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Stereotype threat in African American children: The role of Black identity and stereotype awareness

La menace du stéréotype chez les enfants afro-américains : le rôle de l'identité noire et de la conscience du stéréotype

*Kristal Hines Shelvin**
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Abstract

Stereotype threat has been identified as a possible factor in the underperformance of African American students. We focus on two factors that may moderate stereotype threat vulnerability: racial identity and awareness of stereotypes. We examined African American children's (*N*=186, aged 10-12) racial identity using profiles derived from a cluster analysis of responses to the *Multidimensional Inventory of Black Identity-Teen* (Scottham et al., 2008). Awareness of stereotypes was assessed with a racial stereotype-generation task. At a subsequent session, participants completed a challenging language arts test under stereotype-threat or neutral conditions. The stereotype threat effect was only found for two Black identity profiles. The most

Résumé

La menace du stéréotype a été identifiée comme un facteur causal possible de la sous-performance des étudiants afro-américains. Nous nous concentrons ici sur deux facteurs qui peuvent modérer la vulnérabilité à la menace du stéréotype: l'identité raciale et la conscience des stéréotypes. Nous avons examiné l'identité raciale d'enfants afro-américains (N = 186, 10-12 ans) en utilisant des profils issus d'une analyse typologique des réponses au *Multidimensional Inventory of Black Identity-Teen* (Scottham et al., 2008). La conscience des stéréotypes a été évaluée avec une tâche de listage des stéréotypes raciaux. Lors d'une séance ultérieure, les participants ont passé un test difficile dans le domaine des arts du langage en

Key-words
Stereotype threat, stereotype awareness, Black identity

Mots-clés
Menace du stéréotype, conscience du stéréotype, identité noire

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common stereotype generated, *Blacks are less intelligent than Whites*, moderated the effect. Children aware of the intelligence stereotype demonstrated the classic stereotype threat effect, which was not found for children who did not list this stereotype. Understanding individual differences in stereotype threat vulnerability may help to identify protective factors for students.

condition de menace du stéréotype ou en condition neutre. L'effet de menace du stéréotype n'a été trouvé que pour deux profils de l'identité noire. Le stéréotype qui a été listé le plus fréquemment, *les Noirs sont moins intelligents que les Blancs*, modère cet effet. Les enfants conscients du stéréotype d'intelligence ont montré l'effet classique de menace du stéréotype, lequel n'a pas été trouvé chez les enfants qui n'ont pas évoqué ce stéréotype. Comprendre les différences individuelles dans la vulnérabilité à la menace du stéréotype peut aider à identifier des facteurs protecteurs pour les élèves.

Over 30 years of educational research has found that African American children generally underperform compared to their Asian and European American peers on academic indicators (for a review, see Gregory, Skiba, & Noguera, 2010; Vanneman, Hamilton, Anderson, & Rahman, 2009). Although larger institutional and systemic inequalities contribute to this underachievement (e.g., Felice, 1981; Gillborn, 2003; Kozol, 1991), psychological factors resulting from discrimination are also culpable (e.g., Neblett, Philip, Cogburn, & Sellers, 2006). In addition, stereotype threat has been found to negatively affect the performance of African American college students (Alter, Aronson, Darley, Rodriguez, & Ruble, 2010). Stereotype threat is the detrimental impact on performance that occurs when an individual's poor performance is at risk of confirming a task-relevant stereotype (e.g., Schmader, 2010; Steele, 1997). Although we continue to uncover individual factors and contexts that affect susceptibility to stereotype threat (Schmader, Johns, & Forbes, 2008), very few studies have examined the role of stereotype threat in children's lives. Our study attempts to rectify this gap by examining two specific individual differences (i.e., racial identity

and awareness of stereotypes) that may impact stereotype threat in a sample of African American children.

Stereotype threat significantly hinders academic performance for participants from stigmatized groups. The standard experimental paradigm involves two conditions: threat and no threat. In the threat condition, participants' membership in a stigmatized group is made salient. For example, Steele and Aronson (1995) asked African American participants to indicate their race in writing before administration of a GRE subtest. In the no-threat condition, group membership is not brought into awareness or participants are told that members of all groups do equally well on the task. Generally, participants who complete the task under stereotype threat conditions underperform. Using variations of this paradigm, stereotype threat has been shown to diminish performance for several stigmatized groups, including women's math performance and African American college students' performance on achievement and aptitude tests (for an overview, see Inzlicht & Schmader, 2012).

Since Steele and Aronson's (1995) original laboratory demonstrations of stereotype threat, numerous studies have documented the robustness of this phenomenon. The meta-analysis conducted by Nadler and Clark (2011) found stereotype threat effects regardless of how threat was activated. Performance decrements were shown for Verbal GRE Scores (Steele & Aronson, 1995), word completion tasks (Steele & Aronson, 1995), general cognitive functioning (Major, Spencer, Schmader, Wolfe, & Crocker, 1998; Ngyuen, O'Neal, & Ryan, 2003); and working memory (Schmader & Johns, 2003). In each study, African Americans were less successful when tasks were presented under stereotype threatening conditions. Outside of the laboratory, stereotype threat has been implicated in America's achievement gap (Alter et al., 2010). Students perform more poorly on academic tests when tested under stereotype threatening conditions (Steele & Aronson, 1995) and the damage perpetrated is not limited to immediate performance decrements (Inzlicht & Kang, 2010; Inzlicht, Tullett, Legault, & Kang, 2011).

Stereotype threat and academic achievement

Steele, Spencer, and Aronson (2002) assert that repeated exposure to stereotype threat may result in long-term disengagement and disidentification from stereotype-relevant domains. Several researchers (e.g., Osborne, 1999; Steele et al., 2002; Steele, 1997) distinguish between *disengagement* and *disidentification*. Disengagement from the domain refers to the immediate disinterest that occurs when stereotype threat is activated. That is, the individual may devalue performance on the relevant task. Continued disengagement ultimately results in disidentification -- when performance on tasks within the stereotype-relevant domain ceases to influence self-concept (Osborne, 1999). Once success within a specific domain becomes irrelevant, motivation to perform well in that domain may dissipate.

Stereotype threat has been implicated as one cause of school disengagement and the resulting poor school achievement for African American students (e.g., Crocker, Major, & Steele, 1998; Majors et al., 1998). For example, undergraduates devalue academic domains following repeated exposure to stereotype threatening situations (Aronson, Fried, & Good, 2002; Major et al., 1998; Major & Schmader, 1998), and high school students have been found to disidentify with academics over time in similar situations (Cokley, McClain, Jones, & Johnson, 2012; Forbes, Schmader & Allen, 2008). The most serious outcomes of long-term disidentification include dropping out of school and displaying disruptive behavior in the classroom (Klem & Connell, 2004). Thus, stereotype threat can potentially influence both short-term disengagement and long-term disidentification with academics (Steele, 1997; Steele & Aronson, 1995).

