
ETD Archive

2012

Same-Race Regulatory Resource Depletion; Obstacles of Black High-Achievers

Shondale DeLoach
Cleveland State University

Follow this and additional works at: <https://engagedscholarship.csuohio.edu/etdarchive>

 Part of the [Education Commons](#)

How does access to this work benefit you? Let us know!

Recommended Citation

DeLoach, Shondale, "Same-Race Regulatory Resource Depletion; Obstacles of Black High-Achievers" (2012). *ETD Archive*. 78.
<https://engagedscholarship.csuohio.edu/etdarchive/78>

This Dissertation is brought to you for free and open access by EngagedScholarship@CSU. It has been accepted for inclusion in ETD Archive by an authorized administrator of EngagedScholarship@CSU. For more information, please contact library.es@csuohio.edu.

SAME-RACE REGULATORY RESOURCE DEPLETION: OBSTACLES OF BLACK
HIGH-ACHIEVERS

SHONDALE DELOACH

BACHELOR OF ARTS in PSYCHOLOGY and RELIGIOUS STUDIES

CLEVELAND STATE UNIVERSITY

May, 2004

MASTER OF ARTS in PSYCHOLOGY

CLEVELAND STATE UNIVERSITY

May, 2006

submitted in partial fulfillment of requirements for the degree

DOCTOR OF PHILOSOPHY IN COUNSELING PSYCHOLOGY

at the

CLEVELAND STATE UNIVERSITY

July, 2012

This dissertation has been approved for
the Office of Doctoral Studies,
College of Education and Human Services
and the College of Graduate Studies by

Donna Schulthiess, Ph.D, Chairperson, Methodologist
Counseling, Administration, Supervision, and Adult Learning 05/29/2012

Colleen Hollinger, Ph.D, Member
Psychology 05/29/2012

Kathleen MacCluskie, Ph.D, Member
Counseling, Administration, Supervision, and Adult Learning 05/29/2012

Sarah Toman, Ph.D, Member
Counseling, Administration, Supervision, and Adult Learning 05/29/2012

Elizabeth Welfel, Ph.D, Member
Counseling, Administration, Supervision, and Adult Learning 05/29/2012

DEDICATION

I dedicate this work to the DeLoach, Williams, and Savage family. I am forever grateful for your unwavering support and love over the years. To my solace: Linda DeLoach, Willie DeLoach, Bessie DeLoach, and April and Angel DeLoach, I thank God for you.

ACKNOWLEDGMENT

I would like to thank my Dissertation Chairperson and Methodologist, Dr. Donna Schultheiss. For all of your support and encouragement, for the endless number of questions you answered, and for your voice of reason and calm when I felt thrown to and fro in the winds and waves of dissertation, thank you. My deepest thanks to my committee members: Dr. Hollinger, Dr. MacCluskie, Dr. Toman, and Dr. Welfel. Thank you for your commitment to this work and for the wisdom you shared during this process. To my classmates and colleagues of Urban Education, Cohort XX, for all of the peer support, the groaning and complaining, for joining me in the pits of despair when a Ph.D. seemed insurmountable, and for the laughs, the beer and wine at Becky's after Stats class, and the love and genuine care for one another, thank you. Finally, to my friends and colleagues of Counseling Psychology, Cohort XX: Rob, Barb, Megan, and Sister M. Clare, I'm grateful to have traversed this journey with you. I've learned so much from you and I look forward to our future as fellow psychologists and friends. Thank you to the Jordan family: Mum, Mandy Pandy, Tanya, and Vienna; God sometimes chooses to show Himself to us through the love and hospitality of others. Words don't express my gratitude for allowing me to experience God's love through your hearts. To all of my friends, your friendship over the years has made this process possible and enjoyable. You have always encouraged me and you understood when I've gone MIA at times over the past six years. You all made the difficult times lighter and I am forever grateful to God for your presence in my life.

SAME-RACE REGULATORY RESOURCE DEPLETION: OBSTACLES OF BLACK HIGH-ACHIEVERS

ABSTRACT

Researchers have long been interested in the academic underachievement and disengagement of many African American students. Fordham and Ogbu (1986) offered the acting White phenomenon as one way to understand the problem. Fordham (1996) found that, in order to avoid being accused of acting White, some Black high achievers limit their academic abilities, particularly around Black low achieving students. Black high achievers can also encounter psychological costs as a result of limiting their academic prowess. There is some evidence, according to regulatory resource depletion theory, that altering one's normal thoughts, actions, or feelings in order to serve present circumstances, as some Black high achievers have been found to do, can negatively impact executive function. The purpose of this study was to determine if regulatory resource depletion theory is a fitting psychological mechanism at the root of what some research has found regarding the dynamics of Black high and low achievers. Thirty-eight high achieving Black students participated in an experimental design study to test the hypothesis that interaction with a low achieving Black student would result in lower scores on an executive function test as compared to those who interacted with another high achieving Black student. A 2 X 2 factorial ANOVA did not support the hypothesis. Implications for theory, research, and practice are discussed.

