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A Longitudinal Study of Academic Identification Among African American Males and Females

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Abstract

Disidentification hypothesis researchers have proposed that African American students start school academically identified; however, over time, African American boys tend to disidentify while girls tend to remain identified. This is the first report to follow up a disidentification study of a group of children first examined during elementary school. The current study aimed to determine whether gender differences in discounting, devaluing, and full-blown disidentification had developed among these 94 African Americans by midadolescence. Multiple regression analyses revealed no gender differences in either discounting or full-blown disidentification; however, the evidence indicated that girls valued academics more than boys.

Keywords

academic self-concept, self-esteem, academic achievement, adolescent development

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For reasons that are not yet fully understood, African American girls generally outperform African American boys academically. Data from the Early Childhood Longitudinal Study Kindergarten Class of 1998-1999 indicated that elementary school literacy scores for African American boys were significantly lower than those of their female counterparts (Matthews, Kizzie, Rowley, & Cortina, 2010). Based on data from the National Center for Educational Statistics (2013), this disparity continues through high school. African American females earned significantly higher scores than males on the National Assessment of Educational Progress reading achievement test in both the 8th and 12th grades (National Center for Education Statistics, 2013). Although a gender gap in mathematics has not been consistently demonstrated (McGraw, Lubienski, & Strutchens, 2006; National Center for Education Statistics, 2013), African American boys do exhibit more school difficulties. They are less likely to be in gifted education programs and more likely to be placed in special education, be suspended or expelled, and be held back or drop out of high school (Aud, Kewal Ramani, & Frolich, 2011; Bloom & Cohen, 2007; DiPrete & Buchmann, 2013; Morris, 2014).

This study explores whether academic identification (i.e., specific relationships among self-perceptions and achievement) might partially explain gender gaps in academic achievement. First, we provide an overview of the research on achievement as a predictor of self-perception; then, we briefly review academic identification research, specifically as it relates to African Americans and gender differences between African Americans. Finally, we use the academic identification framework to analyze and discuss whether gender differences exist in achievement, discounting, devaluing, and full-blown disidentification.

Academic Achievement as a Predictor of Self-Perception

More than 100 years ago, the preeminent American psychologist, William James, described a construct he labeled as "self-esteem," which reflected the degree to which people satisfied their own ambitions (James, 1892). Another early theorist expanded the discussion to include not only self-expectations but also the extent to which people were affirmed by significant others in their environments (Cooley, 1902). These ideas are still valid components of our modern understandings of self-esteem. Their relevance is obvious for students in today's public educational systems, where boys and girls are continually confronted with positive or negative feedback for their academic performance.

As such, success in academics could be a source of self-esteem for students (Harter, 1990; Kleitman & Gibson, 2011; Marsh, Trautwein, Lüdtke, Köller, & Baumert, 2005). Research has shown that students who perceive themselves as academically competent have higher self-esteem than students who do not see themselves as doing well (Alves-Martins, Peixoto, Gouveia-Pereira, Amaral, & Pedro, 2002; Booth & Gerard, 2011). However, research has also found that the relationship between academic competence and self-esteem depends on multiple factors (Gray-Little & Hafdahl, 2000). For example, there are age-related and racial and ethnic differences in the degree to which this relationship occurs for some students (Valentine, Dubois, & Cooper, 2004).

Because African American girls tend to outperform African American boys academically, African American girls might be expected to have higher self-esteem than African American boys. However, research shows that African American boys and girls have similar levels of self-esteem. Twenge and Crocker (2002) found that African American boys had lower self-esteem than girls; however, this has not been the general trend. Hyde (2014) recently reiterated an earlier conclusion that was derived from a meta-analysis (Kling, Hyde, Showers, & Buswell, 1999), which indicated that although European American boys had slightly higher self-esteem than their female counterparts, there were no significant differences in self-esteem between African American girls and boys. Similarly, in an analysis of early adolescents that included approximately 1,600 African Americans, Adams, Kuhn, and Rhodes (2006) found that African American boys and girls had equal self-esteem levels.

As children grow, they experience expectations and accomplishments in several domains, including academic, social, and athletic contexts. In these areas and others, self-evaluation is ongoing. Substantial research has found that academic achievement is more congruent with self-rated academic ability in adolescent girls compared to adolescent boys (Chavous, Rivas-Drake, Smalls, Griffin, & Cogburn, 2008; Cokley, 2002; Cokley, McClain, Jones, & Johnson, 2012; Saunders, Davis, Williams, & Williams, 2003). Some researchers (e.g., Beasley, Miller, Cokley, 2014; Osborne, 2001; Wood, Kaplan, & McLoyd, 2007) have suggested that African American males, compared to females, are more strongly subjected to racial and gender stereotypes and barriers to success and that these factors might partially explain the lack of congruence.