Stereotype threat and children

Despite the substantial body of research on the impact of stereotype threat on academic performance, there has been relatively little research on younger students, in particular, African American children. Much of the current research on stereotype threat activation in children has focused on gender stereotypes in math achievement. For example, Ambady, Shih, Kim, and Pittinsky

(2001) found stereotype activation effects for school-aged Asian American girls. They measured the effects of stereotype activation on a math test for both positive stereotypes (Asians perform better at math) and negative stereotypes (girls are not as good at math). The youngest (grades Kindergarten-2) and oldest (grades 6-8) participants experienced performance decrements when the gender stereotype was activated, and performance increments when the Asian stereotype was activated. Similarly, Huguet and Régner (2007) studied girls' math performance on a difficult cognitive task under stereotype threat. Boys in the threat condition outperformed the girls, but in the no-threat condition, the opposite occurred: the girls outperformed the boys. This finding supports the malleability of stereotype threat activation in children.

If girls are susceptible to stereotype threat, it is likely that other children may be too. African American children meet the criteria for susceptibility to stereotype threat (Aronson et al., 1999; Steele & Aronson, 1995), including an awareness of stereotypes (Aboud, 1988; McKown & Weinstein, 2003) and engagement in a task or domain for which relevant stereotypes exist. Crucially, for stereotype threat to occur, the specific task must be performed with the participants' knowledge that their performance is being assessed. African American children are engaged in and identify with school (i.e., the relevant domain; Osborne, 1999), and by virtue of being in school, these students are likely highly aware that their ability is continually evaluated. In short, any given school day has the potential to place an African American student in a stereotype-threat situation. Thus, it is expected that they will perform poorly when administered an academic task under stereotype threat.

Integrated process model of stereotype threat

A number of theoretical constructs have been proposed to make sense of the robustness of the stereotype threat phenomenon. Schmader et al. (2008) proposed an "integrated process model" that incorporates various underlying mechanisms (i.e., physiological stress response, monitoring of performance, and efforts to suppress negative thoughts and emotions) that affect working

memory efficiency and thus performance on academic (and other) tasks. Of particular interest is the conceptualization of stereotype threat as a cognitive imbalance that is caused by individual and contextual factors. According to Schmader et al. (2008), stereotype threat is triggered by a disconnect between an individual's concept of self, their group, and the ability domain. For our study, we explicitly examined two of these constructs: (a) the concept of group by examining knowledge of stereotypes of Black people, and (b) the concept of self by examining racial identity.

The role of stereotype knowledge

Children of various ethnic backgrounds show an early awareness of stereotypes (e.g., Aboud, 1988; Ambady et al., 2001; Pauker, Ambady, & Apfelbaum, 2010). In particular, African American children are aware of what stereotypes are, and can identify general stereotypes about their racial group (e.g., McKown & Weinstein, 2003). McKown and colleagues assessed children's ability to infer others' stereotypes and awareness of broadly held stereotypes (or "stereotype consciousness") with a vignette-based interview (McKown & Strambler, 2009; McKown & Weinstein, 2003). Children (ages 6-10) were provided with information about a place called "Kidland" that is inhabited by Green and Blue people via two vignettes (one with information that Greens think Blues are not smart). Extending the vignette work, McKown and Strambler (2009) also asked children about real-world stereotypes using an open-ended interview (e.g., How is the real world like Kidland?). The researchers coded children as having "stereotype consciousness" if their responses included mention of stereotypes, prejudice, discrimination, or conflict between ethnic groups. Children from stigmatized groups (i.e., Latinos, African Americans, multiracial) who demonstrated "stereotype consciousness" were found to succumb to stereotype threat on an alphabet puzzle task (McKown & Weinstein, 2003) and the Digit Span subtest of the WISC-III (McKown & Strambler, 2009).

In an effort to extend McKown and colleagues' work, our goal was to examine African American children's knowledge of stereotypes about African Americans, rather than abstract "blue"

children or about stereotypes in general, and to determine if knowledge about race-specific stereotypes has an impact on performance on a challenging academic task (i.e., verbal achievement). Our goal was to examine African American children's spontaneous generation of stereotypes about their own racial group, using minimal prompting. Based on memory development research (e.g., Ornstein, Haden, & Elischberger, 2006), *production* of specific stereotypes serves as stronger evidence of their salience. We feel this technique can provide stronger evidence to support the role of stereotype knowledge on susceptibility to stereotype threat in the lab, or more indirectly in natural testing contexts (i.e., school).

The role of racial identity

Group membership is an important aspect of self-concept (Roberts et al., 1999). Similar to gender, ethnic group membership is highly salient because of the physical characteristics associated with it. Ethnic *identity* incorporates the value placed on ethnic group membership directly related to self-concept. Phinney and Ong (2007) describe ethnic identity as developing over time through ongoing exploration and commitment. As a process, racial/ethnic identity development may provide protection against discrimination (for a discussion about how racial and ethnic identity overlap for Black individuals, see Scottham, Cooke, Sellers, & Ford, 2010). There is evidence for the relationship between racial identity and susceptibility to stereotype threat in college students. Davis, Aronson, and Salinas (2006) assessed dimensions of Black identity using the *Racial Identity Attitudes Scale-Revised* (Helms & Parham, 1990). Participants later completed a verbal task under different threat conditions. In the low-threat condition, those with a more developed Black identity (endorsement of a strong connectedness and belongingness with being Black) had higher scores than those in earlier stages of identity development. Racial identity did not influence performance in the high-threat conditions. The authors proposed that individual differences might have less potency when task demands are high. Alternatively, any protection afforded by an internalized view of one's racial group may simply not provide

enough protection under highly stereotype-threatening conditions.

Sellers, Morgan, and Brown (2001) proposed a model of Black identity that has been tested with older children and adolescents. This model of ethnic/racial identity does not focus on the *process* of ethnic identity development but instead looks at the many dimensions of the *content* of racial identity. According to Sellers et al. (2001), an individual's Black identity is not static nor does it move along predetermined stages. Rather, they propose that individuals vary along multiple dimensions that contribute to ethnic identity. The Multidimensional Model of Racial Identity (MMRI) describes racial identity development in Blacks with respect to the importance placed on group membership as well as the individual's conception of the meaning of being a member of the racial group.

