

Clusters of CRIS Scores and Psychological Adjustment

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Cluster analyses on racial identity attitudes as assessed with the Cross Racial Identity Scale (Vandiver et al., 2000) provided strong support for six theoretically meaningful clusters. We labeled these *Afrocentric*, *Assimilated*, *Conflicted*, *Low Race Salience*, *Negative Race Salience*, and *Multiculturalist*. We also examined whether individuals in different clusters varied on symptoms of psychological distress, as well as personal and status-based rejection sensitivity. Participants in the Conflicted cluster reported greater psychological distress and personal rejection sensitivity than those in the Multiculturalist and Low Race Salience clusters. Our findings suggest that bivariate relationships between nigrance attitudes and psychological functioning may mask nuances that are evident with person-centered analyses. We discuss the implications of these findings for racial identity research.

Keywords: African American, cluster analysis, CRIS, nigrance, racial identity

Profiles of Cross Racial Identity Scale Scores and Psychological Adjustment

The study of Black racial identity, or the psychological meaning one derives from being African American, has garnered increased research attention over the last 40 years. Among the most longstanding and influential models of racial identity has been nigrance theory (Cross, 1971, 1991; Cross & Vandiver, 2001; Worrell, Cross, & Vandiver, 2001). The original nigrance model (NT-O; Cross, 1971) has undergone several revisions (Cross, 1991), and under the current version of the theory—the expanded nigrance model (NT-E; Cross & Vandiver, 2001; Worrell et al., 2001)—identity is conceptualized as a collection of relatively orthogonal attitudes about what it means to be African American. Research data supports both the validity and orthogonality of these attitudes (Vandiver, Cross, Worrell, & Fhagen-Smith, 2002; Worrell & Watson, 2008), which are summarized in Table 1.

More recent research has examined whether these attitudes cluster into meaningful profiles of Black identity within individuals (Chavez-Korell & Vandiver, 2012; Whittaker & Neville, 2010; Worrell, Vandiver, Schaefer, Cross, & Fhagen-Smith, 2006). Whereas nomothetic, or variable-centered, approaches can overlook the dynamic relationships between a total set of characteristics, a benefit of cluster analyses is that they can illuminate the ways in which personality characteristics combine in particular individuals (York & John, 1992). Our first aim in this manuscript is to add the findings presented here to this growing body of work.

Identity Clusters and Psychological Outcomes

Whittaker and Neville (2010) examined the relationship between cluster membership and psychological distress, finding that individuals in what they termed an Immersion (i.e., anti-White) cluster reported the lowest psychological well-being out of all their clusters. A close examination of Whittaker and Neville's Immersion cluster, however, reveals that this group was characterized not only by high scores on anti-White attitudes, but also by considerably above average scores on miseducation, self-hatred, and Afrocentricity attitudes. This raises the question of whether it is anti-White attitudes per se that are associated with psychological distress, or whether the combination of negative and potentially conflicting attitudes (anti-White and self-hatred) is a risk factor for distress. Thus a second, more central objective of the current research is to examine the adjustment outcomes associated with Black racial identity clusters.

We focus here on two such outcomes. The first is psychological distress (Derogatis, 1993), which provides an overall index of mental health. The second is *rejection sensitivity* (RS), a cognitive-affective disposition to anxiously expect rejection. Research shows that people can expect rejection based on their personal characteristics, such as their personality (Downey & Feldman, 1996), or on the basis of stigmatized social identities such as their race (Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002). To the degree that the Cross Racial Identity Scale (CRIS) taps into attitudes about personal and collective identities, we sought to explore the relationship between the CRIS and RS scales.