TABLE OF CONTENTS

	Page
ABSTRACT.....	v
LIST OF TABLES.....	viii
LIST OF FIGURES.....	ix
CHAPTER	
I. INTRODUCTION AND STATEMENT OF THE PROBLEM.....	1
The Achievement Gap.....	1
Explanations of the Achievement Gap.....	4
Self-Regulation Theory.....	6
Regulatory Resource Depletion Theory.....	9
Limitations.....	12
II. LITERATURE REVIEW.....	15
The Acting White Phenomenon.....	16
Psychological Costs Black Students Face.....	18
Regulatory Resource Depletion Research.....	20
Hypotheses.....	24
III. RESEARCH METHODOLOGY.....	27
Participants.....	27
Procedure.....	28
Hypotheses.....	31
Measures.....	32

Design and Data Analysis.....	36
IV. RESULTS.....	38
Hypotheses.....	38
Sample Information.....	39
Descriptive Statistics.....	40
ANOVA.....	42
V. DISCUSSION.....	45
Explanation of Results.....	46
Limitations.....	51
Implications for Theory.....	52
Implications for Research.....	54
Implications for Practice.....	56
REFERENCES.....	58
APPENDICES.....	66
A. IRB Approval.....	66
B. Informed Consent.....	67
C. Demographics Questionnaire.....	70
D. Interaction Script.....	71
E. Academic Self-Concept Scale.....	75
F. The Stroop Test.....	76

LIST OF TABLES

Table		Page
I.	Means and standard deviations for Stroop Interference T-scores.....	41
II.	2x2 factorial ANOVA table.....	43

LIST OF FIGURES

Figure		Page
I.	Cell representation of 2x2 factorial ANOVA.....	37
II.	Visual representation of the interaction between independent variables.....	42

CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

The Achievement Gap

Discrepancies have always existed in the educational opportunities and preparedness in the United States, which has negatively impacted women (Nash, 2005) and minorities (Williams, 2005). The majority of the academic and popular discourse on this issue has focused on the educational disparities between Blacks and Whites (Williams, 2005). The central theme of the discourse in this area is generally that Black students do not achieve at the same level as their White counterparts. Additionally, the National Center for Education Statistics reveals that Black students are less likely to graduate high school, and less likely to attend and finish college (National Center for Education Statistics, 2005). Most commonly referred to as the achievement gap, the explanations offered for this typically center on socio-environmental issues (e.g., Cokley, 2001; Fordham, 1986; Mandara, 2006; Steele & Aronson, 1995).

Socio-environmental explanations have been most widely studied in the research (see Mandara, 2006). Socio-environmental variables (e.g. socio-economic status, parenting styles, racial socialization, etc.) have been shown to be related to the grades of students in general, and research has demonstrated that these variables can negatively impact the achievement of Black students in particular (Mandara, 2006).

A related line of research also seems promising to help understand and possibly address the problem. Researchers have studied a phenomenon called self-regulation, which occurs when people change the way they would normally think or behave in the service of the present set of circumstances (Muraven & Baumeister, 2000) (e.g. A New York Jets fan might limit his cheer and energy for his team when the Jets are playing the New England Patriots if he is surrounded by Patriot fans).

Building on self-regulation theory, others have focused on trying to understand the mechanisms at the root of depressed executive function task performance following interracial interaction (Trawalter, Richeson, & Shelton, 2009). Researchers studying interracial interaction have offered a regulatory resource depletion account of interracial interaction that suggests that subsequent to such interactions, people can be depleted of cognitive resources, thus leading to depressed performance on a task that taps into executive functioning (Richeson & Trawalter, 2005; Trawalter & Richeson, 2006). This line of research is of particular interest to this study.