Sellers, Rowley, Chavous, Shelton, and Smith (1997) developed an assessment of racial identity based on the MMRI. The *Mulitdimensional Inventory of Black Identity* is a self-report measure of an individual's identity on the three stable MMRI dimensions (and subcategories): Centrality, Ideology (i.e., Nationalist, Assimilationist, Oppressed Minority, and Humanist), and Regard (i.e., Private and Public). The *Multidimensional Inventory of Black Identity-Teen* (MIBI-t) was developed to assess racial identity in early and middle adolescents (Scottham, Sellers, & Nyguen, 2008). We used the MIBI-t to measure racial identity in an effort to understand how this individual difference factor might influence children's susceptibility to stereotype threat.

Chavous, Bernat, Schmeelk-Cone, Caldwell, and Zimmerman (2003) investigated the racial identity development of African American adolescents. Racial identity was measured in a sample of 17-year-olds with a shortened form of the adult MIBI (Sellers et al., 1997) focusing specifically on the MMRI domains of regard (public and private) and centrality. Chavous et al. used cluster analysis to reveal four profile groupings. Our goal was to use the MIBI-t with a group of Black children to determine if similar racial identity profiles emerged, and then examine if this individual

difference factor moderates the stereotype threat effect for Black children.

The current study

Our study focused on the impact of stereotype threat on the academic performance of African American children. We focused on children between 10 to 12 years of age based on previous research that indicates that in this age range, minority children begin to show a discrepancy between explicitly stated preferences for their in-group compared to implicit associations (Dunham, Baron, & Banaji, 2006, 2007). Additionally, it was expected that at this age, children would have a sufficient level of school engagement and they would value school and academic success. We examined two factors that may moderate stereotype threat vulnerability in African American children: knowledge of specific racial stereotypes and Black identity profiles.

We addressed the following research questions:

(1) What stereotypes are children aware of? In past research, African American children were found to have a general "stereotype consciousness" (McKown & Weintstein, 2003). We were interested in determining the specific and salient stereotypes that children are aware of.

(2) Are African American children influenced by the traditional stereotype threat manipulation? Does an awareness of Black stereotypes in general, or specific stereotypes in particular, moderate the stereotype threat effect?

(3) What types of Black identity profiles do children of this age range have? Can children this young be classified in terms of coherent racial identities?

(4) Do any of the Black Identity profiles (as derived from the MIBI-t) moderate the stereotype threat effect? That is, are particular identity profiles more vulnerable? Do any of the identity profiles provide protection against threat effects?

Method

Participants

Participants were 190 African American children enrolled in general education classes (i.e., none were receiving special education services). The sample (64% girls) ranged in age from 10 to 12 years (M = 11.03, SD = .82). Children were recruited from churches, cultural enrichment programs, and after-school programs serving African American families from a range of social class levels in various Midwest communities. Fifty-eight percent of the sample was recruited from sites specifically serving low-SES families; the remaining 42% were classified as middle- or high-SES based on the educational level of parents and/or fees associated with participation in the program. Four children did not participate in both sessions, leaving our final sample for analysis as 186. No incentive was provided for participation.

Measures

The *Multidimensional Inventory of Black Identity-Teen* (MIBI-t; Scottham et al., 2008) includes 21 items and seven subscales that measure aspects of Black racial identity. The MIBI-t is a revised version of the adult MIBI (Sellers et al., 1997) and has a lower reading level, fewer items, and no reverse-scored items. Participants respond to questions about their feelings toward Blacks as a group (i.e., Private Regard), their view of society's beliefs about Blacks (i.e., Public Regard), the importance of being Black to their self-concept (i.e., Centrality), and their approach to dealing with issues about Blacks (i.e., Ideology). The Ideology subscale has traditionally been divided into four sections: (a) Assimilationist (beliefs that Blacks should adopt majority culture), (b) Humanist (beliefs that similarities should be emphasized and differences downplayed), (c) Oppressed Minority (beliefs that Blacks should join forces with other minority groups), and (d) Nationalist (beliefs that one should emphasize African descent as part of one's identity). Participants rated their level of agreement with statements such as "I am proud to be Black" on a Likert scale ranging from 1 (*really disagree*) to 5 (*really agree*). Scores closer to 5 indicate more agreement with the central theme of the subscale. Scottham et al. (2008) report MIBI-t subscale alphas

between .50 (Humanist Ideology) and .76 (Public Regard). The alpha values in the present sample ranged from .43 (Centrality) to .82 (Nationalist).

The *Stereotype Awareness Task* was designed for this study and asked participants to list all the stereotypes they know about Black or African American people. The exact writing prompt at the top of the page was: "*Stereotypes are ideas about a group that may or may not be true for all the people or things in that group. One example of a stereotype is "pit bulls are mean." Many people believe this statement, but it is not really true of all pit bulls. Please list the stereotypes that you have heard about Black or African American people."* Blank ruled paper was provided below for participants to list their responses. No additional prompts or cues were provided.

The *Test of Adolescent Language* (TOAL 2nd ed.; Hammill, Brown, Larsen, & Wiederholt, 1987) is a challenging language arts test designed for children aged 12 through 18.5 that includes eight subtests for listening, speaking, reading, and writing (Stinnett, 1992). We used the Reading/Vocabulary subtest (30 items). Participants were asked to read a target word list and determine which two words out of a group of five words most nearly fit the concept represented by the target word list. For instance, if the target word list included blue, green, orange, and brown, the student would need to choose words from the following list that also fit this group (i.e., fox, car, **red**, computer, **black**). As participants progress through the test, the items become increasingly more difficult (e.g., target word list: nuisance, disturbance, commotion; choices: construct, pierce, **confusion**, **distress**). Participants received credit if they correctly identified both words. Although the test was designed for older adolescents it was chosen because our goal was to use an assessment that was both challenging and academic.

Procedure

The participants attended two group-testing sessions that took place in the location of recruitment after receiving permission from the executive director of the recruitment site. Only children who obtained written parental consent and provided assent were

tested. During session 1, they completed the *Stereotype Awareness Task*, a demographics form, and the MIBI-t. Children were administered the task by an unfamiliar Black female experimenter (first author). To diminish the connection between the Stereotype Awareness Task and the stereotype threat paradigm, the second testing session occurred one to two weeks later (M =12 days). At the second session participants were randomly assigned to one of the two conditions of the standard stereotype threat paradigm (Steele & Aronson, 1995). Children were tested by an unfamiliar White experimenter after child assent was obtained for the second session. In both conditions, participants completed the *Test of Adolescent Language* (TOAL) after the manipulation. In the threat condition, children were told that the test was a measure of intelligence and that the scores of Black and White children would be compared. In the neutral condition, children were told that individual questions were being tested out to determine if they should remain on future tests. All students, regardless of assignment to condition, were told to try to do their best work. Children were subsequently debriefed and told that the TOAL was not going to be used to make decisions about them or other students. Additionally, participants were invited to ask questions about stereotypes. Lastly, participants were asked to talk with their parents about their participation in the research, stereotypes, and what it means to be Black.

