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# Psychometric Properties of Scores on Three Black Racial Identity Scales

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*In this study, we examined the internal consistency and the structural validity of scores on the African Self-Consciousness Scale (ASCS), the Multidimensional Inventory of Black Identity (MIBI), and the Cross Racial Identity Scale (CRIS). Participants consisted of 225 African American college students—75 attending predominantly White institutions (PWIs) and 150 attending historically Black colleges and universities (HBCUs). Internal consistency estimates were above .60 for scores on one ASCS subscale, six MIBI subscales, and six CRIS subscales. Exploratory factor analytic procedures supported a two-factor structure for ASCS scores, a five-factor structure for MIBI scores, and a six-factor structure for CRIS scores. Implications for Black racial identity and scale development are discussed.*

**Keywords:** Black racial identity; African Self-Consciousness Scale; Multidimensional Inventory of Black Identity; Cross Racial Identity Scale; validity

The construct of racial identity has been and continues to be of tremendous interest to researchers in counseling, ethnic minority, personality, developmental, and social psychology. In a content analysis of articles published in the *Journal of Black Psychology*, Cokley, Caldwell, Miller, and Muhammad (2001) found that racial identity has been the topic most frequently published about in the 15-year period from 1985 to 1999. Despite the intense focus on the construct of racial identity in applied and basic research contexts, there is little consensus on the specific role that racial identity plays in the psychological functioning of Blacks. For example, Ogbu (2003) argued

that identifying with being Black places a student at risk for academic disengagement. In contrast, Spencer, Noll, Stotlzfus, and Harpalani (2001) found that students having positive attitudes toward being Black had higher grade point averages (GPAs) than students whose attitudes were more Eurocentric. Researchers have also found that there are generalizable clusters of Black racial identity attitudes and that academic context or type of school setting may be related to racial identity attitudes in Black students (Worrell, Vandiver, Schaefer, Cross, & Fhagen-Smith, 2006). Overall, researchers have reported mixed results for racial identity as a buffer against race-related stress or

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discrimination (e.g., Seaton, 2004; Sellers, Caldwell, Schmeelk-Cone, & Zimmerman, 2003).

One possible explanation for the conflicting findings about how racial identity functions in African American people is the lack of an integrative theory of Black racial identity (Marks, Settles, Cooke, Morgan, & Sellers, 2004). According to Marks et al. (2004), until there is an overarching theory with a consistent definition of racial identity, empirical results will continue to be contradictory. A related problem is the limited validity evidence for the scores on instruments that operationalize Black racial identity constructs. In 1992, Sabnani and Ponterotto critiqued the instruments used with minority populations in the counseling literature. They found little to no evidence of construct validity for instruments' scores, an overreliance on college samples in scale development, and a lack of socioeconomic and geographical diversity in research samples. In 2004, Worrell, Vandiver, Cross, and Phagen-Smith highlighted the importance of examining instruments' scores in multiple samples and basing decisions about scores on the preponderance of empirical evidence (Benson, 1998), a concern that is often ignored. These criticisms still apply to racial identity instruments today.

In this study, we addressed Sabnani and Ponterotto's (1992) first concern by investigating the reliability and structural validity of scores on three measures of Black racial identity attitudes in the extant research literature: the African Self-Consciousness Scale (ASCS; Baldwin & Bell, 1982, 1985), the Multidimensional Inventory of Black Identity (MIBI; Sellers, Rowley, Chavous, Shelton, & Smith, 1997; Sellers, Smith, Shelton, Rowley, & Chavous, 1998), and the Cross Racial Identity Scale (CRIS; Vandiver et al., 2000; Worrell, Vandiver, & Cross, 2004). The ASCS is a multidimensional scale based on an Africentric view of racial identity (Burlaw & Smith, 1991; Marks et al., 2004). ASCS subscales assess different aspects of Afrocentricity, a construct that is represented by only one subscale on the other instruments. The MIBI and the CRIS are also multidimensional scales, but these instruments also assess racial identity attitudes beyond Afrocentricity (e.g., assimilation, multiculturalism).

For researchers familiar with the literature on Black racial identity, there is an obvious omission in the scales being studied. None of the versions of the Racial Identity Attitude Scale (RIAS; Helms & Parham, 1990, 1996; Parham & Helms, 1981) is included in this study. Although the RIAS is the most frequently cited instrument in the racial identity literature, unlike the ASCS, the CRIS, and the MIBI, there is extensive literature on the psychometric properties of RIAS scores (e.g., Burlaw & Smith, 1991; Chappell, 1995; Fischer, Tokar, & Serna, 1998; Helms, 1990; Helms & Parham, 1996; Lemon & Waehler, 1996; Morrow, 1998;

Ponterotto & Wise, 1987; Sabnani & Ponterotto, 1992; Tokar & Fischer, 1998; Yanico, Swanson, & Tokar, 1994) that provides definitive conclusions about the instrument's strengths and limitations. Moreover, the RIAS is based on the original nigrescence model (Cross, 1971), which differs substantially from the expanded model (Cross & Vandiver, 2001; Worrell, Cross, & Vandiver, 2001) on which the CRIS is based, and which is examined in this study.

Despite the prevalence of Black racial identity attitudes in the research literature, the usefulness of the inferences that are drawn in studies, including this construct, is limited by the reliability and validity of scores on the instruments being used (Thompson, 2003). Thus, assessing the psychometric properties of ASCS, CRIS, and MIBI scores will help determine their utility in clarifying the role of racial identity in the psychological functioning of African Americans and their potential utility for designing interventions for African American populations in clinical and educational settings. To provide the context for our study, we begin with a brief overview of the conceptual framework underlying each instrument and the existing psychometric support for the instruments' scores.

## BALDWIN'S AFRICENTRIC THEORY

In 1981, Baldwin (aka Kobi Kambon) developed a Black personality theory grounded in an Africentric paradigm. Baldwin's Africentric theory explains the effects of psychological Blackness on the behavior of individuals of African descent (Baldwin, 1990; Baldwin & Bell, 1985; Myers & Thompson, 1994). According to Baldwin (1990, 1996), psychological Blackness and its influence on behavior involves the relationship between two concepts, African Self-Extension Orientation and African Self-Consciousness. An African Self-Extension Orientation is described as a psychological and spiritual predisposition to an Afrocentric or pro-African worldview (i.e., living by Afrocentric principles such as communality and interdependence). African self-consciousness attitudes are the overt expression of the Self-Extension Orientation (see Baldwin, 1990, for a more detailed explanation).

Baldwin (1987, 1996; Baldwin & Bell, 1982, 1985) indicated that African self-consciousness has four dimensions. The first involves the recognition of oneself as African, biologically, psychologically, and culturally, and the acceptance of an African worldview. The second dimension involves recognizing African survival and proactive development as one's first priority. The third dimension involves respect and active support for all things African, including African life and African institutions. Finally, the fourth dimension focuses on one's conduct toward

non- and anti-African institutions and peoples. These dimensions determine the patterns of normal Black psychological functioning.

### The ASCS

Baldwin and Bell (1982, 1985) developed the 42-item ASCS to measure the four African self-consciousness dimensions. Although all four dimensions are represented on the ASCS, they reported a 6-week test-retest reliability estimate of .90 for the total ASCS score in a sample of 109 Black college students and did not examine the scale's structure; rather, they suggested using "either a total score (sum) or the mean total score (sum of scores/number of items)" (Baldwin & Bell, 1982, p. 2).

To date, there is limited reliability evidence for scores on the ASCS dimensions. In 1994, Stokes, Murray, Peacock, and Kaiser reported an internal consistency estimate (Cronbach's alpha) of .78 for the total ASCS score and estimates for four factors in a sample of Blacks aged 13 to 70. The reliability estimates were .77 for Personal Identification with the Group, .61 for Self-Reinforcement Against Racism, .62 for Racial and Cultural Awareness, and .62 for Value for African Culture. More recently, Pierre and Mahalik (2005) reported internal consistency estimates for these factors of .76, .60, .24, and .10, respectively, in a sample of Black males aged 18 to 25. Thus, in the studies to date, only scores on the total ASCS and the first factor have reliability estimates consistently in the moderate-to-high range.