Patterns of Academic Identification

Academic identification implies that a student's self-esteem is tied to how well he or she performs academically. *Academic disidentification* indicates that a student's self-esteem is not connected to his or her academic performance. Researchers, including Major and Schmader (1998), have described academic

disidentification as a coping strategy that responds to negative stereotypes about African American achievement (Beasley et al., 2014; Chavous et al., 2008; Morgan & Mehta, 2004; Nussbaum & Steele, 2007). Disidentification includes discounting, devaluing, and full-blown disidentification (Crocker & Major, 1989; Crocker, Major, & Steele, 1998; Morgan & Mehta, 2004). *Discounting* occurs when external measures of student achievement (e.g., academic feedback, such as standardized test scores or grades) have a diminishing effect on a student's perceived academic competence (Crocker et al., 1998). *Devaluing* is a student's perception of academic competence as having little or no effect on his or her self-esteem (Crocker et al., 1998; Steele, 1997). *Full-blown disidentification* is shown when actual academic achievement has a diminishing effect on a student's self-esteem (Steele, 1992).

Gender Differences in Academic Identification and Subsequent Disidentification

Most academic identification researchers believe that African American boys and girls equally identify with academic achievement in elementary school, but, over time, African American girls remain identified, while African American boys become disidentified. However, longitudinal research that focuses on gender differences in the development of academic identification/disidentification is lacking. Most published studies include high school or college students; in these populations, African American males are often disidentified and have lower achievement than African American females, while females tend to be academically identified (Mickelson & Greene, 2006; Osborne, 1995; Voelkl, 2012; Wigfield, Eccles, Schiefele, Roeser, & Davis-Kean, 2007). Cross-sectional studies have shown that the relationship between academic self-concept and achievement remains the same or increases for high school– and college-age African American females but decreases for high school– and college-age African American males (Cokley, 2002; Cokley et al., 2012; Hope, Chavous, Jagers, & Sellers, 2013). Similarly, the relationship between overall self-esteem and achievement decreases for African American males but not for African American females (Bachman, O'Malley, Freedman-Doan, Trzesniewski, & Donnellan, 2011; Osborne, 1995, 1997; Sirin & Rogers-Sirin, 2004; Van Laar, 2000). Cokley (2014) has theorized that gender differences in academic identification could be a defense mechanism that is due, in part, to Black males facing more hostile school (and larger societal) environments with less access to same-race/same-gender role models.

In a previous study of gender differences in academic disidentification among young African American students, McMillian, Frierson, and Campbell (2011) examined academic achievement, academic self-perception, and

global self-esteem in a sample of 8- and 12-year-old African American students. This study showed that mathematics and reading achievement levels for girls and boys were similar at both ages. In addition, the relationships between academic self-concept and self-esteem, as well as between self-esteem and achievement were similar in boys and girls. There was no gender gap in academic identification. However, as in previous studies (e.g., Lam et al., 2012; Smalls & Cooper, 2012; Taylor & Graham, 2007), it is possible that a gender gap in engagement could have emerged during adolescence.

Research Aims

The current study examines academic identification patterns in the same sample of students using data collected when they were midadolescents and had completed 10 years in public school. These data will be compared to that collected when the participants were elementary school–aged children and early adolescents (i.e., 8 and 12 years old). If the theory of progressive development for academic disidentification is supported, the present data should show gender differences in academic achievement in the relationship between (1) previous achievement and current academic self-concept, (2) current academic self-concept and self-esteem, and (3) current academic test scores and global self-esteem. Specifically, we will test the following hypotheses:

> **Hypothesis 1:** Fifteen-year-old girls will outperform 15-year-old boys in both mathematics and reading.
> **Hypothesis 2:** Previous achievement in mathematics and reading will be less predictive of 15-year-olds' academic self-concept for African American boys compared to African American girls (discounting).
> **Hypothesis 3:** The relationship between academic self-concept and global self-esteem will be stronger for 15-year-old African American girls than 15-year-old African American boys (devaluing).
> **Hypothesis 4:** Achievement in mathematics and reading will be less related to global self-esteem for 15-year-old African American boys than 15-year-old African American girls (full-blown disidentification).

