers. Children scoring in the top 40% within cohort and site were solicited for the next screening stage for home behavior problems by the parents, using items from the Child Behavior Checklist (Achenbach, 1991) and similar scales, and 91% agreed (N = 3,274). Thus, the high-risk sample consisted of 891 children with high rates of teacher and parent rated behavior problems. The non-high-risk sample (N = 387) consisted of children with levels of teacher rated problem behavior comparable to the typical range found in the population. Children from the high-risk group were randomly assigned to the intervention (N = 445) or control group. The intervention included academic tutoring, mentoring, support for positive peer-group involvement, home visiting and family problem-solving, and liaisons with school and community agencies. Thus, the Fast Track sample included 1278 children and their families recruited from schools serving high proportions of low-income and disadvantaged students. Participants were interviewed annually for 15 years from the time they were in kindergarten (study year 1) to 2 years after high school graduation (study year 15). Retention rates for the Fast Track study were low with participation rates at 80% in year 11. The current study only includes data collected in study years 8 through 13, when participants were adolescents.

2.2 Participants

The present study analyzed data from African American non-high risk and high-risk adolescents in the control group (N = 563). Youth in the intervention group were

excluded to rule out expected academic benefits of the intervention that could have confounded the present results. Forty-nine participants were excluded from analyses due to complete missing data on all variables across all years and therefore, subsequent analyses were conducted with data from the remaining 514 participants. Preliminary analyses revealed that participants with missing data did not statistically differ from the participants retained in the current sample on any of the demographic variables (e.g., income, gender, age). Also, youth in the high-risk control group did not differ from the non-high risk group. Thus, analyses presented here include the 514 African American adolescents who participated in the Fast Track study. Data analyzed for the present study were collected from 1997 to 2004 when participants were in grades 7 through 11. Participants lived in Durham, North Carolina (N = 256), Nashville, Tennessee (N = 157), and Seattle, Washington (N = 95), and rural central Pennsylvania (N = 6). The first year of data analyzed for this study was collected in 1997, when youth were early adolescents (M = 12.8 years). The majority of the sample was male (65%). The successive cohort study design resulted in participants in different cohort having data for different years and therefore, some data were missing by design. Cohort 1 participant data was collected in years 8 through 12 (N = 261). Data were collected for cohort 2 for years 9 through 13 (N = 145). Cohort 3 data were collected for years 10 to 14 (N = 121). Attrition rates were low, with high participation rates in the final year of inclusion (i.e. year 12 for cohort 1, year 13 for cohort 2, and year 14 for cohort 3) across all cohorts (M = 85%) of the

present study. Most (82%) of the target youths' primary caregivers were their biological mothers, of whom 39% had never been married, 28% were married, and 28% were separated or divorced at year 8. The rest were relatives (4%), foster or adoptive parents (3%), or other adults (11%). The caregivers' average age at year 8 was 37 years, ranging from 26 to 79 years. At year 1, the primaries caregivers' educational background ranged from 1 to 6 years (1%) 18 years or more (1%); the majority (67%) had completed at least 12 years of education. Caregivers' level of education remained stable across the study years. The median annual family income across all study years ranged from \$20,001 to \$25,000.

2.3 Procedures

Interviewers were hired and trained to collect the study data during summer home interviews each year. The racial composition of the interviewers matched the racial composition of the participants. Prior to beginning each interview, participants reviewed confidentiality and gave informed consent. At each year, parents and children were interviewed separately with laptop computers. Participants received monetary compensation for their participation each year. Additional monetary incentives were given to those who participated in three or more consecutive years. Data were collected in Durham, North Carolina; Nashville, Tennessee; Seattle, Washington; and rural central Pennsylvania using identical research procedures. All aspects of the study were

approved by the institutional review boards at Duke University, The Pennsylvania State University, University of Washington, and Vanderbilt University.