Method

Participants and Procedure

A total of 339 African American students attending a large research university in a Western state were recruited for this study using snowball sampling (74.6% female; age: $M = 21.3$, $SD = 4.4$). The majority of participants self-identified as African American/Black (60.8%), with 21.1% identifying as African, 4.2% as

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Table 1
Summary of Attitude Types From the Expanded Nigrescence Theory

Type	Attitude	Description
Pre-encounter	Assimilation ^a	Self-identify as American over African American
	Miseducation ^a	Belief in the negative stereotypes of African Americans
	Self-hatred ^a	Negative affect toward being African American
Immersion-emersion	Anti-White ^a	Disdain for European Americans
	Intense Black involvement	Romanticism of being African American
Internalization	Afrocentricity ^a	Belief that one's life should be guided by Afrocentric principles
	Biculturalism	Invested in both African American and at least one other cultural identity
	Racial/ethnic multiculturalism	Self-acceptance combined with an appreciation of and respect for other marginalized groups
	Inclusive multiculturalism ^a	Self-acceptance combined with an appreciation of and respect for all social groups

^a Operationalized on the Cross Racial Identity Scale (Vandiver et al., 2000).

Caribbean/Black, 0.9% Hispanic/Black, and 11.9% as mixed race. The mean GPA was 3.23 ($SD = .55$), and participants were mostly from suburban (59.6%) or urban (30.9%) communities. Approximately 72% of the sample indicated a middle-class background, and roughly 30% of the sample had at least one parent with a bachelor's degree.

Participants either completed the study survey online (95%) or in the lab. Over 95% of participants opted for the online survey. The study was hosted on secure servers maintained by the university, and thus access was restricted to enrolled students. Customized survey software licensed to the university was used to create and administer the online surveys. Participants were offered \$20 for taking part in the study.

Measures

The measures that are relevant to the present study are described below; these measures were embedded among other measures not relevant to the current study. Means, standard deviations, and zero-order correlations among study variables can be found in Table 2.

Demographics. Participants completed a demographics questionnaire consisting of questions about their family's social class

position, age, gender, length of time in the United States, major, class standing in school, and ethnicity.

CRIS. The CRIS (Vandiver et al., 2000; Worrell, Vandiver, & Cross, 2004) is a 40-item questionnaire designed to assess six racial identity attitudes based on NT-E. The six attitudes include preencounter assimilation, preencounter miseducation, preencounter self-hatred, immersion-emersion anti-White, internalization Afrocentricity, and internalization multiculturalist inclusive. Each subscale consists of 5 items alongside 10 filler items rated on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Subscale scores are the averages of individual subscale items. Before conducting cluster analyses, raw scores were converted to *T* scores with a mean of 50 and standard deviation of 10 to aid interpretation (Worrell et al., 2006). Internal consistency estimates for subscale scores in this sample were all in the acceptable range ($.78 \leq \alpha \leq .91$).

Brief Symptom Inventory. The Brief Symptom Inventory (BSI; Derogatis, 1993) is a 53-item measure that asks participants to indicate how much they have been affected by various symptoms in the previous seven days. Items are rated on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*) with higher scores indicating greater endorsement of the symptoms. The BSI includes

Table 2
Intercorrelations, Means, and Standard Deviations for Scores on the Cross Racial Identity Scale, Global Severity Index, and Rejection Sensitivity Questionnaires

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. PA	339	2.30	1.25	—								
2. PM	340	2.83	1.26	.33*	—							
3. PSH	339	2.40	1.40	.26*	.27*	—						
4. IEAW	340	2.04	1.25	.04	.10	.30*	—					
5. IA	340	3.04	1.33	-.14*	.21*	.14*	.38*	—				
6. IMCI	340	5.42	1.24	-.10	-.04	.02	-.25*	.03	—			
7. GSI	339	1.77	.55	.12	.15*	.39*	.27*	.11	.07	—		
8. RS-P	339	9.21	3.97	.16*	.14*	.31*	.15*	.20*	-.02	.41*	—	
9. RS-R	338	11.26	4.55	.00	.11	.07	-.04	.13*	.00	.07	.13*	—

Note. PA = preencounter assimilation; PM = preencounter miseducation; PSH = Preencounter Self-Hatred; IEAW = Immersion-emersion Anti-White; IA = internalization Afrocentric; IMCI = internalization multiculturalist inclusive; GSI = Global Severity Index; RS-P = personal rejection sensitivity; RS-R = race-based rejection sensitivity.

* $p < .01$.

nine subscales that are combined to form a Global Severity Index (GSI), a measure of global psychological distress. To create the GSI, items were summed and divided by the total number of items that composed the subscale ($\alpha = .95$ in this study). As indicated in the BSI manual (Derogatis, 1993), raw scores were converted to standardized T scores with a mean of 50 and standard deviation of 10.