*Structural validity evidence.* The factor structure of ASCS scores has been examined in two studies, Stokes et al. (1994) and Myers and Thompson (1994). The participants in the Stokes et al. study consisted of 147 African Americans aged 13 to 70. Stokes et al. used principal axis extraction with an oblique rotation, and on the basis of the scree test, extracted four factors. Using .30 to establish item salience with a factor, they concluded that a "four-factor solution was easily interpretable" (p. 68). Factor I had 18 salient items with coefficients ranging from .30 to .62 ( $Mdn = .40$ ). Factors II through IV had nine, seven, and six salient items with median coefficients of .38, .40, and .48, respectively. Two items each on Factors III and IV were complex (i.e., they loaded on more than one factor). However, as noted above, salient coefficients on factors were generally low, and using a more conservative criterion of .40 for salience reduces the number of salient items to ten, four, four, and three on the four factors.

In another study with a sample of 150 African American adults, Myers and Thompson (1994) reported finding seven

ASCS factors, four in keeping with Africentric theory's (Baldwin, 1987; Baldwin & Bell, 1985) dimensions and three additional factors. These authors did not delineate the type of extraction method employed and used the eigenvalue rule to determine the number of factors to retain. Myers and Thompson also used .30 to determine item salience and reported that their seven-factor structure accounted for 78% of the variance in ASCS scores. However, they did not provide the coefficients for items on the factors or the reliability estimates for scores; thus, an examination of their solution is not possible. In sum, studies to date have not yielded strong evidence for a four-factor structure on the ASCS.

### MULTIDIMENSIONAL MODEL OF RACIAL IDENTITY (MMRI)

The MMRI (Sellers et al., 1997, 1998) is a theory of Black racial identity based on individuals' attitudes, behaviors, and self-perceptions. Sellers et al. identified four core dimensions of racial identity: Salience, Centrality, Ideology, and Regard. Salience refers to the degree to which race is important to a person's self-definition and is situation specific—that is, the context in which the individual is operating determines whether race is more or less salient. Unlike Salience, Centrality is a stable construct and refers to how individuals normally define themselves across situations. Centrality involves the perceived importance of race in one's self-concept and determines the priority race is given in defining the self.

Ideology refers to the collective attitudes, beliefs, and opinions that individuals have about African Americans (Sellers et al., 1997). The ideologies delineated in the MMRI include Assimilation, Humanist, Oppressed Minority, and Nationalist. An Assimilation ideology highlights the commonalities between African Americans and the broader American society, whereas the Humanist ideology highlights the commonalities among all human beings. The Oppressed Minority perspective underscores the commonalities between African Americans and other oppressed minority groups (e.g., Latinos, Native Americans), and the Nationalist ideology underscores the uniqueness of being an African American (Sellers et al., 1997, 1998). Finally, the Regard dimension refers to one's positive or negative evaluation of being African American and occurs at two levels, private and public. Private Regard, also described as racial self-esteem, is an indication of how a person feels about being Black and being a member of the Black race. Public Regard is an individual's perception of how members of the broader society view African Americans (Sellers et al., 1998).

## MIBI

The MIBI (Sellers et al., 1997, 1998) is a 56-item measure developed to operationalize three of the four dimensions from the MMRI: Centrality, Ideology, and Regard. Salience is not included in the MIBI, given its dependence on context. The Centrality dimension consists of a single eight-item scale; Ideology is made up of four nine-item scales representing Assimilation, Humanist, Oppressed Minority, and Nationalist; and the Regard dimension consists of two six-item subscales representing Public and Private Regard.

Moderate-to-high internal consistency estimates have been reported for MIBI scores. Sellers et al. (1997) reported Cronbach's alphas for scores ranging from .55 to .79 in samples of students from both predominantly White institutions (PWIs) and historically Black colleges and universities (HBCUs). Vandiver, Cross, Worrell, and Fhagen-Smith (2002) reported similar internal consistency estimates for MIBI scores (.58-.78), and Cokley and Helm (2001; .67-.85) and Helm (2002; .70-.82) reported slightly higher estimates.

*Structural validity evidence.* In the scale development study introducing the MIBI, Sellers et al. (1997) indicated that the correlation matrix of the initial 71 items making up the seven factors was not factorable. Thus, they analyzed the three dimensions separately. Using .30 as the criterion for item salience, they indicated that Centrality was best represented by one factor, Regard by two factors, and Ideology by four factors. However, only the coefficients for the nine items retained on the four Ideology factors were presented (see Sellers et al., 1997). An examination of this factor structure raises several concerns: 24 of the 36 items had salient coefficients on the second factor (Humanist), 23 items had complex loadings, and five Assimilation items had coefficients greater than .40 on the Humanist factor, whereas only four Assimilation items have coefficients greater than .40 on the Assimilation factor. In addition, Sellers et al. reported that the Public Regard factor had only two salient coefficients. In 1998, Sellers and his colleagues indicated that a revision of the MIBI had resulted in six-item Public and Private Regard scales, which were statistically distinguishable from Centrality, resulting in the current 56-item instrument. However, as in the 1997 study, the item coefficients on the factors were not presented.

Additional studies examining the factor structure of the MIBI have found little support for the proposed structure of MIBI scores. In 2001, Cokley and Helm examined MIBI scores in 279 African American undergraduates using confirmatory factor analytic procedures. They

indicated that "the fit indexes for the final seven-factor model were marginal at best and poor at worst," raising questions about the adequacy of the MIBI in operationalizing the MMRI (p. 91). Finally, in a dissertation study in 2002 with a sample of 388 African Americans (88% college students), Helm reported support for a seven-factor structure based on exploratory factor analysis accounting for 37% of the variance in MIBI scores. The Public Regard, Private Regard, Oppressed Minority, and Assimilation subscales emerged relatively intact. However, the other three factors consisted of combinations of items from different subscales and were given new names. A factor made up of Humanist and Nationalist items—with the latter loading negatively—was called Integration versus Separation/Cultural Mistrust. The second combination factor called Pro-Black Self Empowerment Ideology was made up of Centrality and Nationalist items, and the third factor was made up of Humanist items, Centrality items loading negatively, and one Assimilation item. This factor was called Individual/ Humanist Identity versus Black Racial Identity.

## EXPANDED NIGRESCENCE THEORY (NT-E)

The expanded nigrescence model (Cross & Vandiver, 2001) is the most recent incarnation of Cross' (1971, 1991) nigrescence theory. In NT-E, Black racial identity is defined as a multidimensional set of attitudes which fall under three different worldviews: Preencounter, Immersion–Emersion, and Internalization. Preencounter attitudes afford low or negative salience to race and include Assimilation (endorsing being American more than African American), Miseducation (accepting negative societal stereotypes about African Americans), and Self-Hatred (being unhappy that one is African American). Immersion–Emersion attitudes develop in response to the barriers that being Black imposes on individuals in American society, and these attitudes are emotionally laden. The two racial identity attitudes in this worldview are Intense Black Involvement (uncritical and intense support for everything considered Black or African American) and Anti-White (strong negative attitudes toward majority group members).

All the Internalization attitudes reflect acceptance of and positive attitudes toward being Black. The racial identity attitudes in this worldview include Afrocentricity (accepting and living by Afrocentric principles), Biculturalist (privileging one's Black identity and *one* other identity; e.g., being Black and a woman), Multiculturalist Racial (accepting Black culture and cultures of other oppressed groups like Latinos and American Indians), and Multiculturalist Inclusive (accepting and respecting Black culture

and all other cultural groups, including Whites and gays and lesbians). Cross and Vandiver (2001) theorized that personal identity variables, such as self-esteem, are not related to nigrescence identities, which are measures of reference group orientation. In other words, the predominant racial identity attitudes that a person holds are generally not related to their general personality or self-concept, except in the case of Preencounter Self-Hatred, which combines personal and social identity attitudes (Vandiver et al., 2002).

## CRIS

The CRIS (Vandiver et al., 2000) is a 30-item instrument that measures six of the nine nigrescence attitudes, including Preencounter Assimilation, Preencounter Miseducation, Preencounter Self-Hatred, Immersion–Emersion Anti-White, Internalization Afrocentricity, and Internalization Multiculturalist Inclusive (Cross & Vandiver, 2001; Vandiver et al., 2002). Vandiver et al. (2002) indicated that it was not feasible to measure biculturalist attitudes and that subscales operationalizing Intense Black Involvement and Multiculturalist Racial are in development.

Internal consistency estimates for CRIS scores have been reported in several studies. Vandiver et al. (2002) reported Cronbach's alpha estimates ranging from .78 to .89 for a sample of 309 college students, and Worrell, Vandiver, Cross, et al. (2004) reported estimates ranging from .70 to .85 in a sample of 105 African American adults ( $M$  age = 34). Estimates in other college samples (Cokley, 2002; Helm, 2002; White, 2002; Wright, 2003) have ranged from .74 to .89, and estimates in a sample of 143 school-age adolescents ( $M$  age = 14) ranged from .65 to .88 (Gardner-Kitt & Worrell, 2007).