2.4 Research Design

The hypotheses for the current study were tested using data collected over seven years from three successive cohorts of Fast Track Project participants. A series of repeated measures ANOVAs confirmed there were no site or cohort main effects on any of the study variables before aggregating the data ($p > .05$). Therefore the present study models the development of racial identity and academic adjustment using a cohort-sequential design (Duncan, Duncan, & Strycker, 2006). Thus, some data is missing by design. Data were collected annually for seven years until participants in the third cohort had completed 11th grade. The first year of data analyzed (study year 8) was collected when participants in the first cohort were between seventh and eighth grade. The second year (study year 9) included cohort 1 participants between eighth and ninth grades and cohort 2 participants who were between seventh and eighth grade. Study years 10, 11, and 12 include data from all cohorts. Year 12 and 13 include data from cohorts 2 and 3. Year 14 includes cohort 3 participants. Using this data, enabled an examination of the hypotheses with data gathered from early to late adolescence.

2.5 Measures

2.5.1 Racial Identity

At each year of data collection, participants completed the 12-item revised version of the Racial-Ethnic Identity (REI; see Appendix) measure adapted for Fast Track (Oyserman, Brickman, & Rhodes, 2007). This measure was used to assess three correlated factors: Connectedness, Embedded Achievement, and Awareness of Racism. The factor structure and model fit of the REI have been confirmed and validated for use with African American adolescents (Oyserman, Brickman, & Rhodes, 2007). Participants responded on a 4-point scale (1 = *strongly disagree* and 4 = *strongly agree*) such that higher scores on each of the subscales represent strong endorsement of their respective constructs. The connectedness subscale assesses an individual's feelings of belonging and importance of racial group membership. Four items were used to assess connectedness, including "It is important to be a member of my racial group". The awareness of racism subscale measures an individual's sense of self as subject to prejudice, racism, and exclusion from opportunities by others not belonging to their racial group. The subscale consisted of 4 items, (e.g., "The way I look and speak influences others' expectations"). The embedded achievement scale measures the extent to which youth believe achievement is valued by African Americans. It consisted of four-items, including "If I am successful it will help my community". Cronbach's alpha coefficients are presented in Table 1.

2.5.2 School Adjustment

Each year adolescents completed an 18-item questionnaire created for the Fast Track project to evaluate children's perceptions of their current adjustment to school using three subscales: academic and disciplinary adjustment, general aspects about school and teachers, and relationships with other students. Previous confirmatory factor analysis (CFA) has confirmed the validity and factor structure reflecting three correlated components of academic adjustment in this sample (see Maumary-Gremaud, 2000). Responses were given on a 5-point Likert scale (1 = *Never True* and 5 = *Always True*). A sample item from the 7-item academic and disciplinary adjustment subscale includes "I had an easy time handling academic demands." This subscale assessed individual adjustment related to handling academic tasks and staying out of trouble. The second school adjustment subscale, general aspects about school and teachers, assessed adolescents' overall perceptions of teachers and school environments. A sample question from this 5-item subscale is "School was fun". Relationships with other students assessed how well adolescents got along with their peers from school. A sample item from the 6-item relationships with school peers scale includes "I got along with friends".

2.6 Analysis Plan

Analyses for this study assessed latent growth curve models with structural equation modeling using Mplus with maximum likelihood estimation and robust

standard errors (Muthén & Muthén, 1998-2006). The first step involved testing an unconditional growth model to estimate the intercepts and change trajectories in each of the factors. Models with trajectories freely estimated were compared with linear trajectories. The three racial identity factors were modeled simultaneously, followed by the simultaneous modeling of the three academic adjustment factors. The goal of this step was to determine if adolescents report developmental changes in their awareness of racism, connectedness, and embedded achievement from the seventh to the eleventh grades. The second step in the analysis consisted of combining the latent growth models of the constructs with significant slopes in first step to model correlated change. This second step was used to determine how racial identity predicts academic adjustment across adolescence. The final models reported in the results section were those that fit the data best. In the last step, a two-group analysis was conducted using gender as the grouping variable to test for differences in the relationship between racial identity and academic adjustment. This step addressed the third question; does gender moderate the relationship between racial identity and academic adjustment outcomes among African American adolescents?