Rejection Sensitivity Questionnaire-Personal. The Rejection Sensitivity Questionnaire-Personal (Downey & Feldman, 1996) assesses anxious expectations of rejection by significant others due to one's personal, unique characteristics. Validation data for this measure are available in Downey and Feldman ($\alpha = .85$ in this study).

Rejection Sensitivity Questionnaire-Race. Rejection Sensitivity Questionnaire-Race (Mendoza-Denton et al., 2002) measures anxious expectations of race-based rejection in situations where discrimination is applicable and possible (e.g., an in-person job interview). Validation data for this questionnaire are available from Mendoza-Denton et al. ($\alpha = .91$ in this study).

Results

Cluster Analyses of Racial Identity Attitudes

Cluster analysis is an exploratory classification procedure that groups individuals based on the similarity of their responses on a set of measures (Hair & Black, 2000). The CRIS has been shown to be a psychometrically sound instrument (Worrell, Mendoza-Denton, Telesford, Simmons, & Martin, 2011) yielding reliable, stable, and valid scores that are appropriate to submit to cluster analysis.

Multistage Euclidean grouping (McDermott, 1998) was applied to the six subscales of the CRIS to reduce the likelihood of finding unstable cluster solutions. This procedure uses three within-sample replications to help validate the integrity of the solutions. In this sample ($N = 339$), participants were randomly assigned to three equal-sized subsamples ($n = 113$). Stage I analyses were conducted on the three independent subsamples with 2% of outliers omitted. Based on Mojena's stopping criterion, an increase in error variance, and the pseudo F statistic being simultaneously elevated over the pseudo t^2 statistic (Aldenderfer & Blashfield, 1984; Mojena, 1977), three to seven cluster solutions were viable options for each subsample. Stage II analyses were conducted to determine the extent to which the Stage I clusters emerged similarly across subsamples and resulted in a six-cluster solution. The second-stage six-cluster solution had relative cohesion of variance within clusters, within profile variables, and overall (.67). Stage III clustering was then applied to adjust for any misassignments of individuals to profiles from the first two stages and resulted in an improved overall homogeneity coefficient (.72). Clusters 1, 2, 3, 4, and 6 replicated in all three subsamples, with Cluster 5 replicating in only two of the three subsamples. The characteristics of each cluster are discussed below.

Cluster profiles were interpreted and named based on their dispersion around the T score mean of 50. Clusters ranged in size from 32 (9.44% of sample) to 109 (32.15%) with only 11 (3.24%) participants unassigned. Clusters did not differ significantly with respect to family's social class, age, gender, length of time in the United States, major, or class standing in school. The six clusters

were named Afrocentric, Assimilation, Conflicted, Low Race Salience, Negative Race Salience, and Multiculturalist, based on the overall theme of the cluster. Note that these names now refer to clusters, as opposed to individual attitudes. Figure 1 illustrates these clusters graphically (see Table 3 for descriptive statistics by cluster). We address the psychological meaning of these clusters in the Discussion section.

Psychological Distress and Cluster Membership

A one-way analysis of variance with the cluster serving as the independent variable and the GSI as the dependent variable revealed a significant main effect, $F(5, 316) = 5.26, p < .01$. Planned comparisons showed that participants in the Conflicted cluster had meaningfully (based on effect size; Ozer, 2007) more psychological distress than did those in the Multiculturalist ($d = 1.13$), Low Race Salience ($d = 1.20$), Assimilation ($d = .60$), and Negative Race Salience ($d = .43$) clusters. Those in the Multiculturalist and Low Race Salience clusters did not differ significantly from each other, $t(316) = .88, ns, d = .14$. However, members of both of these clusters reported substantially less distress than did those in the Afrocentric ($d = .67$ and $.73$), Assimilation ($d = .47$ and $.56$), and Negative Race Salience ($d = .68$ and $.75$) clusters, respectively. As shown in Table 3, the Conflicted cluster had the greatest percentage of members with a clinically significant GSI score (i.e., $T \geq 63$), whereas the Multiculturalist and Low Race Salience clusters had very few individuals with high GSI scores. Overall, the pattern of findings for psychological distress lends support to the idea that conflicting attitudes may be predictive of psychological distress.