*Structural validity evidence.* To date, the structural validity evidence for CRIS scores has been adequate. Using both exploratory and confirmatory factor analyses with college samples, Vandiver et al. (2002) reported support for a six-factor structure consistent with NT-E for CRIS scores. Additional support for the six-factor structure has been reported in another college sample (Helm, 2002), in a sample of adults (Worrell, Vandiver, Cross, et al., 2004), and in a sample of school-age adolescents (Gardner-Kitt & Worrell, 2007).

## THE PRESENT STUDY

Africentric theory (Baldwin, 1981, 1987, 1990; Baldwin & Bell, 1985), the MMRI (Sellers et al., 1997,

1998), and NT-E (Cross & Vandiver, 2001) represent three prominent theories of Black racial identity theories in the literature. However, there have been limited studies of the psychometric properties of scores on the instruments that operationalize these theoretical perspectives. There have been only two structural validity studies of ASCS scores (Myers & Thompson, 1994; Stokes et al., 1994), three of MIBI scores (Cokley & Helm, 2001; Helm, 2002; Sellers et al., 1997), and four of CRIS scores (Gardner-Kitt & Worrell, 2007; Helm, 2002; Vandiver et al., 2002; Worrell, Vandiver, Cross, et al., 2004), and the findings on ASCS and MIBI scores have been mixed. Moreover, no researcher has examined the scores on these three instruments in the same sample.

Given calls for more evidence regarding the reliability and validity of scores on racial identity instruments (Sabnani & Ponterotto, 1992; Worrell et al., 2001), this study was conducted to examine the psychometric properties of scores obtained on the ASCS, MIBI, and CRIS provided by individuals from the same sample. We examined three research questions: (a) What are the internal consistency estimates of scores on subscales of the ASCS, the MIBI, and the CRIS, as defined by their theoretical models? (b) What are the intercorrelations among the subscales on the three instruments? and (c) What is the factor structure of scores on the three instruments?

## METHOD

### Participants

Participants were 225 African American undergraduate students from three PWIs ( $n = 75$ ) and two HBCUs ( $n = 150$ ) in Virginia. The sample included 66 males and 158 females aged 17 to 25 ( $M$  age = 19.4,  $SD$  age = 1.38). One participant did not report gender and one did not report age. Fifty-four percent of the sample described themselves as African American and 26% described themselves as Black. The other 20% used a variety of descriptors including African (4.5%), Caribbean Black (4.9%), and Mixed (4.9%), and several students did not indicate ethnicity. The sample included 74 freshmen, 45 sophomores, 54 juniors, and 18 seniors. Psychology and criminal justice were the most common majors.

Most students described their socioeconomic status as either middle (53.3%) or working class (24.9%), with smaller numbers indicating that they were upper-middle class (14.2%), wealthy (3.1%), or poor (3.1%). Three participants did not respond to this question. The majority of students reported being raised in mixed (41.8%) or mostly Black (38.7%) communities. Thirty-six HBCU

and four PWI students did not report GPAs. Students for whom GPAs were available reported a mean GPA of 2.87 ( $SD = .48$ ). PWI and HBCU students did not differ significantly on GPA,  $t(183) = -1.06, p > .05$ , but students attending PWIs ( $M = 19.79, SD = 1.40$ ) were about half-a-year older than students attending HBCUs ( $M = 19.27, SD = 1.34$ ),  $t(222) = -2.69, p < .05$ .

## Instruments

**ASCS.** The ASCS (Baldwin, 1996; Baldwin & Bell, 1982, 1985; Baldwin, Duncan, & Bell, 1987) is a 42-item instrument designed to assess the level of identification with a Black personality. The ASCS items address the four dimensions of Baldwin's Africentric theory and are drawn from six domains: education, family, religion, cultural activities, interpersonal relations, and political orientation. Each item is rated on an 8-point Likert-type scale ranging from 1-2 (*strongly disagree*) to 7-8 (*strongly agree*). Odd-numbered items are negatively worded and must be reverse-coded for scoring. Baldwin and Bell (1985) reported a 6-week test-retest reliability coefficient of .90 for the total ASCS score, and internal consistency estimates for the four factors identified by Stokes et al. (1994) have ranged from .10 to .76 (see also Pierre & Mahalik, 2005). A sample item from each of the four subscales is presented in Table 1.

Convergent validity for the ASCS total score has been established with instructor ratings of student behaviors that reflect African self-consciousness (Baldwin & Bell, 1985), Black Personality Questionnaire scores (Baldwin & Bell, 1985), and Nationalist scores on the MIBI (Sellers et al., 1997). Stokes et al. (1994) also reported that individuals who labeled themselves African American had higher scores on the Personal Identification subscale than individuals who labeled themselves Black.

**MIBI.** The MIBI (Sellers et al., 1997, 1998) is a 56-item instrument assessing seven racial identity attitudes based on the MMRI: Centrality (eight items), Private Regard (six items), Public Regard (six items), Assimilation (nine items), Humanist (nine items), Oppressed Minority (nine items), and Nationalist (nine items). Several items are negatively worded and have to be reverse-scored. Table 1 contains sample items from each subscale. MIBI items are rated on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), with 4 representing a response of *neutral* or *unsure*. Reliability estimates for subscale scores have ranged from .60 to .79. However, evidence for the seven-factor structure is mixed (see Cokley & Helm, 2001; Helm, 2002; Sellers et al., 1997).

There has been ample convergent validity evidence for MIBI scores. Sellers et al. (1997) reported that Blacks with a Black best friend obtained significantly higher Centrality, Oppressed Minority, and Nationalist scores, and significantly lower Assimilation and Humanist scores than Blacks whose best friend was not Black. Also, Blacks who had taken a Black Studies course had significantly higher Centrality and Nationalist scores than Blacks who had not taken such a course. Finally, both Centrality and Nationalist scores had moderate negative correlations with Contact with White scores and positive correlations with Contact with Black scores (Sellers et al., 1997).

**CRIS.** The CRIS (Vandiver et al., 2000; Worrell et al., 2004) is a 30-item instrument based on the NT-E model (Cross & Vandiver, 2001). The CRIS has six subscales of five items each: Preencounter Assimilation, Preencounter Miseducation, Preencounter Self-Hatred, Immersion-Emersion Anti-White, Internalization Afrocentricity, and Internalization Multicultural Inclusive. A sample item from each subscale is presented in Table 1. Items are rated on a 7-point Likert-type scale with verbal and numerical anchors ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), with 4 representing *neither agree nor disagree*. Reliability estimates for CRIS scores have ranged from .65 to .90, and the six-factor structure has been supported in samples of adolescents (Gardner-Kitt & Worrell, 2007), emerging adults (Helm, 2002; Vandiver et al., 2002), and adults (Worrell et al., 2004).

Convergent validity was established with MIBI subscale scores (Vandiver et al., 2002). The Assimilation scores on both instruments were moderately correlated. Nationalist scores on the MIBI were moderately correlated with anti-White and afrocentricity scores on the CRIS, and Centrality had a negative correlation with Assimilation on the CRIS. CRIS scores are not significantly correlated with social desirability or Big Five personality factors (Vandiver et al., 2002).