Analyses are evaluated on the basis of the following fit indices: Chi-square (χ^2), Chi-square/ degrees of freedom ratio (χ^2/df), comparative fit index (CFI), Tucker-Lewis index (TLI), and root-mean-square error of approximation (RMSEA). Chi-square measures the probability of rejecting a false null hypothesis (Type I error), therefore this

test statistic should be relatively small and non-significant (e.g., $p > .05$; Bollen, & Curran, 2006, chapter 2). However with large samples, such as the one in the present study, chi-square is positively distorted (Bollen, & Curran, 2006, chapter 2) and large statistically significant chi-square values may still be acceptable (Jöreskog, 1969, 1971). When sample size is large, a comparison of the chi-square to the degrees of freedom (χ^2/df) provides a better description of model fit (Jöreskog, 1969). The χ^2/df ratio should be larger than one and less than 3 (Jöreskog, 1969). The literature suggests that a CFI equal to 1 indicates an ideal fit, and values less than 0.9 are unacceptable (Bollen, 1990). TLI values should be very close to 1, with values less than 0.9 indicating poor fit and those greater than 1.2 indicating the possibility of over-fitting the data or too many parameters (Tucker, & Lewis, 1973). Conventions in the literature suggest RMSEA values below 0.05 indicate a very good fit, values greater than 0.1 signify a poor fit, those in between 0.05 and 0.1 a moderate fit (Brown, & Cudeck, 1993; Steiger, 1989). Additionally, confidence intervals for the RMSEA are presented based on suggestions in the literature (MacCallum, & Austin, 2000).

3. Results

3.1 Descriptive Statistics

Table 1 presents the mean and standard deviations for the study variables.

Youth reported experiencing relatively high mean levels of connectedness and embedded achievement of the study years. Although levels of awareness of racism were slightly lower than that of embedded achievement and connectedness, youth still reported relatively high levels when considering the measures 4-point scale.

Additionally, levels of general aspects about school and teachers as well as academic and disciplinary adjustment were relatively high, considering the 5-point scale used to assess adjustment. Youth reported particularly high positive perceptions of their relationships with school peers.

Table 1: Means and Standard Deviations of the Study Variables.

	<u>Year 8</u>		<u>Year 9</u>		<u>Year 10</u>		<u>Year 11</u>		<u>Year 12</u>		<u>Year 13</u>		<u>Year 14</u>	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Connectedness α	3.93	0.67	3.88	0.68	3.90	0.65	3.83	0.74	3.81	0.76	3.89	0.76	3.88	0.71
		.62		.73		.74		.78		.79		.80		.68
Embedded Achievement α	4.02	0.72	3.97	0.72	3.93	0.72	3.91	0.70	3.94	0.70	3.91	0.70	4.02	0.71
		.67		.77		.71		.73		.73		.78		.80
Awareness of racism α	3.13	0.87	3.19	0.86	3.24	0.79	3.29	0.77	3.32	0.81	3.24	0.84	3.26	0.71
		.68		.72		.69		.70		.72		.72		.66
Academic and disciplinary adjustment α	3.35	0.68	3.38	0.66	3.34	0.66	3.50	0.65	3.49	0.57	3.52	0.58	3.75	0.61
		.66		.66		.67		.66		.64		.65		.66
General aspects about school and teachers α	3.86	0.79	3.81	0.75	3.70	0.75	3.52	0.83	3.44	0.80	3.40	0.72	3.46	0.80
		.71		.64		.72		.74		.81		.67		.73
Relationships with school peers α	4.47	0.45	4.48	0.43	4.48	0.47	4.51	0.44	4.56	0.38	4.59	0.41	4.56	0.43
		.71		.68		.68		.61		.73		.69		.64

3.2 Change across Adolescence

The first goal of the current study was to determine if adolescents report changes in their awareness of racism, connectedness, and embedded achievement and the academic adjustment from the seventh to the eleventh grades. As a first step, the measurement models were tested for the latent growth constructs by fitting unconditional growth curves for the variables of connectedness, embedded achievement, awareness of racism, academic and disciplinary adjustment, general aspects about school and teachers, and relationships with school peers. Following conventions used when modeling multidimensional constructs (Bollen, & Curran 2006), the racial identity variables were entered into one multivariate latent growth curve model that correlated the three latent variables at each year. Similarly, the academic adjustment variables were entered into a second multivariate growth curve model. This analytical method estimates two random latent effects for each construct, one for the intercept, or initial level, and a second for the slope, or rate of change. The measurement model was based on data collected from year 8 to year 14 on each variable.