Rejection Sensitivity and Cluster Membership

For race-based rejection sensitivity, those in the Conflicted and Negative Race Salience clusters felt meaningfully more sensitive than did those in the Low Race Salience cluster ($d = .55$ and $.43$, respectively). No other meaningful differences emerged in race-based rejection sensitivity among the other three clusters. In contrast, for personal rejection sensitivity, those in the Conflicted cluster reported greater personal rejection sensitivity than did those in the Multiculturalist ($d = .91$), Low Race Salience ($d = .83$), and Assimilated clusters ($d = .55$). Importantly, those in the Multiculturalist cluster reported lower levels of personal rejection sensitivity than did those in almost every other cluster ($.43 \leq d \leq .91$), the only exception being that they did not differ from those in the Low Race Salience cluster ($d = .10$).

Discussion

Gordon Allport (1937) noted that the lack of attention to the total organization of personality was a significant hindrance to the field of personality psychology (Robins, John, Caspi, Moffitt, & Stouthamer-Loeber, 1996). In an effort to advance the study of Black racial identity from a similar limitation, we have joined a small but growing cadre of researchers examining how various aspects of Black identity "go together" to predict functioning. We specifically examined how the six attitudes measured in the CRIS cluster at the intraindividual level. Through such clustering, it becomes possible to revive some of the original parsimony that