Method

Participants

Students who provided data for this study participated in the Abecedarian Project, which is a randomized study of early childhood educational interventions for children born into low-income families. We used a High Risk Index (Ramey & Smith, 1977) to assess sociodemographic factors that were associated with

poverty to screen families. In addition to earning a qualifying score on the Index, infants had to be healthy newborns who did not have biologically based developmental delays or physical handicaps. Families of all races and ethnicities were welcome to apply if they qualified on the High Risk Index. Between 1972 and 1977, a total of 122 families were screened, and 120 eligible families were identified and offered enrollment. Eight families refused their random assignments, 1 child was ineligible, and 2 were dropped for administrative reasons, which resulted in 109 families with 111 healthy infants (1 family had a set of twins and 1 sibling) that were randomly assigned to either the early childhood treatment group ($n = 57$) or the control group ($n = 54$). Of the admitted families, 98% identified themselves as African American. Treated children were provided with full-time educational child care from infancy until kindergarten entry; control group children experienced a variety of child care settings, including full-time care at home. However, by age 4, approximately three fourths of these children had attended some form of preschool outside of the home. Participants, similar to those in other academic-identification studies (e.g., Griffin, 2002; Morgan & Mehta, 2004; Osborne, 1995, 1997), were born in the 1970s. The previous research on academic identification patterns among this sample of 8- and 12-year-olds has been based on data from a slightly larger sample that included 113 African American students (McMillian et al., 2011) who were drawn from both the Abecedarian study and project CARE (Wasik, Ramey, Bryant, & Sparling, 1990). Fewer cases could be included in the present analyses because no data were collected from CARE participants at age 15.

Early attrition among the Abecedarian sample consisted of four children who died before age 5, one who withdrew from the study, and one who was ineligible for health reasons. Of the remaining 105 children, 2 were eliminated from the present study because they were not African American, and 9 additional children were excluded because they did not have complete data (they lacked either age 12 or age 15 information). Thus, the present study is based on 94 African American students—47 females and 47 males—who entered public kindergarten at age 5. Most attended the city school system in the college town where the study was located, but some attended school in the surrounding districts. All local schools had been fully integrated for at least 11 years when these students were enrolled, but African Americans were in the minority in all cases and accounted for approximately 15% of the student body in the towns where most attended school.

Measures and Procedure

Demographic information includes gender and treatment assignment, based on the randomly assigned group status of the infants at the beginning of the study.

Academic achievement was measured at ages 12 and 15 using age-referenced standard reading (test-retest reliability of $r = .959$) and mathematics (test-retest reliability of $r = .969$) clusters from the Woodcock-Johnson Psycho-Educational Battery, Part II: Tests of Achievement (WJ; Woodcock & Johnson, 1977). These subtests were individually administered to students at both ages by research project personnel.

Measures of self-concept were based on two versions of Harter's Self-Perception Profiles: the Self-Perception Profile for Children (Harter, 1979, 1982, 1985), which was administered at age 12, and the Self-Perception Profile for Adolescents (Harter, 1988, 2012), which was administered at age 15. The Scholastic Competence subscale from the children's profile was used in the present study, and the Global Self-worth (i.e., global self-esteem) and Scholastic Competence (i.e., academic self-concept) subscales were used from the adolescent profile.

Both Profiles yielded scores that were based on multiple bipolar items that were scored from 1 to 4 (1 = *least descriptive*, 4 = *most descriptive*). The child version scales were based on seven items, while the adolescent scales were based on five items. Each student chose which pole best fit himself or herself and how strongly ("really true for me" or "sort of true for me"). For example, items that measured Scholastic Competence from the Self-Perception Profile for Children included "Some kids feel that they are very good at their school work" and "Other kids worry about whether they can do the school work assigned to them." Sample items from the Self-Perception Profile for Adolescents that measures Scholastic Competence included "Some teenagers think that doing well in school is really not that important" or "Other teenagers think that doing well in school is important." Example items for global self-esteem included "Some teenagers are happy with themselves most of the time" and "Other teenagers are often not happy with themselves." The mean ratings were calculated for each scale; a mean below 3 indicated that the ratings were in a negative direction. The internal consistency for sixth graders was $r = .76$ for scholastic self-concept. The internal consistencies for ninth graders' scores were $r = .88$ and $r = .81$ for global self-worth (i.e., self-esteem) and scholastic self-concept, respectively.