3.2.1 Racial Identity

The multivariate linear growth curve for racial identity content across the seven years of data showed the model fit the data well: $\chi^2(156) = 226.161$, $p < .001$; $\chi^2/df = 1.44$; CFI = .96; TLI = .96; RMSEA = .03, 90% CI [0.02, 0.04]. The first hypothesis that there would be change in racial identity was partially supported. The variances for both the

intercept and the slope of awareness of racism were statistically significant, indicating significant variability around the means and variances for the random intercept and slope effects. The slopes for embedded achievement and connectedness were not statistically significant, indicating stability across the study years. Subsequent analyses assessing correlates of change only include awareness of racism because it is the only component of racial identity content with a statistically significant mean intercept and slope (see Table 2).

3.2.2 Academic Adjustment

The multivariate growth model for academic adjustment fit the data well: $\chi^2(156) = 218.39, p < .001; \chi^2/df = 1.39; CFI = .97; TLI = .97; RMSEA = .03, 90\% CI [.02, .04]$.

The amount of variability in the intercept and slope for academic and disciplinary adjustment was statistically significant, indicating significant variability in individual's scores at year 8 and rate of change across the study years. Again, the variances for the intercept and slope for perceptions regarding general aspects about school and teachers were statistically significant. There was also significant variability in the intercept and slope for relationships with school peers.

Table 2: Latent Random Effects and Model Fit across 7 years (N = 514)

	Intercept	Variance of intercept	Slope	Variance of slope	Model fit index
Connectedness	3.92 ^{***}	0.13 ^{***}	-0.02	0.01	$\chi^2 = 226.16, df = 156, p < .001$ CFI = 0.96, TLI = 0.96 RMSEA = 0.03 (CI = .02, .04)
Embedded Achievement	3.96 ^{***}	0.24 ^{***}	-0.01	0.01 ^{**}	
Awareness of racism	3.18 ^{**}	0.31 ^{***}	0.03 ^{**}	0.01 ^{**}	
Academic and disciplinary adjustment	3.34 ^{***}	0.30 ^{***}	0.05 ^{***}	0.01 ^{***}	
General aspects about school and teachers	3.88 ^{***}	0.34 ^{***}	-0.10 ^{***}	0.01 ^{**}	$\chi^2 = 218.39, df = 156, p < .001$ CFI = 0.97, TLI = 0.97 RMSEA = 0.03 (CI = .02, .04)
Relationships with school peers	4.45 ^{***}	0.12 ^{***}	0.03 ^{***}	0.01 ^{**}	