## Procedure

Participants were recruited in several ways. Students from one HBCU were solicited from the Introduction to Psychology class. These students received extra credit for participating in the study. At the other HBCU, advertisements were posted in the Psychology department and on campus, and students who participated received \$10 as compensation. At one PWI, students were recruited through a Scholars program and the Office of Multicultural Student Affairs. Participants from this PWI were either

**TABLE 1**  
**Sample Items From Scales**

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African Self-Consciousness Scale (ASCS)	
Personal Identification with the Group	<i>Black children should be taught they are African at an early age.</i>
Self-Reinforcement Against Racism	<i>Blacks who trust Whites in general are basically very intelligent people (Reversed-scored).</i>
Racial and Cultural Awareness	<i>It is good for Blacks in American to wear traditional African-type clothing and hairstyles if they desire to do so.</i>
Value for African Culture	<i>There is no such thing as African culture among Blacks in America (Reversed-scored).</i>
Multidimensional Inventory of Black Identity (MIBI)	
Centrality	<i>In general, being Black is an important part of my self-image.</i>
Private Regard	<i>I am proud to be Black.</i>
Public Regard	<i>In general, others respect Black people.</i>
Assimilation	<i>Blacks should strive to be full members of the American political system.</i>
Humanist	<i>People regardless of their race have strengths and limitations.</i>
Oppressed Minority	<i>Blacks should try to become friends with people from other oppressed groups.</i>
Nationalist	<i>Blacks would be better off if they adopted Afrocentric values.</i>
Cross Racial Identity Scale (CRIS)	
Preencounter Assimilation	<i>I am not so much a member of a racial group, as I am an American.</i>
Preencounter Miseducation	<i>Blacks place more emphasis on having a good time than on hard work.</i>
Preencounter Self-Hatred	<i>Privately, I sometimes have negative feelings about being Black.</i>
Immersion–Emersion Anti-White	<i>I have a strong feeling of hatred and disdain for all White people.</i>
Internalization Afrocentricity	<i>I see and think about things from an Afrocentric perspective.</i>
Internalization Multiculturalist Inclusive	<i>As a Multiculturalist, I am connected to many groups (Hispanics, Asian Americans, Whites, Jews, gays &amp; lesbians, etc.).</i>

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entered into a drawing to win one of two prizes of \$50 or compensated with \$10. Participants from the other two PWIs were mailed the surveys through an ethnic organization. They were compensated with \$10 on receipt of their packets via U.S. mail.

All participants received a 9 × 12 manila envelope containing a consent form that explained the purpose of the study, the ASCS, the MIBI, and the CRIS. The racial identity measures were counterbalanced to reduce order effects. Participants at the HBCUs were given a week to complete and return the envelope containing the questionnaires to their instructors, from whom the researcher collected the materials. Students attending PWIs returned their research packets to a location in the Office of

Multicultural Student Affairs, the primary author's dorm room, or via campus or U.S. mail.

## RESULTS

### Preliminary Analyses

An inspection of the racial identity items indicated that the number of missing data points was low and randomly distributed. The greatest number of missing responses for any individual item was seven (3%) on two of the ASCS items, five (2.2%) on one MIBI item, and three (1.3%) on two CRIS items. We used the mean substitution method to

**TABLE 2**  
**Major Descriptive Statistics for the Three Racial Identity Scales**

	<i>Total Sample (N = 225)</i>			<i>HBCU (n = 150)</i>			<i>PWI (n = 75)</i>		
	M	SD	$\alpha$	M	SD	$\alpha$	M	SD	$\alpha$
ASCS									
PIG	4.43	0.83	.74	4.54	0.82	.72	4.22	0.81	.76
SRR	5.12	0.63	.37	5.12	0.62	.32	5.11	0.66	.50
RCA	4.66	0.66	.08	4.65	0.64	.00	4.69	0.69	.37
VAC	4.90	0.98	.42	5.06	1.01	.44	4.60	0.84	.27
MIBI									
CEN	5.04	0.89	.66	5.05	0.95	.68	5.03	0.76	.65
PRV	6.42	0.69	.78	6.41	0.73	.77	6.45	0.60	.81
PUB	3.77	0.95	.73	3.85	0.89	.64	3.62	1.05	.87
ASM	5.26	0.69	.59	5.17	0.73	.59	5.44	0.58	.55
HUM	5.20	0.73	.63	5.19	0.78	.68	5.23	0.62	.51
MIN	4.82	0.82	.69	4.79	0.81	.67	4.87	0.83	.76
NAT	4.00	0.86	.72	4.19	0.83	.68	3.63	0.79	.76
CRIS									
PA	3.42	1.37	.80	3.59	1.36	.78	3.08	1.34	.86
PM	3.88	1.34	.80	4.24	1.29	.77	3.18	1.16	.77
PSH	2.03	1.19	.82	1.90	1.13	.79	2.27	1.28	.88
IEAW	1.59	0.89	.84	1.67	0.96	.84	1.44	0.72	.86
IA	3.15	1.17	.82	3.35	1.15	.78	2.75	1.11	.87
IMCI	5.49	1.13	.77	5.36	1.19	.76	5.75	0.95	.78

NOTE: HBCU = historically Black college or university; PWI = predominantly White institution; ASCS = African Self-Consciousness Scale; PIG = Personal Identification with the Group; SRR = Self-Reinforcement Against Racism; RCA = Racial and Cultural Awareness; VAC = Value for African Culture; MIBI = Multidimensional Inventory of Black Identity; CEN = Centrality; PRV = Private Regard; PUB = Public Regard; ASM = Assimilation; HUM = Humanist; MIN = Oppressed Minority; NAT = Nationalist; CRIS = Cross Racial Identity Scale; PA = Preencounter Assimilation; PM = Preencounter Miseducation; PSH = Preencounter Self-Hatred; IEAW = Immersion–Emersion Anti-White; IA = Internalization Afrocentricity; IMCI = Internalization Multiculturalist Inclusive.

replace missing data on these items. Although the mean substitution procedure is easy to do and generally results in an internally consistent set of results, a major concern about this procedure is that it reduces the variance of the distribution of the items (Newton & Rudestam, 1999). However, the small number of missing responses resulted in standard deviation decreases of less than .03 in any individual item. ASCS item means ranged from 2.5 to 6.2, and the distributions were neither skewed nor kurtotic. MIBI item means ranged from 2.5 to 6.6, with one item having a skew greater than 3, and four items having kurtosis scores greater than 3. CRIS item scores ranged from 1.8 to 5.8, with five items having kurtosis scores greater than 3.0. Subscale means are presented for the PWI and HBCU students, as well as the whole sample in Table 2. Only the Private Regard and Anti-White subscales had elevated kurtosis levels ( $\approx 5.0$ ).

### Reliability Estimates

Reliability estimates based on Cronbach's alpha were calculated for all subscales based on the items that were previously assigned to those subscales. These

values are reported in Table 2. As can be seen in Table 2, on the ASCS, only Personal Identification with the Group subscale scores had a reliability estimate in the .70 to .80 range. The other three subscales had estimates ranging from .00 to .50, indicating that at least half of the score variance on these subscales was error, rendering any inferences drawn from further analyses with these subscales meaningless (Thompson, 2003). Estimates for MIBI subscale scores ranged from .51 to .87, and estimates for CRIS subscale scores ranged from .76 to .88.

### Subscale Intercorrelations

Only correlations greater than .32 (i.e., indicating at least 10% shared variance) and significant at the .001 level (to control for Type I error) were interpreted. Sixteen of the ninety-one correlations met both criteria (see Table 3). The highest correlations were for Personal Identification with the Group (ASCS) scores with Centrality (MIBI), Nationalist (MIBI), and Afrocentricity (CRIS) scores. Nationalist scores were also positively correlated to Centrality, Anti-White (CRIS), and Afrocentricity scores, and negatively

**TABLE 3**  
**Intercorrelations Among Subscales From the ASCS, MIBI, and CRIS<sup>a</sup>**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. PIG	—													
2. Centrality	.46*	—												
3. Private regard	.18	.30	—											
4. Public regard	-.14	-.19	.08	—										
5. Assimilation	-.11	.19	.26	.06	—									
6. Humanist	-.36*	-.16	.13	.13	.45*	—								
7. Opp. minority	.14	.16	.18	.01	.36*	.24	—							
8. Nationalist	.70*	.33*	.01	-.19	-.18	-.36*	-.03	—						
9. P. assimilation	-.36*	-.27	-.17	.30	.12	.36*	-.02	-.30	—					
10. P. miseducation	.23	.13	-.04	.01	-.01	-.03	-.01	.25	.17	—				
11. P. self-hatred	-.04	-.08	-.41*	-.09	.01	-.02	-.03	.02	.16	.07	—			
12. IEAW	.33*	.10	-.18	-.18	-.30	-.36*	-.17	.45*	-.09	.10	.24	—		
13. IA	.55*	.25	.01	-.00	-.07	-.25	-.01	.57*	-.12	.31	.05	.31	—	
14. IMCI	-.18	-.02	.13	.08	.27	.43*	.23	-.30	.20	.04	.07	-.31	-.13	—

NOTE: ASCS = African Self-Consciousness Scale; MIBI = Multidimensional Inventory of Black Identity; CRIS = Cross Racial Identity Scale; PIG = Personal Identification with the Group; Opp = Oppressed; P = Preencounter; IEAW = Immersion–Emersion Anti-White; IA = Internalization Afrocentricity; IMCI = Internalization Multiculturalist Inclusive.

a. Correlations for subscale scores with reliability estimates less than .51 not included. \* $p < .001$ .

correlated to Humanist (MIBI) scores. Humanist and Multiculturalist Inclusive (CRIS) scores were positively correlated, and Anti-White scores and Personal Identification with the Group scores were negatively correlated to Humanist scores. The correlation between the Assimilation subscales on the MIBI and CRIS was low in this sample ( $r = .12$ ) and did not meet the criteria for interpretation.