A series of ordinary least squares (OLS) regression analyses determined whether there were gender differences in achievement and whether gender explained the relationships of interest. In the first analysis, the outcome variable was academic achievement; for the second analyses, it was scholastic self-esteem; and for the last two analyses, it was global self-esteem.

Results

A score distribution analysis determined that there was no need for score transformations. A one-sample chi-square test indicated no gender differences for

Table 1. Study Sample Descriptive Statistics.

| | Girls | | | | Boys | | | |
| | Treatment | | Control | | Treatment | | Control | |
Variable	M	SD	M	SD	M	SD	M	SD
WJ reading—age 12	92.63	13.73	84.28	10.06	87.56	12.75	85.00	12.06
WJ mathematics—age 12	94.08	13.97	84.52	13.44	89.32	10.51	87.59	15.36
WJ reading—age 15	96.75	14.31	88.07	10.31	90.70	10.29	89.04	10.71
WJ math—age 15	95.13	15.89	85.32	12.89	91.22	11.35	88.70	12.42
SSC—age 12	2.66	0.61	2.67	0.58	2.63	0.50	2.82	0.75
SSC—age 15	2.79	0.64	2.79	0.58	2.79	0.45	2.71	0.66
Global self-esteem—15	2.93	0.77	3.17	0.78	3.29	0.46	3.12	0.69

Note: WJ = Woodcock-Johnson Psycho-Educational Battery; SSC = scholastic self-concept.

treatment assignment (1, $N = 94$), $\chi^2 = 0.170$, $p = .679$. Scatter plots indicated no nonlinear relationships between the predictor and outcome variables. Table 1 provides means and standard deviations for the WJ reading and math scores at ages 12 and 15, scholastic competence measures at ages 12 and 15, and global self-esteem scores at age 15. All means and standard deviations were within a reasonable range. Table 2 provides the first-order correlations among these variables for boys and girls. In general, scholastic competence was related to academic achievement scores; however, global self-esteem at age 15 was related only to concurrent scholastic competence. The early childhood treatment group was included as a control variable in all predictive models because previous work has shown that the preschool program had a positive effect on academic skills during the time period in which participants were rating their scholastic competence and global self-esteem (Campbell & Ramey, 1994, 1995).

Hypothesis 1: Gender Differences in Reading and Mathematics Achievement Scores at Age 15

Separate OLS regression analyses were conducted for mathematics and reading achievement to determine whether 15-year-old African American girls outperformed 15-year-old African American boys. Reading achievement and mathematics achievement were separately regressed on participants' gender, treatment, and the interaction between gender and treatment. The interaction was not significant so the models were rerun without the interaction term. The overall models for mathematics, $F(2, 99) = 2.81$, $p = .065$, and reading, $F(2, 99) = 3.05$,

Table 2. Intercorrelations Between Academic Achievement and Self-Concept Scores at Ages 12 and 15.

Variable	1	2	3	4	5	6	7
1. WJ reading—age12	—						
2. WJ math—age 12	.64*	—					
3. WJ reading—age 15	.91*	.62*	—				
4. WJ math—age 15	.66*	.84*	.69*	—			
5. SSC—age 12	.28**	.30*	.29**	.28**	—		
6. SSC—age 15	.32**	.35**	.24***	.38*	.43*	—	
7. Global self-esteem—age 15	.04	.08	−.05	.06	.17	.45*	—

Note: WJ = Woodcock-Johnson Psycho-Educational Battery; SSC = scholastic self-concept.
ns: Between 94 and 102 per cell.
*$p < .001$. **$p < .01$. ***$p < .05$.

$p = .052$, were marginally significant. However, gender did not predict mathematics ($\beta = -0.0103$, $p = .92$) or reading ($\beta = -0.109$, $p = .27$). Early childhood treatment was the only significant predictor of math ($\beta = 0.23$, $p = .02$) and reading achievement ($\beta = 0.22$, $p = .024$). Thus, we did not find that 15-year-old girls significantly outperformed 15-year-old boys in mathematics or reading.