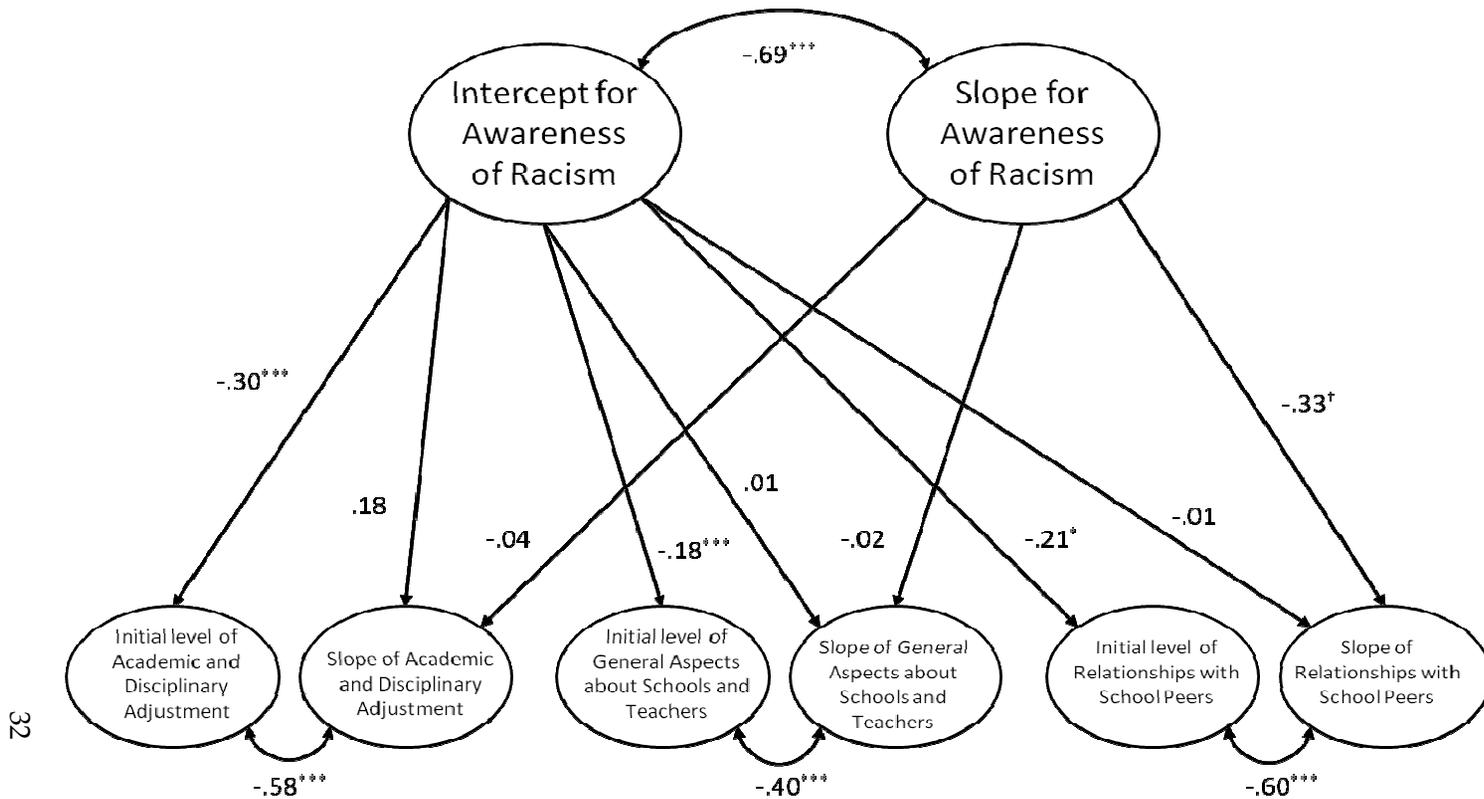
Note. TLI = Tucker-Lewis index; CFI = comparative fit index; RMSEA = root mean square error of approximation.

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

3.3 LGC Model Linking Racial Identity to Academic Adjustment

3.3.1 Racial Identity as a Predictor of Academic Adjustment

Having fit the multivariate growth curves to the six longitudinal variables, analyses were then conducted on the unconditional multivariate model shown in Figure 1. Connectedness and embedded achievement were excluded from this model because results indicated their slopes did not significantly differ from zero. Therefore, this model examined the extent to which the initial ratings of awareness of racism at wave one (the intercept) and the slope of awareness of racism (changes over time) predicted the intercepts and slopes of academic and disciplinary adjustment, general aspects about school and teachers, and relationships with school peers. Results of this unconditional model are presented in Figure 2. An examination of the fit indices suggests the model fit the data well: $\chi^2(275) = 375.43, p < .001; \chi^2/df = 1.36; CFI = .96; TLI = .95; RMSEA = 0.03, 90\% CI [0.02, 0.03]$. Results partially supported the hypothesis that racial identity content would affect academic adjustment. The year 8 intercept of awareness of racism was significantly correlated with lower initial levels of academic and disciplinary adjustment, and relationships with school peers. The negative correlation between the intercept of awareness of racism and the intercept of general aspects about school and teachers was marginally significant. Additionally, increases in awareness of racism over time (slope) did not significantly predict change in any of the three academic adjustment outcomes. However increases in awareness of racism marginally predicted decreases in