## Factor Analyses

Exploratory factor analyses based on principal-axis extraction were used to examine the factor structure of each of the instruments. We chose exploratory rather than confirmatory factor analyses for several reasons. First, despite the fact that the instruments and their subscales are derived from theoretical models, there are few structural validity studies of the three instruments' scores in the empirical literature. Second, we believe that exploratory analyses of these scales are more appropriate, given their early stage of development. Briggs and Cheek (1986) noted, "one of the chief considerations [in scale development research] should always be the *replicability* of factors [as] factors that do not replicate are of little value" (p. 119). Byrne (2006) made a related point even more strongly:

Confirmatory factor analysis of a measuring instrument is most appropriately applied to measures that have been *fully developed and their factor structures validated* (emphasis added). The legitimacy

of CFA use, of course, is tied to its conceptual rationale as a hypothesis-testing approach to data analysis. That is, based on theory, empirical research, or a combination of both, the researcher postulates a model and then tests for its validity given the sample data. Thus, application of CFA procedures to assessment instruments still in initial stages of development represents a serious misuse of this analytic strategy. (pp. 118-119)

Previous analyses of the structure of both ASCS (Myers & Thompson, 1994; Stokes et al., 1994) and MIBI (Helm, 2002; Sellers et al., 1997) scores have yielded mixed findings, and in the case of the MIBI, the scores did not match the theoretical model (i.e., the MMRI) in a confirmatory analysis (Cokley & Helm, 2001). In addition, the CRIS (Vandiver et al., 2000) is a relatively new scale that the authors themselves have described as "relatively untested" (Vandiver et al., 2002, p. 83).

Third, Worthington and Whittaker (2006) noted that

Reporting the findings of a single CFA is of little advantage over conducting a single EFA. Specifically, research has shown that exploratory methods (i.e., principal-axis and maximum-likelihood factor analysis) are able to recover the correct factor model satisfactorily a majority of the time. (p. 815)

Last, we wanted to employ procedures used in previous studies to facilitate comparing the results of the current investigation, and there are exploratory factor analyses of all three instruments (e.g., Helm, 2002;

Sellers et al., 1997; Stokes et al., 1994; Worrell, Vandiver, Cross, et al., 2004) presented in enough detail to allow for comparisons.

The item's salience with a factor and multiple criteria for the number of factors to extract were used to determine the final factor structure of each measure. Tabachnick and Fidell's (2001) recommendation of .40 for factor coefficients, indicating at least 16% shared variance, was used for establishing item salience with a factor. As recommended (e.g., Harlow, 2005; Thompson, 2004; Thompson & Daniel, 1996), multiple criteria were used to determine the number of factors to extract, including the eigenvalue rule, the scree test, previous empirical work, and parallel analysis. Of these criteria, "past studies have consistently revealed that, of the available procedures for determining the correct number of factors to retain, Horn's PA is the most nearly accurate" (Glorfeld, 1995, p. 393). Parallel analysis involves comparing eigenvalues from the obtained data with eigenvalues from a data set based on the same number of individuals and variables but generated randomly. Factors are extracted from the obtained data, if those eigenvalues are higher than the eigenvalues from the randomly generated data. In this study, parallel analysis was conducted using computer software (Watkins, 2000). The eigenvalues from the random data set were based on 100 replications using an  $N$  of 225 and the 42, 56, and 30 items for the ASCS, MIBI, and CRIS, respectively.

"Although PA is relatively accurate," the researchers were careful not to use this as the only criterion for the final factor structure, because "when an error is made [in predicting the number of factors], it tends to be in the direction of overextraction by one or two factors" (Glorfeld, 1995, p. 393). Thus, in determining which factor solution to accept for each scale, careful consideration was also given to having more than three salient items per factor, the number of complex items, the content of the items with salient coefficients on the factor, and interpretability of the factor in the context of the underlying theory.

ASCS. Bartlett's Test of Sphericity was significant,  $\chi^2(861) = 2309.33$ ,  $p < .001$ , and Kaiser's (1974) measure of sampling adequacy was .69, indicating that the correlation matrix of ASCS item scores was factorable (Tabachnick & Fidell, 2001). Initial communalities estimates were low, ranging from .18 to .54 ( $Mdn = .36$ ); however, the variable to factor ratio was approximately 20:2, indicating that a sample size of at least 200 should result in an admissible and convergent solution (MacCallum, Widaman, Zhang, & Hong, 1999). As recommended (e.g., Harlow, 2005; Thompson, 2004; Thompson & Daniel, 1996), multiple criteria were used to determine the number

of factors to extract including the scree test (two factors), parallel analysis (Watkins, 2000; 4 factors), previous empirical work (i.e., Stokes et al., 1994; 4 factors), and Areocentric theory (Baldwin & Bell, 1982; 4 factors). Four-, three-, and two-factor solutions were extracted, and both orthogonal and oblique rotations were examined, as similar solutions across different rotational methods provide stronger support for the results. A one-factor solution was also examined in keeping with Baldwin and Bell's (1985) recommendation to use a total ASCS score.

In the four-factor orthogonal (varimax) extraction, the third factor had three salient items (two with negative coefficients), and the fourth factor had two salient coefficients (i.e., it was a duplet). This pattern was replicated in an oblique rotation (oblimin), suggesting that a four-factor structure was not viable. The third factor in a three-factor solution had only one salient coefficient in both the oblique and orthogonal rotations. A two-factor solution, accounting for 17% of the variance in ASCS scores, had nine items on Factor I and seven items on Factor II. This solution emerged in both the orthogonal and oblique rotations, with the latter yielding a factor intercorrelation of .03. A one-factor solution was also examined. The one-factor solution accounted for 10% of the variance in ASCS scores, and 13 of the 42 items had salient coefficients. Given the increases in both variance accounted for and number of salient items, albeit small, the two-factor solution was accepted. The pattern/structure coefficients from the orthogonal extraction are presented in Table 4.

Factor I consisted of seven items from the Personal Identification with the Group factor (Stokes et al., 1994), and an item each from the Self-Reinforcement Against Racism and Value for African Culture factors. Because most of these items addressed embracing a connection to and a preference for African/Black people, culture, and worldview, this factor was labeled African Identity. Scores from the nine salient coefficients yielded a construct reliability estimate of .79. Factor II consisted of seven items, including Item 10, which had a salient coefficient on both factors. Three of the items were from the Personal Identification with the Group factor, two were from the Value for African Culture factor, and one each came from Racial and Cultural Awareness and Self Reinforcement Against Racism factors. Five of the seven items related to a unified cultural heritage for Black peoples, and this factor was labeled Valuing African Culture. The construct reliability estimate for the scores on this factor was .66. Twenty-seven (64%) of the forty-two ASCS items did not achieve a salient coefficient on either factor, and as indicated by the communalities estimates in Table 4, these items had little in common with the extracted factors (Thompson, 2004).

**TABLE 4**  
**Pattern/Structure Coefficients**  
**of ASCS Scores (N = 225)**

	<i>Factor I</i> <i>African Identity</i>	<i>Factor II</i> <i>Valuing African Culture</i>	<i>h</i> <sup>2</sup>
ASCS32	.65	.07	.42
ASCS18	.63	-.01	.40
ASCS28	.58	-.04	.33
ASCS36	.56	-.03	.31
ASCS4	.55	-.22	.35
ASCS12	.55	-.01	.30
ASCS6	.52	-.10	.28
ASCS10	.47	.40	.38
ASCS30	.42	.09	.18
ASCS21R	-.18	.53	.32
ASCS31R	-.13	.53	.29
ASCS22	.04	.51	.27
ASCS5R	-.07	.46	.22
ASCS40	.31	.43	.28
ASCS16	.34	.40	.27
ASCS26	.38	.36	.28
ASCS15R	-.37	.32	.23
ASCS14	.34	.27	.19
ASCS42	.33	.27	.18
ASCS37R	-.31	.19	.13
ASCS2	.31	.09	.11
ASCS8	.29	.08	.09
ASCS39R	.28	-.24	.14
ASCS35R	.21	-.12	.06
ASCS38	.18	.12	.04
ASCS34	.07	-.03	.01
ASCS19R	-.10	.35	.14
ASCS41R	.07	.35	.13
ASCS20	.30	.34	.21
ASCS24	.00	.32	.10
ASCS3R	-.15	.32	.12
ASCS1R	.13	.30	.11
ASCS27R	.16	-.28	.11
ASCS29R	-.04	.26	.07
ASCS33R	-.14	.26	.09
ASCS23R	.23	.25	.12
ASCS7R	.09	.21	.05
ASCS9R	.05	.21	.05
ASCS13R	.03	.15	.02
ASCS25R	-.13	.15	.04
ASCS11R	.02	.14	.02
ASCS17R	.00	.06	.00
Eigenvalue	4.31	3.12	
% variance	10.28	7.42	
Construct $\alpha$	.79	.66	

NOTE: ASCS = African Self-Consciousness Scale; *h*<sup>2</sup> refers to the extraction communality estimates. Salient loadings are italicized. Construct alpha based on salient coefficients.