Results

Stereotype awareness

On average, participants spontaneously listed 5.1 stereotypes (SD = 4.0). Seven common categories of stereotypes were evident (see Table 1). Two researchers coded 30% of the sample to assess reliability. The reliability across two coders was variable across categories. For four stereotype categories (i.e., intelligence, poor, unattractive, and good athletes) we obtained 100% agreement. Agreement was at 90% for two of the stereotypes (i.e., criminal, violent). The remaining category, "worthless," encompassed responses such as "we won't amount to nothing"; "useless"; and "worth nothing." This category resulted in the lowest agreement between coders (75%) due to one coder taking a more conservative approach (e.g., not coding responses such as "we are a

Stereotype Listed	10 year olds $n = 61$	11 year olds $n = 61$	12 year olds $n = 64$
Blacks are less intelligent than Whites *	36%	39%	55%
Blacks are worthless	39%	33%	33%
Blacks are poor *	19%	35%	47%
Blacks are unattractive	32%	26%	38%
Blacks are criminals	27%	26%	41%
Blacks are violent	43%	37%	36%
Blacks are good athletes	3%	3%	1.5%

Note: * Age group trend significant at $p < .05$.

TABLE 1:
Percent of each age group spontaneously listing stereotypes.

disgrace" that did not include worth/worthless, or a direct synonym of worthless, as a member of this category). Disagreements were resolved through discussion. Sample verbatim responses appear in the Appendix. Age differences in awareness of stereotypes were evident, $F(2,171) = 3.34, p = .038$. Twelve-year-old children ($M = 6.1$; $SD = 4.1$) generated more stereotypes than 11-year-olds ($M = 4.6$; $SD = 3.9$) or 10-year-olds ($M = 4.4$; $SD = 3.7$).

Stereotype awareness as a moderator of the stereotype threat effect

At the outset, we were unable to predict how many stereotypes (and which types) children would spontaneously generate. Because 94% of our participants were able to identify at least one race-based stereotype, it was not possible to divide children into groups based on overall awareness of stereotypes. Interestingly, 44% spontaneously listed the stereotype that *Blacks are less intelligent than Whites*, which was the most common stereotype listed. Moreover, this stereotype is the most relevant with respect to stereotype threat activation for academic performance. An almost equal split between children who did and did not list the intelligence stereotype prompted us to use this as a quasi-independent variable.

As the TOAL is a challenging language arts test designed for older adolescents (ages 12-18.5), there were age differences in the scores on the TOAL with twelve-year olds ($M = 13.2$; $SD = 4.7$)

and eleven-year olds (M = 13.2; SD = 4.1) scoring higher than the ten-year olds (M = 11.25, SD = 4.0), $F(2,156) = 3.7, p = .027$. Scores ranged from 0 to 23 out of a possible 30 items (overall sample M = 12.4; SD = 4.5). We conducted a 2 (Stereotype Threat: threat vs. neutral) x 2 (Intelligence Stereotype Awareness: stereotype listed vs. stereotype not listed) ANCOVA on TOAL scores. After evaluating the homogeneity-of-regression assumption, age was included as a covariate because of the significant age trends in TOAL scores and number of stereotypes generated. There was a main effect of Stereotype Threat, $F(1, 143) = 6.60, p = .011, \eta_p^2 = .037$, with those in the threat condition scoring lower on the TOAL (M_{adj} = 11.77, SD = 4.14) than those in the neutral condition (M_{adj} = 13.21, SD = 4.16). This main effect was qualified by a significant interaction with Stereotype Awareness, $F(1,143) = 5.54, p = .02, \eta_p^2 = .044$. An analysis of the simple effects showed that the stereotype threat effect was present only for those with salient awareness of the intelligence stereotype, $F(1,143) = 10.1, p = .002, \eta_p^2 = .066$. Participants who spontaneously listed the intelligence stereotype had lower TOAL scores in the threat condition (M_{adj} = 11.35, SD = 4.92) than those in the neutral condition (M_{adj} = 14.96, SD = 4.74). For children unaware of the intelligence stereotype, there were no differences in performance between the two conditions (neutral M_{adj} = 12.26, SD = 4.43; threat M_{adj} = 12.89, SD = 3.36). What is evident from this pattern of means, however, is that although the expected difference in performance between the threat and neutral conditions was found, we do not see a detrimental effect on performance for the threat condition (see Figure 1). Rather, we see that children who were aware of the intelligence stereotype, when placed in the neutral (i.e., non-threat) testing condition, had assessment scores more consistent with a *release from stereotype threat*. We return to this point in the Discussion.

Black identity

Initially, the MIBI-t subscale scores were used to categorize participants into profiles developed by Chavous et al. (2003). The profiles identified by Chavous et al. include Buffering/Defensive, Low Connectedness/High Affinity, Idealized, and Alienated. However, these profiles did not adequately capture the patterns

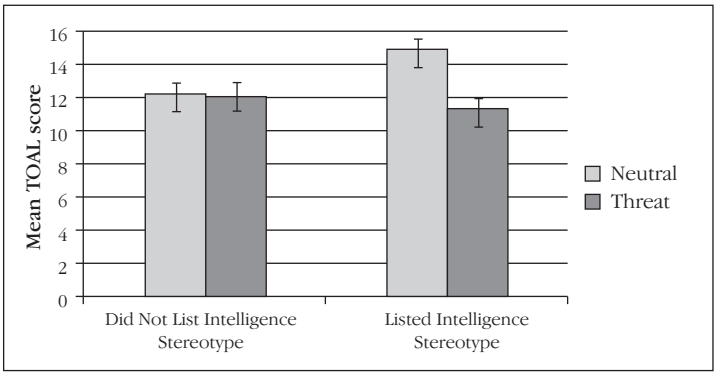

FIGURE 1:
Mean adjusted scores on the Test of Adolescent Language (TOAL) as a function of stereotype threat condition for African American children who did or did not spontaneously list the pervasive stereotype "Blacks are less intelligent than Whites."

of scores for this sample. In particular, 60 participants (32% of the sample) did not fit one of the four profiles.

Instead, following Banks and Kohn-Woods (2007) we used a hierarchical cluster analysis of MIBI-t responses to determine group membership for all participants in our sample. The furthest neighbor linkage method was used to maximize the distance between clusters. These analyses revealed six distinct clusters that we labeled Marginalized, Assimilators, Ethnically Diffuse, High Connected, Low Connected/High Affinity, and Idealized (see Table 2 for mean MIBI-t scores for each cluster). The labels were chosen based on an analysis of the relative scores on the MIBI subscales, considering (a) the specific subscales and what they represent, (b) whether the mean for the cluster fell above or below the median, (c) whether the mean was in the top or bottom third (with six numbers it is not easy to specify an upper and lower quartile), and (d) if the subscale scores were highly variable or not. An additional consideration was the desire to choose labels that were meaningful within this literature.