Although no studies have explored the possibility it is reasonable to hypothesize that the impact on executive function and regulatory resources might well negatively impact one's academic achievement. As is the case with many high achieving Black students, if continuously exposed to stressful situations where one must behave in ways

dissimilar to what one is familiar with or be around and interact with people around whom one feels compelled to adjust their behavior, one might expect that Black high achievers might face regulatory resource depletion and an impact on executive functioning similar to what has been found following interracial interaction (Trawalter, Richeson, & Shelton, 2009). One common experience that may prompt one to self-regulate and lead to regulatory resource depletion may be same-race interactions of high and low achieving Black students. Although there is no research that has examined it, this repeated or chronic regulatory resource depletion and impact on executive functioning might be a psychological cost paid by high achieving Black students and lead to depressed academic performance. Given the negative effects of regulatory resource depletion (Richeson & Trawalter, 2005) and data suggesting a persistent achievement gap between Black and White students (Mandara, 2006), it is important to study the degree to which same-race interaction between high and low achieving students is related to regulatory resource depletion.

The purpose of this investigation is to examine the role of self-regulation during same-race interaction between high and low achieving Black students. This would add to our knowledge of the achievement gap problem, help us gain an important understanding of an obstacle faced by Black high achievers. Knowledge gained can also be used to inform clinical practice, particularly as it relates to achievement issues faced by Black college students. Specifically, this study seeks to address the following question:

1. Does self-regulatory demands of same-race interaction between high achieving and low achieving Black college students negatively impact executive functioning of Black high achievers, more specifically, inhibitory task performance after the

interaction?

Explanations of the Academic Achievement Gap

The socio-environmental explanations have been most promising and have received the most attention in the literature. Steele and Aronson (1995) proposed a social phenomenon, whereby one's performance on some task suffers because one is aware of a negative stereotype about one's group in relation to the task, as one way to understand the problem. Termed stereotype threat, this area of research has received much scholarly and popular attention (Sackett, Hardison, & Cullen, 2004; Shapiro & Neuberg, 2007).

Parenting styles have been shown to predict achievement in children (Mandara, 2006). Researchers have struggled with the discussion of the role of parenting styles on achievement and adjustment in minority children. Most of the research, particularly the early studies (see Pong, Hao, & Gardener, 2005), focused on Caucasian families. Some studies have suggested that applying the dominant findings of the body of research, which focuses on Caucasian families, may not be applicable to some minority families, or families surrounded by different environments, such as poor, violent neighborhoods (see Maton, Freeman, Hrabowski & Greif, 1998; Kao, 2004; Pong, Hao, & Gardner, 2005).

On a related note, Black parents discuss issues of race and culture with their children, which is qualitatively different from the same process that takes place in White families. This process of racial socialization, as Mandara (2006) indicated, is a "unique task of many non-White parents living in a predominantly White society..." (p. 212). Mandara suggests that most Black families use racial socialization in order to foster a sense of racial and cultural identity in some form.

Some have suggested that racial socialization has positive effects, while others

point out the negative. Sanders (1997) suggests that there is a positive relationship with racial socialization and grades, while Marshall (1995) relates racial socialization in Black families to lower grades. Hughes and Chen (1997) presented four typical racial socialization messages focusing on: cultural pride, preparation for discrimination, promoting out-group mistrust, and similarity among groups. Messages on preparing children for discrimination and out-group mistrust fit with Cokley's (2001) diagnosis of the problem, which focuses on a disengagement from academic pursuit. One might venture to suggest that some racial socialization messages transferred in Black families, namely, the more negative ones, disenchant Black students with academics.

Still other researchers have offered an anthropological explanation of the problem; Fordham and Ogbu (1986) proposed a phenomenon termed "acting White." Blacks accused of acting White are those who are believed to accept norms and values typically seen as those of White culture (e.g. academic achievement) (Fordham, 2008). There has been plenty of scholarly and popular discourse on the acting White phenomenon (Fordham, 2008). Fordham and Ogbu (1986) found that high achieving Black students who are accused of acting White limited their academic prowess because of the social and psychological costs they faced by being high achievers amid other low achieving students. Fordham (1988) also uncovered some of the psychological costs related to being a high achieving Black student, thereby elucidating the existential quality of the acting White phenomenon.

Social psychologists have offered theoretical models that might help explain the psychological mechanisms underlying such psychological costs Black high achievers may encounter. In the social psychology literature there is much interest in the psychological mechanisms that influence and impede an individual's desired mental states or actions. The theory of ironic processes (Wegner, 1995), for example, focuses on counterintentional mental errors (e.g. a person on a diet tries desperately not to think about chocolate cake but thinks about the cake even more by trying not to think about it). Other researchers have built upon this theory and have, for example, tried to understand the mechanisms underlying the impairment of self-presentation (Vohs, Baumeister, & Ciarocco, 2005).