*MIBI*. Bartlett's Test of Sphericity for *MIBI* items was also significant,  $\chi^2(1,540) = 4647.27$ ,  $p < .001$ , and Kaiser's (1974) measure of sampling adequacy was .71.

Initial communality estimates were wide (.33-.73; *Mdn* = .46), and the variable to factor ratio was approximately 20:3, indicating that a sample size of at least 100 should result in a defensible solution (MacCallum et al., 1999). The scree test suggested five factors, parallel analysis (Watkins, 2000) suggested 5 factors, and the underlying theory (MMRI; Sellers et al., 1997, 1998) suggested 7 factors. In the seven-factor solution, which was examined first, the seventh factor had one (varimax rotation) or two (oblimin rotation) salient coefficients, and a six-factor structure resulted in a sixth factor with no salient coefficients in both the orthogonal and oblique solutions.

A five-factor structure resulted in five generally interpretable factors, with at least five salient items per factor. Factor intercorrelations in the oblique solution were generally low ( $|.00| \leq r \leq |.23|$ ), and the orthogonal solution is presented in Table 5. Factor I consisted of nine items—five of the six Private Regard items and four Centrality items. All of the items were positive affirmations about being Black, and this factor was labeled Black Pride. Factor II was made up of four of the six Public Regard items, an Assimilation item, a Humanist item, and an Oppressed Minority item with a negative coefficient. The four Public Regard items had salient coefficients of .60 and above, and the other three items had coefficients in the .40 range, so the factor was labeled Public Regard.

Factor III consisted of seven items: four Humanist and three Assimilation items. The content of these focused on the commonalities of Blacks with other races, reflecting Sellers et al.'s (1997) original conceptualization of the Humanist ideology. Therefore, this factor was labeled Humanist. Seven of the nine Oppressed Minority items had salient coefficients on Factor IV, and this factor was given its original name. Factor V consisted of five of the nine Nationalist items and was also given its original name. Together, the five factors accounted for almost 32% of the variance in the *MIBI* items. Twenty-two (39%) of the fifty-six *MIBI* items did not have a salient coefficient on any factor and two items were complex (i.e., having salient coefficients on more than one factor).

Several post hoc analyses were conducted on *MIBI* scores. First, factor analyses were run without the eight Centrality items to determine whether leaving these items out would yield a structure more consistent with the MMRI. However, the core five-factor structure described above remained intact. Second, we examined the Centrality, Regard, and Ideology dimensions separately as reported by Sellers et al. (1997). The results yielded the same salient items for the Centrality (four items) and Regard (5 Private; 4 Public) dimensions. A four-factor solution for the Ideology dimension resulted in a dominant first factor with salient coefficients from all four subscales,

**TABLE 5**  
**Pattern/Structure Coefficients for 56-Item MIBI**

	<i>Factor I</i> <i>Black Pride</i>	<i>Factor II</i> <i>Public Regard</i>	<i>Factor III</i> <i>Humanist</i>	<i>Factor IV</i> <i>Oppressed Minority</i>	<i>Factor V</i> <i>Nationalist</i>	<i>h</i> <sup>2</sup>
PRV7	.75	.04	.04	-.08	-.08	.58
PRV54	.67	-.06	.26	-.01	-.14	.53
PRV8	.64	.04	.16	-.07	-.01	.44
CEN48	.59	-.19	.04	.13	.14	.42
CEN19	.59	-.10	.01	.15	.24	.44
CEN6	.59	-.14	.01	.04	.09	.37
PRV4	.56	.22	-.01	.04	-.05	.37
PRV24R	.50	-.07	.20	.04	-.15	.31
CEN33	.47	-.08	.02	.25	.17	.32
PUB56	.05	.67	-.12	.11	.16	.51
PUB5	.18	.61	-.20	.16	.02	.48
PUB53	.14	.60	-.13	.28	-.04	.48
PUB15	.10	.60	-.12	.13	-.00	.40
ASM44	-.25	.40	.20	.14	-.11	.30
MIN50	.05	-.40	-.10	.16	.08	.20
HUM26	.07	.02	.57	.02	-.21	.37
HUM32	.06	.11	.57	.04	-.17	.37
ASM43	.21	.08	.54	.24	-.21	.44
HUM31	.16	.02	.52	.04	-.08	.31
ASM40	.28	-.14	.50	.17	.08	.38
ASM39	.28	-.19	.41	.30	-.08	.38
HUM30	-.20	.40	.40	.01	-.00	.35
MIN47	.02	.01	.07	.55	.21	.36
MIN49	.16	.06	.21	.54	.09	.37
MIN34	-.02	.05	.08	.51	-.05	.28
MIN36	.10	-.09	.30	.51	-.14	.39
MIN42	-.04	.17	-.10	.47	-.06	.27
MIN38	-.05	-.10	.09	.41	.08	.20
MIN20	.16	-.12	.01	.41	-.01	.20
NAT12	.03	.11	-.15	-.03	.59	.38
NAT11	.17	.07	.00	.01	.59	.37
NAT14	.02	.03	-.26	-.04	.56	.39
NAT25	-.09	-.12	-.21	-.05	.54	.48
NAT3	.10	-.16	-.46	-.07	.48	.36
NAT2	.39	-.35	.07	-.02	.25	.34
NAT16	.36	-.24	-.07	-.02	.29	.28
NAT21	.31	-.25	.27	.10	.24	.30
ASM18	.28	.20	.08	.09	.08	.14
HUM29	-.09	.39	.30	.11	.07	.26
CEN13R	.17	-.35	-.03	.10	-.00	.17
CEN1R	.08	-.35	-.06	.11	.10	.15
ASM46	.10	-.33	.15	.22	.23	.25
PUB52R	.07	.32	.10	-.04	-.29	.20
CEN51R	.08	-.28	-.04	-.02	.04	.01
HUM28	-.17	.28	.26	.02	-.07	.17
ASM10	.04	.03	.34	.10	-.14	.15
ASM41	.15	-.09	.34	.32	.00	.25
HUM35	.19	-.07	.34	.17	-.23	.24
HUM23	-.02	-.17	.21	.11	.00	.08
HUM27	-.12	.15	.17	.38	-.30	.30
MIN45	.07	.14	.16	.35	-.16	.20
PRV55	.32	-.05	.09	.35	-.21	.28
ASM37	.01	.07	.03	.34	-.03	.12
NAT22	-.04	-.12	-.07	-.12	.38	.18
PUB17R	-.05	.28	-.17	-.13	-.34	.25
CEN9	.12	-.04	-.14	.14	.29	.14
Eigenvalues	4.51	3.60	3.34	2.97	2.89	
% variance	8.05	6.42	5.95	5.30	5.16	
Construct $\alpha$	.83	.72	.72	.69	.69	

NOTE: MIBI = Multidimensional Inventory of Black Identity; PRV = Private Regard; CEN = Centrality, PUB = Public Regard; ASM = Assimilation; MIN = Oppressed Minority; HUM = Humanist; NAT = Nationalist. *h*<sup>2</sup> refers to the extraction communality estimates. Salient coefficients are italicized. Construct alpha based on salient coefficients.

which was not easily interpretable, and a factor that was a duplet and thus not viable (Carroll, 1985; Floyd & Widaman, 1995; Gorsuch, 1983, 1997). This dominant first factor also emerged in two- and three-factor solutions for the Ideology items and was similar to the second factor reported by Sellers et al., 1997. In sum, analyses by dimension did not result in a cleaner structure than the one which emerged in the five-factor solution.