Note. * $p < .05$, *** $p < .001$, † $p = .052$

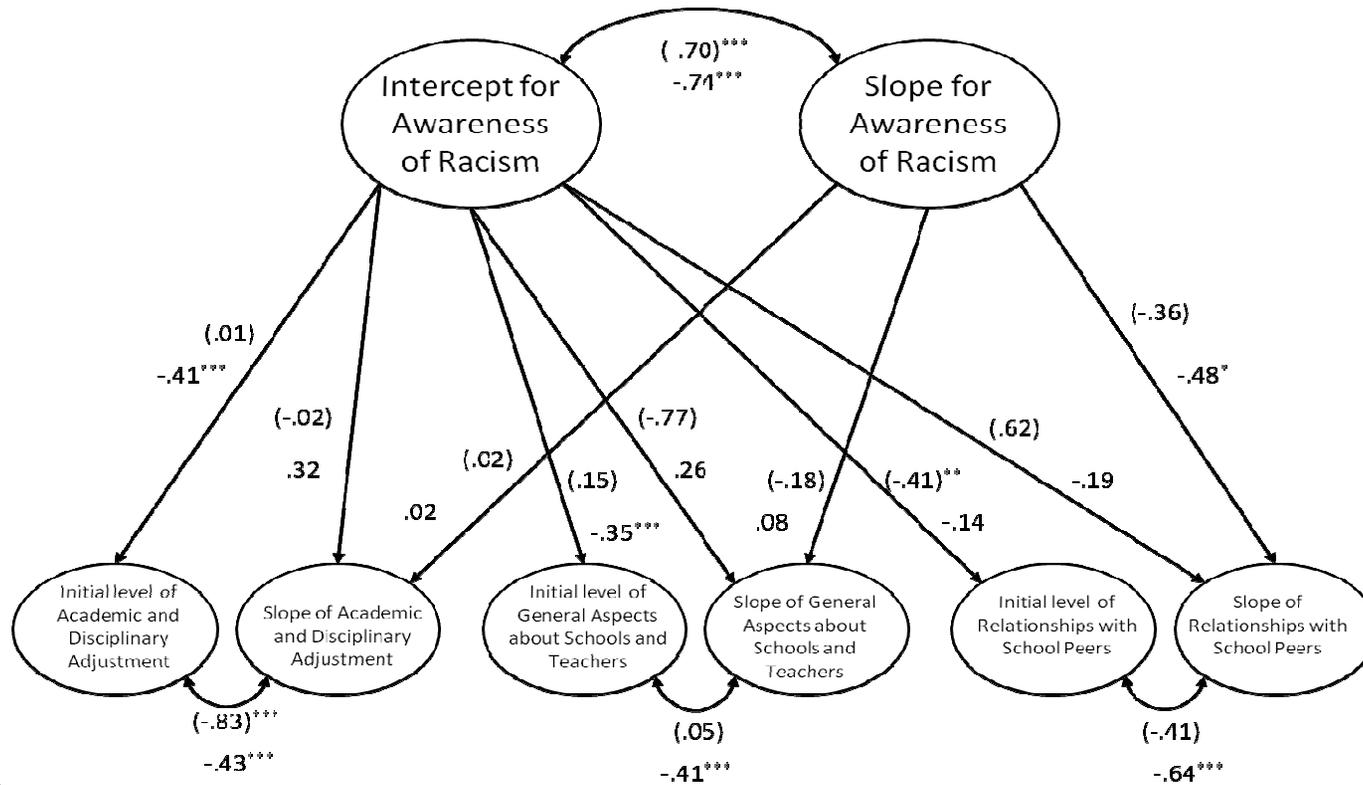
Figure 2: Latent growth curve test of the effects of awareness of racism on academic adjustment

relationships with school peers. While these findings indicate awareness of racism predict some aspects of academic adjustment contemporaneously, these findings are inconsistent with expectations that negative change in awareness of racism would negatively predict academic adjustment over time.

3.3.2 Test for Moderation Effects of Gender

It was hypothesized that gender would moderate the relationship between racial identity content and academic adjustment. To test this hypothesis, a two-group multivariate analysis was conducted to simultaneously estimate the model for both groups with no constraints (Muthén, & Muthén, 2004). The next step involved imposing equality constraints to determine whether constraining the coefficients to be equal across gender would worsen the two-group multivariate model as indicated by a larger chi-square than the baseline model with 18 degrees of freedom based on the number of parameters constrained. A moderation effect would result in a significant difference in chi-square. The unconstrained model provided moderate fit for the data as suggested by the following indices: $\chi^2 = 1021.50$, $df = 550$, $p < .001$; CFI = .841; TLI = .810; RMSEA = .06, 90% CI [.05, .06]. The constrained model held the coefficients for the slope and intercept of awareness of racism and the regression equations equal across gender. This constrained model fit the data slightly worse $\chi^2 = 1050.97$, $df = 568$, $p < .001$; CFI = .837; TLI = .810; RMSEA = .06, 90% CI [.05, .06]. To determine if the difference between the two models was significant, the chi-square values of each model were compared,