Labeling the clusters. As can be seen in Table 2, the scores for *Private Regard* are not very variable, with a 1.07 difference between highest and lowest mean. In contrast, there is a 5.47 range in scores for *Public Regard*. Other subscales (e.g., *Assimilationist*) have high variability but are also very skewed, with one very high mean. This outlier mean is a defining characteristic of the cluster that we labeled "*Assimilators*." Assimilators

TABLE 2:
MIBI-t means for the data-driven Black identity profiles.

	Cluster					
MIBI-t Scales	1 Assimila-tors	2 High Con-nected	3 Ideal-ized	4 Ethni-cally Diffuse	5 Low Con-nected	6 Margin-alized
Centrality	11.7 (2.2)	12.7 (2.3)	12.2 (2.4)	10.5 (2.5)	9.4 (2.4)	11.5 (2.5)
Private Regard	13.9 (2.0)	14.3 (1.1)	14.1 (1.7)	13.2 (1.9)	13.7 (1.8)	14.1 (1.2)
Public Regard	10.9 (2.7)	8.8 (2.7)	12.6 (2.0)	7.6 (1.9)	11.4 (2.7)	7.2 (2.7)
Assimilationist	10.4 (1.8)	5.0 (2.0)	5.9 (2.3)	5.1 (2.1)	4.5 (2.1)	4.0 (1.6)
Humanist	10.9 (2.9)	10.4 (2.8)	10.2 (3.1)	8.5 (2.8)	6.7 (2.3)	7.1 (3.2)
Minority	11.2 (2.6)	13.2 (1.7)	12.9 (1.6)	8.6 (2.2)	7.8 (2.6)	11.9 (2.2)
Nationalist	10.5 (2.2)	12.4 (1.9)	6.3 (2.5)	9.7 (2.2)	4.9 (2.2)	4.9 (2.3)

Note. The highest possible MIBI-t subscale score is 15. Standard deviations are shown in parentheses.

were above the median for *Centrality*, suggesting that being Black is important to their sense of identity, while at the same time being below the median on *Public Regard* and *Minority* ideology, indicating a lower level of endorsement towards Blacks and minority groups. Included in this cluster is the highest mean on the *Humanist* ideology, which emphasizes the similarities among all humans and a de-emphasis on the role of race. Taken together, this pattern hints at a desire to assimilate into majority culture.

The cluster that we labeled "*High Connected*" includes the highest means for four subscales: *Centrality*, *Private Regard*, *Oppressed Minority*, and *Nationalist*. The score for Public Regard was in the middle, which has been described as unrelated to African American adolescents' self-concept because a moderate score indicates that an individual is aware that the greater culture's regard for African Americans is neither all good nor all bad (Rowley, Sellers, Chavous, & Smith, 1998). Mid-level scores were found for the *Assimilationist* and *Humanist* subscale scores. The pattern here suggests that participants in this cluster view being Black as important to their identity, but they also acknowledge the benefits of joining with other minority groups to fight oppression.

The "*Idealized*" cluster includes five subscale scores in the top third (one top score, four were second highest) for all MIBI subscales, with a below median score for the *Nationalist* subscale. Participants in this cluster had the highest mean for *Public Regard,* suggesting that these children view Black culture in an idealized way, and they have internalized their Black identity as both important and desirable as revealed by high means for *Centrality*, *Minority Affiliation*, and *Private Regard*.

The group with the lowest mean for *Private Regard*, and with mean scores in the lower third for *Centrality*, *Public Regard*, and *Minority Affiliation*, but who had a moderate level of *Assimilationist, Humanist,* and *Nationalist* Ideology were labeled as "*Ethnically Diffuse*." Keeping in mind that our participants are 10-12 year old preadolescents, the pattern here suggests neither a strong connection to Black or ethnic minority culture, nor an overly strong desire to assimilate into majority culture. Additional support for the "diffuse" descriptor comes from that fact that a quarter of the youngest participants (10-year-olds) fit into this one cluster.

The "*Low Connected/High Affinity*" group also had high scores on *Public Regard*, but the lowest or second-lowest means for the other subscales, including the lowest *Centrality* score. Although they endorse the idea that Blacks have contributed to society in positive ways, they do not see being Black as central to their identity. Finally, the "*Marginalized*" cluster includes participants with the lowest means for *Public Regard* and for *Assimilationist* Ideology. They also score below the median for *Humanist* and *Nationalist* Ideology, and *Centrality*. They have a moderate sense of *Minority* affiliation. This pattern suggests individuals who do not feel a strong identification with either their own ethnic minority group or the mainstream majority culture.

Black identity and other sample characteristics. Prior to determining whether one's membership in the data-driven identity profiles moderates the stereotype threat effect, we explored whether the groups differed in any other systematic ways. Although the Assimilators, Ethnically Diffuse, and Low Connected/High Affinity clusters had more of the younger students, overall, the relationship between the six profiles and age (10-, 11-, or

12-year olds) was not significant, χ^2 (10, N = 177) = 15.1, p = .13. The relationship between profile and gender was not significant, χ^2 (5, N = 179) = 5.9, p = .31, nor were the profiles different with respect to low vs. middle/high SES testing location, χ^2 (5, N = 179) = 1.1, p = .96 The profile groups did not differ on the number of stereotypes they were able to generate, F(5,171) = 1.55, p = .18.

Black identity as a moderator of the stereotype threat effect

A 2 (Stereotype Threat: threat vs. neutral) x 6 (Black Identity profile) ANOVA was conducted to test the hypothesis that Black Identity would moderate the stereotype threat effect. There was a main effect of Black Identity type, F(5, 140) = 4.31, p = .001, η_p^2 = .13 but no main effect of Stereotype Threat condition, F(1, 140) = 2.66, p = .11, on TOAL scores. However, the interaction was significant, F(5, 140)= 3.05, p = .01, η_p^2 = .10 (see Table 3). Simple effects analyses revealed that participants in the Ethnically Diffuse profile, F(1, 140) = 4.97, p = .03, η_p^2 = .03, and those in the High Connected profile, F(1, 140) = 8.81, p = .004, η_p^2 = .06,

TABLE 3: TOAL scores by stereotype threat condition for each Black identity profile.