Hypothesis 2: Gender Differences in Discounting

Separate OLS models for math and reading achievement at age 12 predicted scholastic competence at age 15 from early treatment, gender, prior WJ scores (at age 12), scholastic competence at age 12, and the interaction between gender and WJ scores at age 12 (see Table 3). The model that included mathematics as a predictor was significant, $R^2 = .259$ (adjusted $R^2 = .218$). However, mathematics ($\beta = 0.118$, $p = .37$), gender ($\beta = -0.897$, $p = .15$), and the interaction between mathematics and gender ($\beta = 0.852$, $p = .18$) were not significant. The only statistically significant predictor in this group was previous scholastic competence at age 12 ($\beta = 0.352$, $p = .0006$). Similarly, the model that included reading as a predictor was significant, $R^2 = .2327$ (adjusted $R^2 = .189$), but reading ($\beta = 0.216$, $p = .12$), gender ($\beta = 0.094$, $p = .88$), and the interaction between reading and gender was not significant ($\beta = -0.144$, $p = .83$). Again, the only statistically significant predictor in this group was previous scholastic competence ($\beta = 0.383$, $p = .0002$).

Hypothesis 3: Gender Differences in Devaluing

An OLS model was conducted on self-esteem at age 15 with preschool treatment, gender, and scholastic competence at 15, as well as the interaction

Table 3. Discounting: Generalized Linear Model Predicting Age 15 Scholastic Self-Concept From Treatment, Age 12 Scholastic Achievement, Age 12 Self-Rated Scholastic Competence, and Gender.

Source	B	β	SE	t
Early treatment	0.07	0.06	0.11	0.58
Age 12 math score	0.01	0.12	0.01	0.91
Age 12 SSC	0.34	0.35	0.09	3.57**
Gender	−1.04	−0.90	0.73	−1.44
Gender × math score	0.01	0.85	0.01	1.35
Early treatment	0.06	0.05	0.11	0.49
Age 12 reading score	0.01	0.22	0.01	1.57
Age 12 SSC	0.37	0.38	0.09	3.89**
Gender	0.11	0.09	0.77	0.14
Gender × reading score	0.00	−0.14	0.01	−0.22

Note: SSC = scholastic self-concept. Reading and math scores are from the Woodcock-Johnson Psycho-Educational Battery.
*$p < .05$. **$p < .01$.

between scholastic competence at 15 and gender as predictors (see Table 4). The overall model was significant, $R^2 = .248$ (adjusted $R^2 = .216$). Both gender (β = 0.885, $p = .05$) and scholastic competence at age 15 (β = 0.598, $p < .0001$) were positively related to self-esteem at age 15. However, this finding was modified by a marginally significant interaction between scholastic competence and gender (β = −0.781, $p = .08$). Thus, in this sample, overall global self-esteem was higher in boys, but the relationship between scholastic competence and overall self-esteem was marginally stronger in girls than in boys.

Hypothesis 4: Full-Blown Disidentification

We performed separate OLS regression models that predicted global self-esteem at age 15 from concurrent academic scores in mathematics and reading and the interaction between achievement and gender (see Table 5). The models for mathematics, $R^2 = .033$ (adjusted $R^2 = −.006$), and reading achievement, $R^2 = .03$ (adjusted $R^2 = −.010$), were not significant. Achievement scores did not significantly predict global self-esteem in 15-year-olds. Thus, there was not a strong relationship between global self-esteem and academic achievement in this sample of African American midadolescents.

Discussion

This study is a follow-up to a previous study that found no longitudinal gender differences in academic identification/disidentification for African American

Table 4. Devaluing: Generalized Linear Model Predicting Age 15 Overall Self-Esteem From Treatment, Age 15 Academic Self-Concept, and Gender.

Source	B	β	SE	t
Early treatment	−0.05	−0.04	0.12	−0.44
Age 15 SSC	0.72	0.60	0.14	5.05**
Gender	1.21	0.89	0.60	2.02
Gender × SSC	−0.37	−0.78	0.21	−1.76

Note: SSC = scholastic self-concept.
*p < .05. **p < .01.

elementary or early adolescent students. The goal of the present analysis was to determine whether there were gender differences in discounting, devaluing, or full-blown disidentification among the same African American students by midadolescence, that is, by age 15. In contrast to our expectations, a gender gap in academic achievement had not developed by that age, and there were no gender differences in discounting among the older students. However, it did appear that, in this sample, 15-year-old African American girls valued academics more than African American boys. In contrast, there were no statistically significant relationships between age 15 academic achievement and global self-esteem for boys or girls. Thus, there were no gender differences for full-blown disidentification in this sample of teenagers.