Self-Regulation Theory

The social psychology literature perhaps offers the best explanation of the psychological mechanisms at work when people must exert self-control or self-regulate. This seems to occur when a Black high achiever thinks, feels, or behaves in a manner inconsistent with what is normal, or most comfortable for them. One situation that might cause a Black high achiever to think, feel, or behave differently is when they feel pressure to do so around other Black low achievers as a result of the stigma of being a Black high achiever. The social psychology literature has explored how one's ability can be affected by such psychological experiences. Namely, the psychological mechanism at work during such experiences is referred to as self-regulation. Heatherton and Baumeister (1996) define self-regulation as "...the process by which people initiate, adjust, interrupt, terminate, or otherwise alter actions to promote attainment of personal goals, plans, or standards" (p. 91). Muraven and Baumeister (2000) define self-control or self-regulation

as "...the exertion of control over the self by the self...self control occurs when a person (or other organism) attempts to change the way he or she would otherwise think, feel, or behave" (p. 247). A related example of self-regulation occurs when a high achieving Black student, while answering a question in class, alters what they might naturally say and instead answers the question giving minimal information and description so as not to sound too smart amid other, low achieving Black students. In effect, the student is engaging in self-control or self-regulation by overriding that which they might naturally do.

Self-Regulation Theory: Process of Self-Regulation and the Limited Resource Model

Self-regulation occurs by way of feedback processes or a feedback loop (Carver & Scheier, 1998). The feedback loop concept is a model that delineates the intricacies of self-regulation. For example, Carver and Scheier (1998) referred to a TOTE unit that stands for test-operate-test-exit. Baumeister and Heatherton (1996) asserted that a feedback-loop model of self-regulation indicates three main ingredients of self-regulation that helps explain the TOTE unit. The first ingredient is standards, which are ideals or goals. An individual lacking clear and consistent standards can fail to achieve effective self-regulation because the standards or anchor by which one would judge one's state in order to assess whether or not any change is necessary are faulty. The second ingredient is monitoring, which is the test phase of the feedback loop. Monitoring involves comparing the state of the self to one's standards. For example, successful dieting necessarily involves monitoring one's food-intake; the failure to do so can result in over-eating and thus a potentially failed diet. The third ingredient is held in the operate or change phase of the feedback loop. The operate phase takes place once the test phase has

determined that the current state falls short of the standards; at this point a process is started in order to change the current state (Baumeister & Heatherton, 1996; Muraven & Baumeister, 2000). The exit component of the TOTE unit refers to the transfer of control elsewhere if there are no discrepancies in the test-operate phase (Carver & Scheier, 1998). Using the dieting example above, if one overeats and thus finds that their current state (failing at their goal or ideal, i.e. overeating) falls short of their standard (dieting and healthy eating), this individual might seek to change their current state and reduce and watch their food intake more responsibly.

In order to change those naturally occurring thoughts, feelings, or behaviors, one must possess something even stronger than that which occurs naturally if they are to be overridden. Baumeister and Heatherton (1996) suggest a strength model of self-regulation, which suggests that one's self regulatory resources are limited. Self-regulatory resources have been likened to a muscle in that one's resources are indeed limited and also capable of being temporarily depleted when one has become sufficiently exhausted behind exerting too much energy regulating one's thoughts, feelings, or behaviors (Muraven & Baumeister, 2000; Baumeister & Vohs, 2004). In one study, when individuals were asked to engage in self-regulation in one sphere (e.g. emotional regulation), they subsequently displayed decreased ability to regulate in another, seemingly unrelated sphere (e.g. persisting in holding a hand grip). The authors suggest that such results implicate a common resource from which individuals draw upon so that emotional regulation also consumes resources to effectively regulate one's thoughts and behavior (Muraven, Tice, and Baumeister, 1998).

The strength model of self-regulation, which again suggests its limited nature and

the temporary depletion that occurs after consuming enough resources, is illuminated in the following study. Researchers have found that self-regulation impacts people's ability to present themselves favorably in unfamiliar situations or when they aim to present themselves in a manner that's not natural to them (Vohs, Baumeister, & Ciarocco, 2005). In their study, Vohs, Baumeister, and Ciarocco (2005), found that individuals whose regulatory resources had been consumed by prior activities were more likely to present themselves less favorably, while those whose regulatory resources were unconsumed presented themselves normally.

Regulatory Resource Depletion Theory

Engle, Conway, Tuholski, and Shishler (1995) offered a more basic explanation of the limited account of executive resources and actually explicate the cognitive underpinnings of the theory. Engle et al. (1995) took issue with the theory that proposes a differential ability of various groups to inhibit information explanation to explain differences in cognition-theories that as Engle et al. (1995) suggested, conceptualize inhibition as a passive process. They instead argue for a limited resource model of executive attentional resources, which holds that inhibition is result of a controlled attentional process. Their model proposes that successful inhibition requires and consumes attentional resources and that there are developmental and individual differences in the availability of resources.