yielding the following significant chi-square change indicators: $\Delta\chi^2(18) = 29.47, p = .04$. As can be understood by comparing the obtained chi-square change statistic to the critical value $\chi^2(18) = 28.87$, these results indicate that there may be gender moderation. The influence of awareness on academic adjustment differs for boys and girls. However, Cheung and Rensvold (2002) suggest that with large sample sizes a significant chi-square hypothesis test may be statistically significant and have little practical significance. Therefore, it is suggested that the ΔCFI be greater than 0.01 to have evidence of variant models (Cheung & Rensvold, 2002). An inspection of the standardized coefficients in Figure 3 allow for the comparison of effects. The coefficients suggest that the effect of initial levels of awareness of racism on initial levels of academic and disciplinary adjustment and general aspects about school and teachers was slightly weaker for girls than boys (see Figure 3). These results also indicate that the negative effect of initial levels of awareness of racism on initial levels of relationships with school peers was slightly stronger for girls than for boys. However, the negative effect of the slope of awareness of racism on the slope of relationships with school peers was slightly stronger for boys than it was for girls, indicating that awareness of racism may be a slightly weaker predictor of negative academic adjustment for girls than for boys beyond early adolescence.



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Note. Estimates in parentheses are for girls. * $p < .05$, ** $p < .01$, *** $p < .001$

Figure 3: Two-group latent growth curve test of gender moderation on the relation between awareness of racism on academic adjustment

4. Discussion

Despite agreement that developing a sense of racial identity is a key developmental task for African American adolescents, few studies have explicitly examined racial identity content change longitudinally. The current investigation sought to answer three important questions regarding African Americans adolescent racial identity across the middle and high school years. First, the present study examined the presence of change in adolescent awareness of racism, connectedness, and embedded achievement from the seventh to the eleventh grades. The second question was to determine how racial identity predicts academic adjustment across adolescence. Finally, this study investigated gender as a moderator of the relationship between racial identity and academic adjustment. The results indicated that (a) youth become increasingly more aware of racism as they move from early to late adolescence; (b) awareness of racism predicts youths' perceptions of their academic performance and environment in early adolescence; (c) the negative link between awareness of racism and youth's perceptions of their school environment and academic and disciplinary adjustment in early adolescence is stronger among boys than girls; (d) the negative effect of awareness of racism on youths' relationships with peers was stronger for girls than for boys; (e) the effect of the growth trajectory of awareness of racism on the slope of relationships with school peers was stronger for boys than it was for girls.

Analyses for connectedness and embedded achievement did not suggest group level change. These results are consistent with longitudinal studies indicating levels of affective components of racial identity (e.g., belongingness and embedded achievement) remain stable during late adolescence (Pahl & Way, 2006). Despite assumptions in the literature pointing to positive trends in racial identity content, by the time African Americans reach adolescence, identity appears to be relatively stable at the trend level. Findings from this study are consistent with those suggesting that growth in these domains may occur at earlier ages (French et al., 2006) or that by the time youth reach adolescence, individual variability masks group level change (Kiang, Witkow, Baldelomar, & Fuligni, 2010). The basic growth model did indicate that the slope of awareness of racism significantly increased throughout adolescence. It is possible that awareness of racism is a direct reflection of perceived discrimination, which previous literature has found to increase throughout adolescence among youth of color (Brody, et al, 2006; Garcia Coll et al. 1996) especially among African American males (Chavous, Harris, Rivas, Helaire, & Green, 2004; Taylor, Casten, Flickinger, Roberts, & Fulmore, 1994).

The analyses also indicated that awareness of racism was significantly related to academic adjustment in adolescence. Specifically, in early adolescence, awareness of racism negatively predicts peer relationships for girls. A multivariate two-group model indicated that awareness of racism is a stronger predictor of boys' peer relationships

from early to late adolescence. This finding is consistent with the literature linking perceived discrimination to negative academic outcomes among youth of color (Burchinal, Roberts, Zeisel, & Rowley, 2008; Steele, 1997; Thomas, Caldwell, Faison, & Jackson, 2009; Wong, Eccles, & Sameroff, 2003). This pattern of sustained implications of increased awareness of racism for boys may be driven by the unique racial experiences that African American males encounter with age.