Gender Differences in Achievement

Other disidentification researchers have found that African American adolescent girls outperform their male counterparts, but the present study's findings do not support this conclusion. If academic disidentification theory were supported, then 15-year-old African American girls would have outperformed African American boys in reading and mathematics (see Cokley et al., 2012; Osborne, 1995, 1997). However, although African American girls who had early childhood treatment earned slightly higher WJ scores on both reading and math than African American boys with early treatment, girls without early treatment had slightly lower scores in both reading and math than boys without early treatment. None of these differences were significantly different. Conservatively, in this sample of African American students, boys and girls performed equally well in mathematics and reading at age 15. However, it is important to note that in the full sample of high-risk children treated in the child care–based Abecedarian early childhood intervention study, those with preschool treatment earned significantly higher WJ scores at age 15 than

Table 5. Full-Blown Academic Disidentification: Generalized Linear Model Predicting Global Self-Esteem in 15-Year-Old African Americans From 15-Year-Old Academic Achievement and Gender.

Source	B	β	SE	t
Early treatment	−0.05	−0.03	0.14	−0.32
Age 15 math score	0.00	−0.04	0.01	−0.28
Gender	−1.07	−0.78	0.96	−1.11
Gender × math score	0.01	0.91	0.01	1.28
Early treatment	−0.01	−0.01	0.14	−0.06
Age 15 reading score	−0.01	−0.14	0.01	−1.13
Gender	−1.25	−0.91	1.11	−1.07
Gender × reading score	0.02	1.03	0.01	1.27

Note: Reading and math scores are from the Woodcock-Johnson Psycho-Educational Battery.
*p < .05. **p < .01.

those in the preschool control group. Rerunning those models after adding child gender and maternal IQ as predictors slightly strengthened the effect of early treatment but did not show significant gender effects (Campbell & Ramey, 1995).

Gender Differences in Discounting Achievement

This longitudinal study provides an opportunity to track the progressive development of the relationship between academic success and self-rated scholastic competence in small samples of African American boys and girls. If the disidentification hypothesis were supported, then African American midadolescent boys would discount early achievement more than African American girls. The current findings did not support this hypothesis; rather; there was no evidence of gender differences. After holding treatment and early scholastic competence constant, boys and girls both discounted prior achievements. In contrast to our expectations for predicting scholastic competence in this sample, prior achievement did not appear to be incorporated into self-rated scholastic competence for boys or girls at age 15. However, this does not answer the question of why earlier scholastic competence strongly predicted midadolescent scholastic competence. There does appear to be some continuity between the ages of 12 and 15 when these individuals described their scholastic potential. Moreover, these students appeared to be cognizant of the relationship between their concurrent academic performance and scholastic potential. When we tested separate models with age 15 WJ scores in mathematics and reading predicting age 15 scholastic competence,

controlling for early treatment, gender, and the interaction between the WJ scores and gender, we found that concurrent mathematics achievement predicted age 15 scholastic competence in these adolescent African Americans. Concurrent reading achievement did not predict in the same way. Gender was not a predictor for either subject.

Gender Differences in Devaluing

Disidentification researchers have proposed that all children value academic achievement early on (e.g., McMillian et al., 2011), but by adolescence, African American girls value academics more than boys (e.g., Cokley et al., 2012). The current study partially supports this hypothesis. The main effect for scholastic self-esteem at age 15 was highly significant and indicated that for both boys and girls, self-perceptions of scholastic competence contributed to global self-esteem. However, this finding was modified by the marginally significant interaction between gender and scholastic self-esteem, which indicates that, holding treatment constant, perceptions of scholastic ability was more predictive of global self-esteem in girls than boys. This finding suggests that adolescent African American girls value academic achievement more than African American adolescent boys.

Gender Differences in Full-Blown Disidentification

The relationship between global self-esteem and academic achievement at age 15 was expected to be less strong for boys than girls. However, in this sample, we were unable to demonstrate gender differences in the relationship between global self-esteem and academic achievement in adolescence. Using individually collected age-referenced standard achievement scores in reading and mathematics for academic achievement, we found that accomplishments in neither subject predicted global self-esteem. This suggests that academic achievement was not particularly salient for global self-esteem in the current sample of midadolescent students. Their concurrently demonstrated mathematics ability was associated with self-ratings of scholastic competence, but this apparent awareness was not related to overall global self-worth. The data suggest a disconnect between academic skills and global self-esteem in these adolescent students. Interestingly, mathematics, rather than reading, contributed to the sense of scholastic competence. Inspecting the scores in Table 1 showed that the mean age-referenced standardized scores for reading increased 3 to 4 points for both girls and boys from age 12 to 15, while there was less change in standardized math scores. Nevertheless, competence in mathematics contributed to academic competence to a greater degree than

reading. Although the present data cannot explain this finding, we speculate that reading is so ubiquitous in school that reading skills may be taken for granted while mathematics may present greater challenges and more directly contribute to scholastic self-esteem.