	Neutral Condition	Threat Condition	Total
Ethnically Diffuse*	13.54 (4.24) n = 14	10.12 (4.05) n = 16	11.66 (4.41) N = 29
High Connected*	18.07 (3.62) n = 15	13.10 (3.35) n = 10	16.08 (4.24) N = 25
Assimilators	11.13 (3.90) n = 15	13.82 (4.66) n = 11	12.27 (4.36) N = 26
Idealized	11.76 (4.40) n = 17	12.83 (4.97) n = 12	12.21 (4.59) N = 29
Low Connected	10.77 (4.75) n = 13	10.38 (.92) n = 8	10.62 (3.72) N = 21
Marginalized	11.80 (3.50) n = 10	10.17 (4.39) n = 12	10.91 (4.00) N = 22

Note: Standard deviations are shown in parentheses. The difference in TOAL scores between the neutral and threat conditions was significant for profile types denoted with an asterisk (p < .05).

were the only two groups who demonstrated the stereotype threat effect. Although this pattern of findings is interesting, the analysis divides the sample into conditions with between 8 and 17 participants per cell. For group differences, observed power was .60 to .84; however, other comparisons were underpowered for this exploratory analysis.

Discussion

Stereotype threat is a factor in the academic lives of African American youth. We found evidence of this phenomenon among 10- to 12-year-old children. The children in our study who were in a classic stereotype threat condition performed more poorly on an academic task compared to their peers who were tested in a no-threat condition. In addition, we found that individual differences, such as awareness of stereotypes and Black identity moderated the stereotype threat effect. Our discussion focuses on these findings and links to previous literature.

We found that almost all of the children in our study were able to generate at least one race-based stereotype and about half of the children spontaneously generated the academic-specific stereotype that *Blacks are less intelligent than Whites*. By the time African American children are 10 years of age, most of them are aware of the stereotypes that exist about their ethnic group. The children in our study varied in their racial identity, understood the group label, and were able to name the stereotypes that exist in our society about this group.

Having an awareness of these stereotypes not only reflects some group knowledge, but also affected the children's experiences with stereotype threat. Steele (1997) stated that individuals must be aware of the stereotypes about a group that they belong to in order for it to affect their performance in the stereotype-relevant domain. This is exactly what we found. Only the children who spontaneously listed the stereotype *Blacks are less intelligent than Whites* showed the expected performance differences on the academic task. For students who did not list the intelligence stereotype, there was no difference in the academic task scores as a function of testing condition.

However, there are two important caveats. First, although the expected difference for those who were aware of the intelligence stereotype was found – lower scores in the threat condition relative to the neutral condition – the absolute level of performance is not what we would have predicted based on past research. Our pattern of results was consistent with the idea that rather than the threat-inducing instructions having a detrimental effect on performance, the neutral instructions given to the students who were aware of the intelligence stereotype *released* them from stereotype threat. Why the children in our study exhibited this pattern of effects is unclear. It is possible that the underlying mechanism of stereotype threat in children is different than it is for adults. It could also be that children's lower working memory capacity (Siegel & Ryan, 1989) taxed their cognitive resources and thus influenced performance in an unexpected way (Schmader et al., 2008). Additionally, in the current school environment of the U.S., where students are constantly being tested and assessed, Black children may be in a constant state of stereotype threat. For the children in our study, it was only through explicit knowledge (or salience of that knowledge) of the relevant stereotype *and* being told that the test they were going to take was not indicative of ability that they potentially found a release from stereotype threat. This finding is unusual, but could inform future interventions of stereotype threat created for children (Blackwell, Tresniewski, & Dweck, 2007; Cohen, Garcia, Apfel, & Master, 2006; Good, Aronson, & Inzlicht, 2003). A second caveat is that we are unable to determine if the children who did not list the intelligence stereotype were actually aware of this particular stereotype or not. We do know that it was not salient enough for it to be listed (or they were unwilling to state it) when asked to generate all race-based stereotypes that they were aware of.

Beyond knowing that the children in our study were aware of stereotypes about African Americans, we wanted to more closely examine the content of their racial identity using the MIBI-t (Scottham et al., 2008). We first attempted to apply the racial identity categories delineated by Chavous et al. (2003). Applying their categories was problematic with our sample of children, as a full third of our participants did not fit into their groupings. Instead we used a data-driven approach and found evidence for

six distinct clusters. Based on the patterns of response on the MIBI-t within and across clusters, we labeled the racial identity types as: Marginalized, Assimilators, Ethnically Diffuse, High Connected, Low Connected/High Affinity, and Idealized. Even with children as young as 10-12, we found variability in the way Black children think about their racial identity.

Many of these racial identity clusters were similar to ways in which ethnic and racial identities have been conceptualized in the past (Chavous et al., 2003; Phinney & Ong, 2007), but they were not an exact match. For example, we considered calling the "Ethnically Diffuse" group a sub-type of the "Marginalized" group, but their moderate Nationalist ideology precluded that label. These children did not feel strongly connected with being Black or part of the majority U.S. culture (the hallmark of a "marginalized" ethnic identity), but at the same time had a moderate Nationalist ideology. After numerous discussions we decided that these children might not be thinking about their racial identity in very developed or complex ways yet. Thus, we used Marcia's (1966) identity "diffusion" label, meaning an unexplored identity. Children in the cluster we labeled "High Connected" had the highest Centrality, Private Regard, and Minority Ideology. For these children being Black was an important part of their identity and they connected with their culture in numerous ways. Overall, we found that the children in our study thought about their ethnic identity and could be classified in ways that somewhat overlap with the racial identity classifications found with high school students (Chavous et al., 2003).

These Black identity profiles were found to moderate the impact of stereotype threat on the children's performance on the academic task. As found with stereotype awareness, the participants labeled "High Connected" and "Ethnically Diffuse" were the only profiles to show the stereotype threat effect. The children who fit the other profiles (Marginalized, Assimilators, Low Connected/High Affinity, and Idealized) had similar scores across both conditions, indicating no stereotype threat effect. Having a strong identity to a group that is stereotyped (being Black in the case of these children) may make that stereotype particularly threatening to these Highly Connected children. This pattern

parallels Schmader's (2002) finding that women who had a stronger gender identity exhibited the stereotype threat effect; women with lower levels of gender identity did not exhibit the effect. At the same time, however, the children in the neutral condition who were Highly Connected scored much higher on the task than any of the other groups, indicating that connectedness may serve as a potential protective factor in the academic realm. These results are tentative, as the need to divide our sample into six profiles (rather than the four Chavous profiles) resulted in a small number of participants per condition, and thus low power is a concern. However, the results are suggestive that further work examining Black identity profiles could be a fruitful avenue of research for stereotype threat intervention research.

Limitations and future directions

Our study contributes to the literature on stereotype threat by extending past work by including a relatively large sample of young African American children, using a challenging academic task, and by exploring two specific individual difference factors that had the potential to moderate the robust stereotype threat effects found with college students. We do, however, note some limitations to our study. First, although there has been a call to conduct more naturalistic studies (Huguet & Régner, 2007), our study was conducted on a community sample in a community setting. However, our design still has more features in common with a laboratory study than with a naturalistic classroom setting, although it is a step in the right direction. Second, it would be interesting to be able to simultaneously look at Black identity and stereotype awareness. However, when we subdivided the sample, the cell sizes were too small and unequal to support strong conclusions.