*CRIS.* The same procedures were followed in analyzing CRIS scores. Bartlett's Test of Sphericity was significant,  $\chi^2(435) = 2820.65, p < .001$ , and Kaiser's (1974) measure of sampling adequacy was .78. Initial communality estimates were wide (.30-.68; *Mdn* = .51), and the variable to factor ratio was approximately 10:2, indicating that a sample size of at least 200 should result in an admissible solution (MacCallum et al., 1999). The scree test, parallel analysis (Watkins, 2000), and the underlying theory (NTE; Cross & Vandiver, 2001) suggested six factors. A six-factor solution yielded interpretable factors. In both the orthogonal and oblique solutions, which accounted for 50% of the variance in the items, all items had salient coefficients of at least .43 on their home subscales, and none was complex. Intercorrelations among the factors in the oblique solution were low (*Mdn* = |.12|), and the orthogonal solution is presented in Table 6. The factors were as follows: Factor I—Immersion—Emersion Anti-White, Factor II—Preencounter Self-Hatred, Factor III—Internalization Afrocentricity, Factor IV—Preencounter Miseducation, Factor V—Preencounter Assimilation, and Factor VI—Internalization Multiculturalist Inclusive.

## DISCUSSION

In this study, we addressed one of the concerns raised by Sabnani and Ponterotto (1992)—that is, the lack of psychometric evidence for scores on Black racial identity measures—by examining the internal consistency and structural validity of scores on three racial identity measures, the ASCS, MIBI, and the CRIS. Reliability results indicated acceptable internal consistency estimates for scores on one of the four ASCS subscales, six of the seven MIBI subscales, and all six CRIS subscales. Intercorrelations among the subscales were consistent with theory. Factor analyses provided support for a two-factor structure for ASCS scores, a five-factor structure for MIBI scores, and a six-factor structure for CRIS scores.

## INTERNAL CONSISTENCY FINDINGS

In this study, both the total ASCS score (42 items) and Personal Identification with the Group score, defined by

the 15 items from the Stokes et al. (1994) analysis, had internal consistency estimates in the .70 range. Scores on the nine-item factor (African Identity) that emerged first in our structural analysis of ASCS scores also had a comparable internal consistency estimate. These results indicate that only about 9 to 15 ASCS items are related to each other (Thompson, 2003). Our results did not support the other three factors reported by Stokes et al. because the estimates for internal consistency estimates for the other three factors identified by these researchers were unacceptably low, with error variance equaling or surpassing true score variance.

MIBI subscale scores had internal consistency estimates in the .59 to .78 range, with Assimilation scores yielding the lowest estimate. From the standpoint of internal consistency, then, MIBI scores have modest-to-moderate reliability. CRIS scores had reliability estimates in the moderate-to-high range (.77-.84), indicating that the items making up the CRIS subscales are substantially interrelated. Internal consistency estimates for both MIBI and CRIS scores are in keeping with results from several previous studies (e.g., Sellers et al., 1997; Vandiver et al., 2002; Worrell, Vandiver, Cross, et al., 2004).

The internal consistency estimates have serious implications for the usage of these instruments. An often-quoted rule in measurement is that *reliability is a necessary but not sufficient condition for validity* (e.g., Anastasi, 1997; Worthen, White, Fan, & Sudweeks, 1999). Thompson (2003) pointed out that poor reliability compromises statistical significance, practical significance, and clinical significance. In other words, "the integrity of our inferences in any study turns on the critical premise that the scores in the study are reliable and valid" (Thompson, 2003, p. 6), and "it is the reliability of the data in hand in a given study that will drive results, and not the reliability of the scores described in the test manual" (p. 5). Reliability is also influenced by the participants. Thus, it is crucial for reliability of scores to be provided for samples in all studies and not just in psychometric research (Thompson, 2003). It is possible, then, that many of the findings involving ASCS scores, and the subscale scores in particular, may not replicate in subsequent research, given the low reliability estimates. It is more likely that results obtained on the MIBI and CRIS will replicate across studies and samples, given the higher estimates of reliability for these instruments obtained here and elsewhere.

## CORRELATIONS AMONG SUBSCALES

The correlations among the subscales generally provided support for the constructs under study. For example,

**TABLE 6**  
**Pattern/Structure Coefficient for CRIS Scores (N = 225)**

	<i>Factor I</i> IEAW	<i>Factor II</i> PSH	<i>Factor III</i> IA	<i>Factor IV</i> PM	<i>Factor V</i> PA	<i>Factor VI</i> IMCI	<i>h</i> <sup>2</sup>
IEAW30	.87	.14	.08	-.05	.03	-.11	.80
IEAW38	.70	.13	.14	.07	-.12	-.11	.56
IEAW14	.68	.01	.07	.07	-.09	-.13	.49
IEAW6	.66	.15	.24	.07	-.04	-.15	.57
IEAW23	.60	.17	.11	-.04	.08	-.21	.46
PSH25	.11	.83	.06	-.03	.02	.10	.71
PSH39	.08	.80	.13	-.06	.09	.04	.67
PSH4	.11	.69	-.00	.15	.05	.07	.51
PSH17	.08	.62	.03	-.07	.07	-.08	.41
PSH10	.11	.55	-.11	.12	.11	.05	.35
IA37	.03	.05	.71	.04	-.03	-.05	.51
IA22	.11	.03	.70	.19	-.10	.01	.55
IA31	.20	.03	.69	.13	.03	-.10	.54
IA13	.10	-.05	.62	.20	.01	-.09	.44
IA7	.14	.01	.59	.16	-.17	.01	.42
PM28	.07	-.02	.16	.76	.06	.02	.61
PM12	.02	.07	.10	.74	.05	-.10	.58
PM20	.11	.10	.22	.63	-.02	.04	.47
PM36	.02	.05	.09	.61	.23	.07	.44
PM3	-.06	-.06	.11	.51	.05	.07	.29
PA2	-.08	.02	-.12	.23	.73	.08	.62
PA26	-.04	.08	-.03	.03	.71	.11	.53
PA34	.05	.04	-.05	.18	.71	.05	.54
PA9	-.03	.05	-.07	.13	.69	.12	.51
PA18	-.07	.13	.01	-.16	.49	-.01	.29
IMCI33	-.17	.06	-.09	.03	.00	.78	.64
IMCI40	-.06	-.02	-.11	-.10	.08	.74	.59
IMCI16	-.05	-.02	-.01	.04	.09	.65	.44
IMCI24	-.21	.03	-.01	.10	-.00	.54	.34
IMCI5	-.15	.13	.01	.03	.19	.45	.28
Eigenvalues	2.78	2.64	2.48	2.48	2.46	2.28	
% variance	9.28	8.81	8.27	8.26	8.21	7.60	
Construct $\alpha$	.84	.83	.81	.80	.81	.79	

NOTE: CRIS = Cross Racial Identity Scale; IEAW = Immersion–Emersion Anti-White; PSH = Preencounter Self-Hatred; IA = Internalization Afrocentricity; PM = Preencounter Miseducation; PA = Preencounter Assimilation; IMCI = Internalization Multiculturalist Inclusive. *h*<sup>2</sup> refers to the extraction communality estimates. Salient loadings are italicized. Construct alpha based on salient coefficients.

it makes sense that scores on ASCS' Personal Identification with the Group factor would have its strongest relationships with the MIBI's Nationalist score and the CRIS' Afrocentricity score. Afrocentricity is an in-group focused internalized identity according to Cross and Vandiver (2001), and Sellers et al. (1998) indicated that "a nationalist ideology posits that African Americans should be in control of their own destiny with minimal input from other groups" (p. 27). This also explains the strong relationship between Afrocentricity and Nationalist scores, and the moderate relationship between Personal Identification with the Group and Centrality (the importance of race to an individual) scores.

Similarly, Humanist (commonalities among all human beings) scores had a moderate positive relationship with

Multiculturalist Inclusive (respecting all cultural groups) scores, and Private Regard (one's personal feelings about being Black) scores had a moderate, negative relationship with Self-Hatred scores. Nationalist attitudes were more closely related to Anti-White attitudes than were Afrocentricity attitudes, perhaps in keeping with the former's premise of minimal input from other groups. The most surprising finding was the lack of a relationship between the two Assimilation subscales. Previous research has shown that the subscales are modestly correlated ( $r = .26$ , Helm, 2002;  $r = .41$ , Vandiver et al., 2002). The current finding may be due, in part, to the lower reliability estimates for MIBI Assimilation scores in this sample or the fact that the Assimilation subscale was not supported in the structural analysis of MIBI scores. For example,

Cokley and Helm (2001) contended that four of the nine items on the Assimilationist scale did not reflect the theoretical conception of this ideology as outlined by Sellers et al. (1997). In general, though, the theoretical relationships that emerged provide concurrent validity support for some of the subscales on the instruments.