The present data indicate decreased investment in academic achievement for both the males and females in this sample. Although the findings marginally support the theory of differential disidentification over time in males and females, the overwhelming impression is that, after 10 years in school, when most of these students had completed ninth grade, neither males nor females appeared to attach significance to their current academic performance when they evaluated their global self-esteem. Given the social pressures that high school students face, personal appearance, relationships with the opposite sex, and sports may become more important for many teens (Harter, 2012; Liem & Martin, 2011). It could be that in the present sample, global self-esteem was more tied to nonacademic matters than to their sense of their academic excellence and competitive standing in the classroom. Because most of these students were enrolled in a public school system in which the "average" student routinely scored above national norms in standardized evaluations, this group of students may have emphasized academics to a lesser degree than they may have done in other, less competitive settings. An earlier, larger study was conducted that compared the predictors of scholastic self-esteem of the Abecedarian high-risk sample with those of a random sample of the entire student body that represented the full range of backgrounds and achievement levels characteristic of the location. Student gender was included among the predictors. Gender was related to scholastic self-esteem in that study for the high-risk Abecedarian girls. Those who had completed the preschool educational program and subsequently earned, on average, higher WJ scores, rated themselves lower on scholastic competence than did their high-risk peers whose average WJ scores were lower (Campbell, Pungello, & Miller-Johnson, 2002). Consistent with theories in which academic self-concept is influenced by one's relative standing among fellow students, these girls demonstrated the "big-fish-in-the-little-pond" phenomenon (Marsh, 1987; Marsh et al., 2008). They may have believed that they were not meeting their own high expectations in a school context where the "average" overall student body performed at levels higher than "average" for national norms (Campbell et al., 2002).

A second location-specific consideration is that the participants' schools were located in a district that is known for having the highest performing students and the largest Black-White achievement gap in the state. These messages contribute to the miseducation of African American students (Cokley, 2006). Because African American achievement was often described in the context of how African American students performed in relation to

White students, we expected that both African American boys and girls would show signs of disidentification.

In addition, within the context of this highly competitive school, African American students may not have felt challenged by their predominantly White teaching staff. When the students were young adults, an African American scholar conducted interviews with several students on their perceptions of schools. One male stated that he believed that White teachers should "push African American students more," because, to him, many African Americans lacked the motivation to excel (Peart & Campbell, 1999).

Additionally, it may be that these African American students have less faith in the ultimate value of academic excellence. As argued by Mickelson (1990), the reality that African Americans, especially those from economically disadvantaged backgrounds, experience is that their opportunities for success in the working world are constrained by their race irrespective of education. Finding full-blown disidentification in this sample of teenagers is consistent with Mickelson's argument on the paradox of African Americans placing high value on the abstract idea of education, while also believing that education might not lead them to a better life. Thus, although there were no gender differences for full-blown disidentification in these students at age 15, there is evidence of disidentification.

The current study builds on a previous study of academic identification in the same sample of participants, at 8 and 12 years of age. If the disidentification hypothesis had been supported, initially there should have been no gender differences; however, later in adolescence, gender differences should have developed. In the previous study (McMillian et al., 2011), there were no gender differences in elementary and early adolescent achievement. Unexpectedly, the current study found that gender differences in achievement had not developed by age 15. In the earlier study, there was evidence for academic investment (specifically, reading achievement in 8-year-olds predicted self-rated scholastic competence in 12-year-olds). In the current study, there was no evidence for academic investment (i.e., 12-year-olds' achievement in mathematics and reading did not significantly predict 15-year-olds' scholastic competence), although scholastic competence at age 12 did predict scholastic competence at 15. In the previous study, boys and girls appeared to value academics equally (i.e., scholastic competence in 8-year-olds was equally related to the global self-esteem of 12-year-olds). In the current study, although scholastic competence was related to global self-esteem for both boys and girls, the relationship was marginally stronger in girls. The previous study found that boys and girls both accounted for academic achievements in mathematics and reading when rating global self-esteem; by age 15, the model for neither subject was significant.