Our sample was on the brink of adolescent identity development in general, and ethnic identity development in particular (Marcia, 1966; Phinney & Ong, 2007). Although the data-driven identity profiles that we derived may not represent these individual's changing or final profiles, they represent a snapshot in the course of these children's identity development. Future research is needed to explore, in a longitudinal way, preadolescent and

adolescent identity development and its role in academic achievement and susceptibility or buffering to systemic effects of stereotype threat.

Conclusions

Our study examined the role of stereotype threat on the academic performance of African American children. In addition to examining a younger group of students not typically studied, this research illustrates the role of stereotype awareness and Black identity profiles as moderators of the stereotype threat effect. Awareness of stereotypes explicitly connected to the domain of interest is a pre-requisite for experiencing stereotype threat. Although this awareness puts children at risk for experiencing stereotype threat, we also found that there are conditions that afford the *release* from stereotype threat effects.

We also found that particular types of Black identity can moderate experiences with stereotype threat. The stereotype threat effect was only evident for individuals with two types of Black identity: "High Connected" and "Ethnically Diffuse." We hope that such a revelation will lead to ways in which Black identity can act as a protective factor against stereotype threat. As noted earlier, and consistent with our findings, any given school day in the United States, with the current emphasis on standardized testing, has the potential to continually place students who are aware of negative stereotypes about their ethnic group at risk for stereotype threat. However, parents, teachers, and administrators have some control over the conditions that influence whether students are likely to experience this threat. Moreover, influential adults may play an important role in the racial/ethnic socialization of these youth in ways that can strengthen their connection and pride to their Black identity. Identifying protective factors holds one key to breaking the links among stereotype threat, disengagement, and disidentification with academics, in the service of closing the achievement gap.

References

Aboud, F. E. (1988). *Children and prejudice*. London: B. Blackwell.

Alter, A. L., Aronson, J., Darley, J. M., Rodriguez, C., & Ruble, D. N. (2010). Rising to the threat: Reducing stereotype threat by reframing the threat as a challenge. *Journal of Experimental Social Psychology*, *46*, 166-171.

Ambady, N., Shih, M., Kim, A., & Pittinsky, T. L. (2001). Stereotype susceptibility in children: Effects of identity activation on quantitative performance. *Psychological Science*, *12*, 385-390.

Aronson, J., Fried, C. B., & Good, C. (2002). Reducing the effects of stereotype threat on African American college students by shaping theories of intelligence. *Journal of Experimental Social Psychology*, *38*, 113-125.

Aronson, J., Lustina, M. J., Good, C., Keogh, K., Steele, C., & Brown, J. (1999). When white men can't do math: Necessary and sufficient factors in stereotype threat. *Journal of Experimental Social Psychology*, *35*, 29-46.

Banks, K. H., & Kohn-Wood, L. P. (2007). The influence of racial identity profiles on the relationship between racial discrimination and depressive symptoms. *Journal of Black Psychology*, *33*, 331-354.

Blackwell, L., Tresniewski, K., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development, 78,* 246-263.

Chavous, T., Bernat, D., Schmeelk-Cone, K., Caldwell, C., & Zimmerman, M. (2003). Racial identity and academic attainment among African American adolescents. *Child Development, 47*, 1-43.

Cohen, G. L., Garcia, J., Apfel, N., & Master, A. (2006). Reducing the racial achievement gap: A social-psychological intervention. *Science Magazine, 313,* 1307-1310.

Cokley, K., McClain, S., Jones, M., & Johnson, S. (2012). A preliminary investigation of academic disidentification, racial identity,

and academic achievement among African American adolescents. *The High School Journal*, *95*, 54-68.

Crocker, J., Major, B., & Steele, C. M. (1998). Social stigma. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., Vol. 2, pp. 504–553). Boston, MA: McGraw Hill.

Davis, C., Aronson, J., & Salinas, M. (2006). Shades of threat: Racial identity as a moderator of stereotype threat. *Journal of Black Psychology*, *32*, 399-417.

Dunham, Y., Baron, A. S., & Banaji, M. R. (2006). From American city to Japanese village: A cross-cultural investigation of implicit race attitudes. *Child Development*, *77*, 1268-1281.

Dunham, Y., Baron, A. S., & Banaji, M. R. (2007). Children and social groups: A developmental analysis of implicit consistency in Hispanic Americans. *Self and Identity*, *6*, 238-255.

Felice, L. G. (1981). Black student dropout behavior: Disengagement from school rejection and racial discrimination. *Journal of Negro Education*, *50*, 415-424.

Forbes, C. E., Schmader, T., & Allen, J. J. (2008). The role of devaluing and discounting in performance monitoring: A neurophysiological study of minorities under threat. *Social cognitive and affective neuroscience, 3*, 253-261.

Gillborn, D. (2003). *Race, ethnicity and education: Teaching and learning in multi-ethnic schools*. London: Unwin Hyman/ Routledge.

Good, C., Aronson, J., & Inzlicht, M. (2003). Improving adolescents' standardized test performance: An intervention to reduce the effects of stereotype threat. *Journal of Applied Developmental Psychology, 24,* 645-662.

Gregory, A., Skiba, R. J., & Noguera, P. A. (2010). The achievement gap and the discipline gap two sides of the same coin? *Educational Researcher*, *39*, 59-68.

Hammill, D. D., Brown, V. L., Larsen, S. C., & Wiederholt, J. L. (1987). *Test of Adolescent Language-2*. Pro-Ed, Austin, TX.

Helms, J. E., & Parham, T. A. (1990). The relationship between black racial identity attitudes and cognitive styles. In J. E. Helms (Ed.), *Black and White racial identity: Theory, research, and practice* (pp. 119–131). Westport, CT: Greenwood Press.

Huguet, P., & Régner, I. (2007). Stereotype threat among schoolgirls in quasi-ordinary classroom circumstances. *Journal of Educational Psychology, 99*, 545-560.

Inzlicht, M., & Kang, S. K. (2010). Stereotype threat spillover: How coping with threats to social identity affects aggression, eating, decision making, and attention. *Journal of Personality and Social Psychology*, *99*, 467-481.

Inzlicht, M., & Schmader, T. (Eds.). (2012). *Stereotype threat: Theory, process, and application*. New York, NY: Oxford University Press.

Inzlicht, M., Tullett, A. M., Legault, L., & Kang, S. K. (2011). Lingering effects: Stereotype threat hurts more than you think. *Social Issues and Policy Review*, *5*, 227-256.

Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health*, *74*, 262-273.

Kozol, J. (1991). *Savage inequalities: Children in America's schools*. New York, NY: Harper Collins.

Major, B., & Schmader, T. (1998). Coping with stigma through psychological disengagement. In J. Swim & C. Stangor (Eds.), *Stigma: The target's perspective.* New York, NY: Academic Press.

Major, B., Spencer, S., Schmader, T., Wolfe, C., & Crocker, J. (1998). Coping with negative stereotypes about intellectual performance: The role of psychological disengagement. *Personality & Social Psychology Bulletin, 24,* 34-50.

Marcia, J. (1966). Development and validation of ego identity status. *Journal of Personality and Social Psychology, 3,* 551-558.

McKown, C., & Strambler, M. (2009). Developmental antecedents and social and academic consequences of stereotype-consciousness in middle childhood. *Child Development, 80*, 1643-1659.

McKown, C., & Weinstein, R. (2003). The development and consequences of stereotype consciousness in middle childhood. *Child Development, 74*, 498-515.

Nadler, J. T., & Clark, M. H. (2011). Stereotype threat: A meta-analysis comparing African Americans to Hispanic Americans. *Journal of Applied Social Psychology, 41*, 872-890.

Neblett, E. W., Philip, C. L., Cogburn, C. D., & Sellers, R. M. (2006). African American adolescents' discrimination experiences and academic achievement: Racial socialization as a cultural compensatory and protective factor. *Journal of Black Psychology*, *32*, 199-218.

Nguyen, H. D., O'Neal, A., & Ryan, A. M. (2003). Relating test-taking attitudes and skills and stereotype threat effects to the racial gap in cognitive performance. *Human Performance*, *16*, 261-293.

Ornstein, P. A., Haden, C. A., & Elischberger, H. B. (2006). Children's memory development: Remembering the past and preparing for the future. In M. Bialystok & F. I. M. Craik (Eds.), *Lifespan Cognition: Mechanisms of change* (pp. 143-161). Oxford, UK: Oxford University Press.

Osborne, J. W. (1995). Academics, self-esteem, and race: A look at the underlying assumptions of the disidentification hypothesis. *Personality and Social Psychology Bulletin, 21***,** 449-455.

Osborne, J.W. (1999). Unraveling underachievement among African American boys from an identification with academics perspective. *Journal of Negro Education, 68*, 555-565.

Pauker, K., Ambady, N., Apfelbaum, E. P. (2010). Race salience and essentialist thinking in racial stereotype development. *Child Development*, *81*, 1799-1812.

Phinney, J. S., & Ong, A. D. (2007). Conceptualization and measurement of ethnic identity: Current status and future directions. *Journal of Counseling Psychology*, *54*, 271-281.

Roberts, R. E., Phinney, J. S., Masse, L. C., Chen, Y. R., Roberts, C. R., & Romero, A. (1999). The structure of ethnic identity of young adolescents from diverse ethnocultural groups. *The Journal of Early Adolescence*, *19*, 301-322.

Rowley, S. J., Sellers, R. M., Chavous, T. M., & Smith, M. A. (1998). The relationship between racial identity and self-esteem in African American college and high school students. *Journal of Personality and Social Psychology*, *74*, 715.

Schmader, T. (2002). Gender identification moderates stereotype threat effects on women's math performance. *Journal of Experimental Social Psychology, 38,* 194-201.

Schmader, T. (2010). Stereotype threat deconstructed. *Current Directions in Psychological Science*, *19*, 14-18.

Schmader, T., & Johns, M. (2003). Converging evidence that stereotype threat reduces working memory capacity. *Journal of Personality and Social Psychology*, *85*, 440-452.

Schmader, T., Johns, M., & Forbes, C. (2008). An integrated process model of stereotype threat on performance. *Psychological Review, 115,* 336-356.

Scottham, K. M., Cooke, D. Y., Sellers, R. M., & Ford, K. (2010). Integrating process with content in understanding African American racial identity development. *Self and Identity*, *9*, 19-40.

Scottham, K. M., Sellers, R., & Nguyen, H. X., (2008). A measure of racial identity in African American adolescents: The development of the Multidimensional Inventory of Black Identity-Teen. *Cultural Diversity and Ethnic Minority Psychology, 14,* 297-306.

Sellers, R. M., Morgan, L., & Brown, T. (2001). A multidimensional approach to racial identity: Implications for African American children. In J. Conteres & K. Kerns (Eds.), *African American children: Clinical developmental perspectives* (pp. 23-56). West Port, CN: Praeger.

Sellers, R. M., Rowley, S. A. J., Chavous, T. M., Shelton , J. N., & Smith, M. (1997). Multidimensional inventory of black identity: Preliminary investigation of reliability and construct validity. *Journal of Personality and Social Psychology*, *73*, 805-815.

Siegel, L. S., & Ryan, E. B. (1989). The development of working memory in normally achieving and subtypes of learning disabled children. *Child Development, 60,* 973-980.

Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist, 52*, 613-629.

Steele, C. M., & Aronson, J. W. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology, 6*, 797-811.

Steele, C. M., Spencer, S. J., & Aronson, J. (2002). Contending with group image: The psychology of stereotype and social identity threat. *Advances in Experimental Social Psychology*, *34*, 379-440.

Stinnett, T. A. (1992). Construct validity of the test of adolescent language-2 (TOAL-2) and implications. *Journal of Psychoeducational Assessment*, *10*, 161-166.

Vanneman, A., Hamilton, L., Anderson, J. B., & Rahman, T. (2009). Achievement gaps: How Black and White students in public schools perform in mathematics and reading on the National Assessment of Educational Progress (NCES 2009-455). Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

Appendix

Sample participant responses to stereotype awareness task

Stereotype	Examples
Blacks are less intelligent than Whites	Black people are stupid White people are smarter than Blacks Blacks are more likely to drop out of school Won't graduate high school, won't even make it to college All black people are dumb Blacks are not that intelligent
Blacks are worthless	Whites are better than Blacks No good Black people are nothing but trash I heard that when blacks are grown they won't amount to nothing Black people are a disgrace to this world Black people are useless Black people are worth nothing
Blacks are poor	Ghetto Live in projects Black people live in poverty Black people are poor
Blacks are unattractive	Dirty Ugly Blacks are ugly
Blacks are criminals	Black people are always going to jail Criminals All black men go to jail All blacks that are young have got in trouble with the law Blacks fill up the jail
Blacks are violent	Always fighting Black people are dangerous … the people to shoot and kill Some white people still want to go back to slavery because they think that blacks are making this world a violent world They shoot and kill and fight and steal They have weapons on them
Blacks are good athletes	NBA, football players all black All Blacks are good at sports