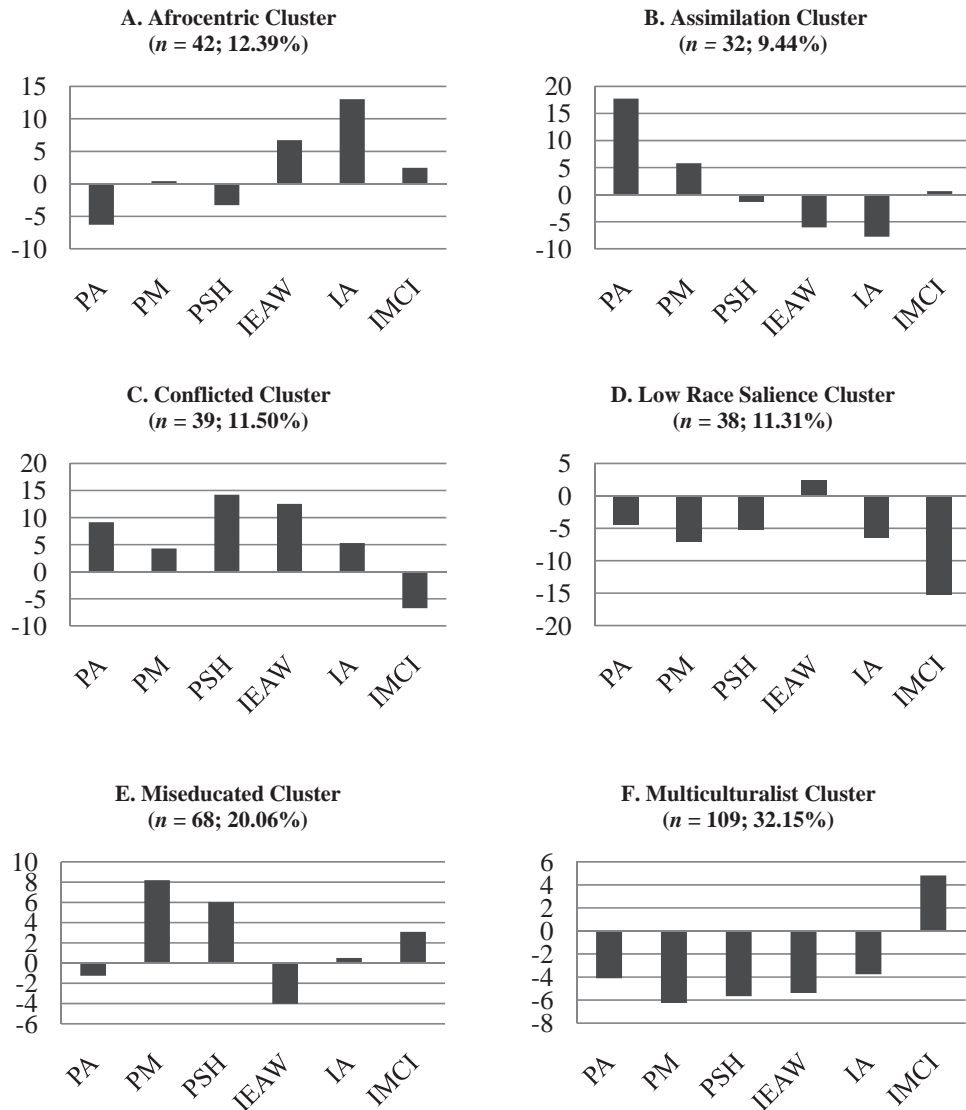


Figure 1. Separated clusters. The subscale means in this figure are differences from the T score mean of 50; thus, 0 represents the midpoint of the distributions and the figures shows the distribution of CRIS scores in relation to the mean. PA = Preencounter Assimilation; PM = Preencounter Miseducation; PSH = Preencounter Self-Hatred; IEAW = Immersion-Emersion Anti-White; IA = Internalization Afrocentricity; IMCI = Internalization Multiculturalist Inclusive.

characterized William Cross' (1971) original, stage-based nigrance theory. Nevertheless, as with the attitudes that comprise them, these clusters do not presuppose a developmental ordering.

Interpretation of Psychological Clusters

In what follows, we examine the potential psychological meaning of the cluster profiles we observed here. We again refer the reader to Figure 1, which illustrates these clusters graphically.

Afrocentric cluster. Consistent with researchers who have found clusters similar to our Afrocentric cluster (e.g., Whittaker & Neville, 2010; Worrell et al., 2006), we infer that individuals with this profile of scores have a positive sense of self as African

American and their above-average anti-White attitudes are tempered by multiculturalist attitudes.

Assimilation cluster. We interpret scores for those in this cluster to mean that they tend to identify with mainstream culture, and label themselves as American rather than African American (Worrell et al., 2006). It is interesting to note that the Afrocentric and Assimilated clusters shared similar psychological adjustment profiles, at least as measured with the three indexes we used here. These findings specifically contradict prior theorizing that those in preencounter themed clusters (such as our Assimilation cluster) should be at greatest risk for psychological distress (Cross, 1971), especially compared to those in internalization themed clusters (such as our Afrocentric cluster). It is possible that a common

Table 3

Descriptive Statistic for Scores on the Global Severity Index and Rejection Sensitivity Variables by Cluster

Cluster	Global Severity Index			Personal rejection sensitivity		Race-based rejection sensitivity	
	<i>M</i>	<i>SD</i>	% $T \geq 63$	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Afrocentric	51.96	11.01	16.67	9.85	3.77	11.56	5.42
Assimilation	50.03	10.01	15.63	9.31	3.32	10.87	5.50
Conflicted	56.33	11.09	20.51	11.39	4.20	12.50	4.79
Low race salience	45.44	6.47	2.63	8.17	3.58	10.17	3.53
Multiculturalist	46.47	7.93	4.59	7.85	3.51	11.04	5.43
Negative race salience	52.01	7.93	11.76	10.09	3.88	11.82	4.05

buffering factor shared by these two clusters is their feeling of psychological belonging to a group—even if that group differs markedly between the two clusters. Indeed, prior research shows the importance of psychological belonging for adjustment outcomes (Mendoza-Denton, Goldman-Flythe, Pietrzak, Downy, & Aceves, 2010; Walton & Cohen, 2007).

Conflicted cluster. Members of the Conflicted cluster had above average scores on all attitudes except multiculturalism. Particularly striking was the combination of high anti-White attitudes and high self-hatred attitudes. Similar to Whittaker and Neville (2010), our data show that this cluster is associated with the most psychological distress, with 20% having clinically significant GSI scores. Although Whittaker and Neville interpreted such distress to result from high self-hatred attitudes, this interpretation ignores the totality of the profile that clustering offers. Rather, what seems to uniquely characterize the Conflicted cluster is, in fact, that they simultaneously endorse opposing attitudes (Anti-White and Assimilationist).