These results raise questions concerning the mechanisms through which awareness of racism influences academic outcomes for youth. It has been previously suggested that discrimination influences academic achievement indirectly through academic self-concept (Cokley, & Chapman, 2008; Rivas-Drake, Hughes, & Way, 2009). Additionally, studies have linked perceived discrimination to negative well-being and psychological adjustment (Seaton, Caldwell, Sellers, & Jackson, 2008; Wong, et al., 2003). Negative well-being and psychological adjustment may subsequently have negative effects on academic outcomes for youth. Further research should examine potential the direct effect of well-being and psychological adjustment on the relationship between racial identity and academic adjustment. Another potential factor that has received less attention is the influence of gender on this relationship.

Prior research had not examined the moderating effect of gender on this relationship throughout adolescence. Based on previous research conducted with African American youth (e.g., Chavous, Rivas-Drake, Smalls, Griffin, & Cogburn, 2008),

it was proposed that the mechanisms through which racial identity affects academic adjustment would differ for boys and girls. The differences across gender found in this sample indicate that the influences of racial identity trajectories differ for boys and girls. What may explain these findings is the pattern of racial identity to develop earlier among girls than boys as suggested by previous research conducted among third-grade African American children (Smith, Levine, Smith, Dumas, & Prinz, 2009). The data suggest that racial identity content change is indeed occurring and gender is an important factor in determining direction, timing, and rate of change. The phenomenological variant of ecological systems theory (PVEST; Spencer, Dupree, & Hartmann, 1997) stipulates that youth develop racial identities as a coping response to specific events and experiences; therefore it is possible that there are other coping mechanisms that girls rely upon after early adolescence. Further studies should explore the potential mechanisms that may be protecting girls from the negative implications of has awareness of racism. Such studies may have implications for interventions targeted at protecting African American males from negative academic outcomes.

The majority of previous studies rely upon other measures of racial identity (e.g., MEIM, MIBI). This study incorporated a less commonly used measure, the racial-ethnic identity measure (REI; Oyserman, Gant, & Ager, 1995). The measure of racial identity used in this study encompassed embedded achievement, the sense that success is important to other racial group members. Additional work should be conducted to

examine how this measure of racial identity content compares to other measures in use. This study provides a first step in extending the use of this measure.

Despite the strengths of the present study, several limitations must be addressed. This study did not account for the wide range of individual variation within African Americans that may contribute to racial identity development of African American. First, the sample included a high proportion of youth at risk for problem behavior. Also, the current sample was drawn from a low-income group and was not nationally represented, so these findings should not be generalized. Future research studies should incorporate models testing the impact of with-in group socioeconomic diversity that exists among African Americans. Additionally, the models tested in the present study did not identify processes and characteristics such as socialization, school racial make-up, and cognitive abilities that may contribute to individual variation in racial identity trajectories. Therefore, further research should explore individual and contextual factors that might be driving change in racial identity. Such efforts should also explore the implications of having multiple salient identities (e.g., gender, religious, and racial) and determine how they contribute to self-perceptions and developmental outcomes.

Despite these limitations, the current study represents an important basis upon which further research can expand. The results contribute to our understanding of the relationship between racial identity and academic adjustment for boys and girls throughout adolescence. These findings, coupled with previous research, support the

need for studies spanning childhood and adolescence to better assess correlates of racial identity content change that may inform interventions and person-centered approaches to improving developmental outcomes, particularly for African American male youth (Spencer, & Markstrom-Adams, 1990). The present study indicates that while connectedness and embedded achievement do not change in adolescence, youth do become more aware of racism. Increased awareness of racism has negative academic implications for youth. Yet, these patterns of change differ for boys and girls. This is especially important for African American males who appear to be most at risk of encountering stereotypes and racism. Specifically, data presented suggest that across adolescence, awareness of racism remains a persistent risk factor for African American male youth. The present study reiterates the need to explore how the intersection of race and gender affect academic outcomes for African American youth.

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