There are several possible reasons why this study's findings were not consistent with previous research. First, it is unique in that the data were collected longitudinally on a small sample of students who were younger at both the earliest and the latest data point than was typical of much of the earlier work. Many prior academic identification studies were conducted with very different samples. For example, Osborne's (1995, 1997) studies were conducted using nationally representative data sets, and a more recent study (Cokley et al., 2012) was conducted in the urban Southwest. The present study used a smaller data set that consisted of participants in a southeastern college town. The current sample of students were all from low-income families whose circumstances qualified them for a randomized early childhood intervention trial. A more heterogeneous sample of African Americans might have generated data with more variance and resulted in stronger relationships among the measures. Another reason that these findings might differ is that many previous studies used grades to measure achievement (Cokley, 2014), which differs from an individually administered standardized academic test with no feedback, as in the current study. Previous research (e.g., Cohen, Steele, & Ross, 1999) suggests that academic feedback affects a precursor (stereotype threat) to academic identification (Cokley, 2014). Knowing that other students are aware of one's relative academic standing must have more personal meaning to a student than the anonymous score that was earned as part of a routine (by that point in their lives) assessment that would not be made public to his or her schoolmates.

Limitations

One of the limitations of this study was that it was based on a preexisting data set from participants in a longitudinal study of an early childhood educational intervention that began during participants' infancy. The measures that were collected during the school-age years were not specifically chosen for examining discounting, devaluing, and full-blown disidentification. Thus, we did not include measures that may have illuminated the questions with greater clarity. In addition, not all those whose data were used in the previous disidentification study (McMillian et al., 2011) had midadolescent self-concept measures. Thus, the current investigators were limited to the available data. Another limitation is that this study focused on variables at the individual level only, even though disidentification researchers emphasize that academic disidentification results from an awareness of societal stereotypes about academic ability. Furthermore, this data set was small and consisted of children born in the 1970s who were living in or near a small southern university town. Consequently, these findings may not apply to children who were born today or live in other settings.

A final caveat is that the OLS predictive findings are dependent on the set of predictors. Different models can indicate different relationships as shown by the results of a previous investigation on predictors of academic and global self-esteem in the full Abecedarian sample, which included data from all living and eligible Abecedarian participants. In that analysis, measures of parental attitudes and early and later family environments were used in addition to early childhood treatment to predict global self-esteem at age 15. In addition, the investigators controlled for Harter's (2012) adolescent scales for athletic and social self-esteem. The results indicated that scholastic competence contributed to global self-esteem (Campbell et al., 2002). However, the results of that study are congruent with the present one in that there were no gender differences. Neither the current study nor that of Campbell et al. (2002) found significant gender differences when predicting global self-esteem from academic performance.

Future Studies

In summary, this study builds on a previous study that was conducted with the same participants as elementary school–aged children and early adolescents. The results indicated that there was limited evidence for gender differences in academic identification by midadolescence. The current study found that there were no gender differences in achievement or discounting. Girls valued academics more than boys, and achievement was not significantly related to self-esteem. However, the current definitions of discounting, devaluing, and full-blown disidentification may need to be expanded. It is interesting that when the discounting model was run substituting current academic performance, as opposed to earlier academic performance, as the predictor of current scholastic self-concept, concurrent academic skills in mathematics did predict scholastic self-esteem. This does not indicate a total disconnect between one's academic skills and one's awareness of them. Future studies should focus on how to interpret the lack of an apparent relationship between self-esteem and achievement because researchers could interpret these findings as antiintellectualism, even though there could be other reasons for this relationship (Cokley, 2014). Future studies should also focus on connecting the findings of this study to other studies. For example, the current study found that age 15 mathematics achievement predicted age 15 academic self-concept but not global self-esteem. Future research should focus on educational factors—that is, practices that increase student scholastic self-concept, provide students with opportunities and resources, encourage student belonging, and increase student interest (e.g., project-based learning; see Tung et al., 2015) that are related to patterns of academic identification, especially because several findings from this study were not consistent with other research (Lawson &

Masyn, 2015). Future studies should also include how measures of societal stereotypes (e.g., Amber Hewitt's *Stereotypical Roles of Black Young Men Scale*) relate to academic identification. Finally, future studies could challenge whether research should focus on contextual factors that promote gender parity rather than gender differences.

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Declaration of Conflicting Interests

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