One potential consequence of this conflict may be increased sensitivity to perceived rejection from both mainstream culture and African American culture (feeling assimilated with negative attitudes about European Americans, feeling Afrocentric with negative attitudes about African Americans). Some evidence in support of this view can be found in our results. Indeed, those in the Conflicted cluster felt much more global rejection sensitivity than did those in the Multiculturalist, Low Race Salience, and Assimilated clusters.

Low Race Salience cluster. We interpret the Low Race Salience pattern of scores to mean that these individuals do not place importance on race and do not see it as relevant to their lives (Worrell et al., 2006). Those in this cluster showed similar psychological functioning and sensitivity to rejection as those in the Multiculturalist cluster (with well below average levels of psychological distress). These data stand in contrast to data suggesting that aschematic individuals along racial lines experience more distress compared to those with dual identities (Oyserman, Kimmelmeier, Fryberg, Brosh, & Hart-Johnson, 2003); further research is needed to clarify these conflicting findings.

Multiculturalist cluster. The pattern of scores for those in our Multiculturalist cluster were similar to the pattern found for the Multiculturalist clusters in three previous studies (Chavez-Korell & Vandiver, 2012; Whittaker & Neville, 2010; Worrell et al., 2006). We interpret this to mean that these individuals have a respect and appreciation for all social identity groups (based on race, gender, sexual orientation, etc.), including African Ameri-

cans. Furthermore, those in this cluster reported less psychological distress and less rejection sensitivity than all other clusters except Low Race Salience.

The data also suggest somewhat better adjustment outcomes for the Multiculturalist cluster than for the Afrocentric or Assimilated clusters. These findings raise the interesting possibility that the benefits of feeling a connection to one social identity or worldview are expanded when one feels a connection to many such identities. In other words, adopting a positive Afrocentric perspective (Afrocentric cluster) may buffer against psychological distress (Mendoza-Denton, Pietrzak, & Downey, 2008), but appreciating multiple worldviews (Multiculturalist cluster) can offer the adaptive benefits of having a diverse set of constructs to rely upon in case of a threat to one or more of those worldviews (Oyserman et al., 2003).

Negative Race Salience cluster. Similar to those in Worrell et al.'s (2006) Miseducated cluster, participants in our Negative Race Salience cluster are particularly aware of and in agreement with the negative stereotypes about African Americans and are also self-hating to some extent. Global distress scores for those in this cluster were slightly above average but well below the clinical cutoff. The awareness of negative stereotypes for those in this group suggests that this group may be particularly hampered by stereotype threat effects (Nussbaum & Steele, 2007; Steele & Aronson, 1995; Taylor & Walton, 2011).

Limitations and Future Directions

In this article, our principal aim was to link these clusters to patterns of psychological functioning. Results supported the predictive validity of the clusters and suggest that bivariate relationships between nigrescence attitudes and psychological functioning may be misleading or may miss nuances that are evident with person-centered analyses (e.g., the modest correlations between rejection sensitivity and racial identity scores in this study). Although we view this as a strength of our study, there are also several limitations that should be addressed. For example, we have described racial identity as a set of attitudes (which have an affective, behavioral, and cognitive component) but did not include any behavioral dependent measures in this study. Future research should use behavioral outcomes to determine if cluster members differ in behavior as they do on the psychological outcomes used in this study.

Diary studies (e.g., Yip & Cross, 2004) as well as lab-based experiments examining performance or physiological functioning

may be particularly fruitful areas of future study as researchers continue to uncover the relationship between adjustment and cluster membership for CRIS scores. Furthermore, our snowball sampling technique has the potential to create nonrepresentative samples that may not generalize to the broader population (Biernacki & Waldorf, 1981). Although we recognize this as a potential limitation, given that findings from our sample have been replicated in others (e.g., Whittaker & Neville, 2010; Worrell et al., 2006), we are cautiously confident in the conclusions drawn from our sample. Finally, more broadly, the clustering techniques used here may be a useful tool in other research where a myriad of individual measures exist to characterize individuals and groups.

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