## STRUCTURAL VALIDITY FINDINGS

Although internal consistency estimates provide us with evidence about the relationships among the items that make up a scale, they do not provide evidence for the structure or dimensionality of a scale. In other words, high internal consistency estimates do not necessarily indicate that a scale is unidimensional, and vice versa. The question about whether items are measuring the constructs or dimensions they are supposed to be measuring and not measuring another dimension is assessed using factor analysis (Thompson, 2004), and these results for the ASCS, MIBI, and CRIS are discussed in the next few paragraphs.

### ASCS

The structural analysis of ASCS scores revealed major concerns with the scale's structure. First, the low communality estimates for items indicates that very little variance in the items contributed to the factors (Thompson, 2004), and the factors accounted for less than 20% of the variance in scores. The two factors that were interpreted in this study (i.e., African Identity and Valuing African Culture) are both related to Baldwin and Bell's (1982, 1985) first competency dimension (awareness of and value for one's Black identity and African heritage). Factor I was also related to the first factor found by Stokes et al. (1994), although only 7 of the original 15 items had salient coefficients. The second factor was related, at least theoretically, to the fourth factor reported by Stokes et al. (Value for African Culture), but only two of the seven items were in common across the two factors.

In sum, the three examinations of the structure of ASCS scores (Myers & Thompson, 1994; Stokes et al., 1994; this study) have yielded differing results—seven, four, and two factors, respectively. Moreover, only the first factor in this study and the Stokes et al. (1994) study overlap substantially, with seven items in common. These findings suggest that the ASCS items need to be revisited, as the items do not reflect the four competency dimensions (Stokes et al., 1994) outlined by the authors. Indeed, most of the items do not represent a single underlying dimension (i.e., African self-consciousness), raising questions

about research findings based on both the total ASCS score and the subscale scores.

### MIBI

In general, the results of this study yielded an interpretable factor structure for MIBI scores, albeit different than the seven-factor structure put forward in the MMRI (Sellers et al., 1997, 1998). Four of the five factors were given the same names as factors on the original instrument, in keeping with the core of items making up those factors. When one considers the other structural validity studies of MIBI scores, these findings are not entirely surprising. Cokley and Helm (2001) were not able to achieve an acceptable fit for the seven-factor model in their study, and although Helm (2002) extracted seven factors, she also reported substantial departures from the item-factor assignments proposed by the MMRI. Comparing the factor solutions based on the 56-item MIBI in this study and Helm's study yields the following summary: (a) The Public Regard and Oppressed Minority factors emerged in both studies; (b) The Private Regard and Assimilation factors emerged only in Helm's study; (c) The Humanist and Nationalist factors emerged only in this study; and (d) The Centrality factor did not emerge in either study. None of the factors that emerged mirrored MMRI predictions exactly.

A detailed comparison of the current findings with the Centrality and Regard factors from Sellers et al. (1997, 1998) is not possible because factor coefficients were not reported in those papers. However, an examination of the Ideology factor structure in Sellers et al. (1997; see Table 1, p. 809) provides some context for the inconsistencies in the MIBI's structure in subsequent studies. Although the four Ideology factors appear to be intact in that study, using .40 (instead of .30; see Sellers et al., 1997) for item salience yields the following results: (a) Assimilation consists of four of nine items, three of which have complex coefficients; (b) Humanist consists of five of nine items, one with a complex coefficient, plus five cross-loading Assimilation items and five negatively cross-loading Nationalist items; (c) Oppressed Minority consists of seven of nine items; and (d) Nationalist consists of seven of nine items, five with complex coefficients, and four negatively cross-loading Humanist items. Thus, the only subscale with a relatively clean structure in the Sellers et al. (1997) study was Oppressed Minority, which had eight salient items in Helm (2002), and seven salient items in this study.

The Assimilation/Humanist combination that emerged in this study and the Humanist/Nationalist combination in the Helm (2002) study are evident in the original scale

development study (see Sellers et al., 1997). Also, the Public Regard factor in both Helm's and this study consists of only four items. Interestingly, Centrality did not emerge in either of these two studies, suggesting that it may not be possible to factor-analyze the current set of Centrality items with the Ideology items, as was the case in Sellers et al. (1997). On the other hand, removing Centrality items from the factor analysis did not result in a cleaner structure for the Regard or Ideology dimensions. Helm's findings and those in this study suggest revisiting items on all the MIBI subscales. Thus, we must concur with Cokley and Helm (2001) that the MIBI does not seem to adequately operationalize the MMRI.

## CRIS

In general, the results of this study were most supportive of the structure of CRIS scores. The six factors identified in previous research (Gardner-Kitt & Worrell, 2007; Vandiver et al., 2002; Worrell, Vandiver, Cross, et al., 2004) emerged robustly with no complex coefficients. The findings indicate that CRIS scores match the theoretical framework proposed in NT-E (Cross & Vandiver, 2001). In combination with the reliability and concurrent validity evidence, this study provides strong support for the CRIS as an instrument for assessing Black racial identity attitudes. Indeed, with the addition of the results of this study, CRIS scores seem to possess the "strong empirical or conceptual foundation to guide the specification and evaluation of the factor model" (Brown, 2006, p. 41) using CFA procedures.

## LIMITATIONS

This study also had several limitations. First, some participants were paid and others were not. Second, some participants completed the study during a single testing session, whereas others were given an entire week to complete and return the questionnaires. Completion over a week increased the chances of participants conversing with one another about their responses. Third, testing conditions (e.g., time and place) were not consistent and may have affected participants' responses.

Another limitation is that sample participants came from different types of institutions (i.e., PWIs and HBCUs). Although there is no reason to expect the structures of scores to differ by school type, and there is evidence that CRIS scores have the same structure in these populations (Worrell et al., 2006), there is no such evidence for ASCS and MIBI scores. Nonetheless, the factor-analytic and reliability results for the CRIS and

MIBI in this study corroborate previous research on these instruments (Cokley & Helm, 2001; Helm, 2002; Vandiver et al., 2002). Thus, the limitations inherent in our study may not have produced large effects on the data, but they should also not be ignored.

A third limitation of this study is the lack of socioeconomic, age, and geographic diversity in the sample. Most of the students in our sample were from middle class backgrounds and all attended college in Virginia. Thus, this study did not address Sabnani and Ponterotto's (1992) concern about the overreliance on college samples from the same socioeconomic and geographic locations.

## CONCLUSION

Measurement researchers have stressed the importance of using reliable and valid scores for several years (e.g., Benson, 1998; Cronbach & Meehl, 1955; Goodwin & Goodwin, 1999; Meehl, 1990; Thompson, 2003, 2004; Thompson & Daniel, 1996), and this caution has also been specifically directed at instruments developed for use with minority populations (Burlew, 2003; Sabnani & Ponterotto, 1992). In this study, we examined the reliability and structural validity of three instruments (the ASCS, MIBI, & CRIS) that are currently used in assessing Black racial identity attitudes. Results indicated that (a) The ASCS is best represented by two factors, (b) Most of the ASCS items do not contribute to the reliability or structural validity of the scale, (c) The MIBI's scores on the seven theorized subscales are reliable, (d) MIBI scores are best represented by a five-factor structure rather than the seven-factor structure proposed by Sellers et al. (1997, 1998), (e) The scores on the CRIS are reliable and valid, and (f) CRIS scores are best represented by a six-factor structure in keeping with NT-E (Cross & Vandiver, 2001; Worrell et al., 2001).

Compared to instruments measuring other constructs such as IQ and the Big Five personality factors, there is a paucity of research on the psychometric properties of scores on these three instruments that measure the construct of Black racial identity. Nonetheless, there are many studies which use these scores to predict other variables of interest in research, clinical, and educational settings, and scores on these instruments are often used to establish criterion-related validity for measures in development. The results of this study suggest that using some of the measures in this way may be premature. The exploratory factor analytic techniques used in this study yielded different factor structures than theorized and found in previous studies for ASCS and MIBI scores, although results for the MIBI were similar to results reported by Helm (2002). One assumption of factor

analysis is that “the components of a scale are important if they are differentially related to other measures” (Briggs & Cheek, 1986, p. 111). The results of this study suggest that researchers need to continue to study the scores on these instruments in the diverse samples that they are used with (e.g., college and noncollege, adolescent and adult), not only to find factor structures that are replicable but also to examine the relationships of the replicable factors to other constructs for clinical and research utility.

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