The model begins with direct challenges to commonly held beliefs about the nature and mechanisms involved in working memory capacity. Traditional models of working memory capacity have linked it to short-term memory. However, Engle, Tuholski, Laughlin, and Conway (1999) found that working memory correlates with

general intelligence, whereas short-term memory does not. Given this information, Engle (2002) suggested that instead of working memory capacity referring to how many units can be held in store, it actually refers to how one directs attention to maintain and/or inhibit information, which aligns it with executive attention. In this regard, as Engle (2002) explained, working memory is only indirectly about memory and more directly about how one uses attention to avoid interference so that information can be maintained.

Engle (2002) suggested that people with high working memory capacity (executive attention) are better able to inhibit interfering information and keep relevant information in store for quick retrieval, and those with low working memory capacity (executive attention) are less successful at inhibiting the interfering information and are thus less able to resist interference and as a result can hold less information in store for retrieval. Irrespective, however, of the strength of one's working memory, the more attention that is required during a recall task, the less "room" one has to resist the interference and simultaneously retain the relevant information. In other words, executive resources can be depleted (Engle, 1995).

In research building on Engle's (1995) work and that of Muraven and Baumeister (2000), researchers have found that attempting to have a favorable impression on others resulted in poorer performance on a subsequent executive function task requiring the use of executive attention and inhibitory ability (Richeson & Trawalter, 2005). The theory of regulatory resource depletion theory is thought to explain the decreased executive function performance after one is in an interaction involving self-regulation. Regulatory resource depletion theory would suggest that the negative impact on executive function performance is a result of the limited nature of executive function resources. More

specifically, executive attention, including inhibitory ability is part of a limited pool of resources, which once tapped for the purpose of self-regulation, will result in impaired performance on a task requiring the use of the same pool of resources, such as the Stroop test, a measure of executive function (Richeson & Trawalter, 2005).

Impaired performance on the Stroop test have been found during and after interracial interactions (Richeson & Trawalter, 2005; Trawalter & Richeson, 2006). For example, Richeson and Trawalter (2005) based their study on executive function task performance after interracial interaction on Engle's (1995) resource depletion theory. They found that the amount of self-regulation one engaged in during the interracial interaction predicted performance on the Stroop color-naming task, a task requiring use of executive function (attention and selective inhibition).

Research has found that individuals engaging in interracial interaction can suffer from regulatory resource depletion (Richeson & Trawalter, 2005; Trawalter & Richeson, 2006). There is a paucity of research on regulatory resource depletion as a result of same-race interaction. Despite a lack of research, reason would suggest that such interaction might well produce the same effects particularly with regard to interaction between high and low achieving Black students. Same-race interaction might lead to regulatory resource depletion particularly if one of the actors in the interaction feels compelled to alter his naturally occurring thoughts, feelings, or behaviors, in response to some dynamic of the interaction.

To date there is no research that has explored the psychological mechanisms at work during interactions between same-race Blacks whose academic achievement levels are at odds. As others have noted, high achieving Black students are an understudied

population (Fries-Britt & Griffin, 2007). Educators, policy makers, therapists, and others need to understand the psychological mechanisms that might lead to some of the stressors these students face, and how they are affected by them if they are to aid them. This study is also important for understanding more about the Black experience, and would add to understanding why an achievement gap exists. These results would also inform counseling psychology regarding the understanding of especially high-achieving Blacks, particularly in the areas of Black identity and with navigating acceptance into two communities, the Black community from which the student comes and also the larger American society.

Limitations

There are several limitations in this study. Gender was not controlled for in this study. In this study, all participants interacted with a male confederate. It is possible that participant's regulatory resources will be exhausted differently depending on the gender of the confederate with whom they interact. For example, a female participant might consume more regulatory resources interacting with a male than she would with another female. The dynamic produced by different gender interactions may play an important role in regulatory resource depletion, in this study gender was not controlled for because this is a preliminary study investigating the effect same-race interactions between high and low achieving Black students has on executive functioning. As such, I focused on the impact on executive functioning as a result of the interaction between a high achieving Black student and a low achieving Black student. Other variables, such as gender can and should be studied for the effect they have on this area in future studies, but this preliminary study is concerned with finding differences between differing achieving

levels first.

Another limitation of this study concerns the grade point average (G.P.A.) cutoff chosen to designate the high achieving participants, and the cutoffs chosen for the confederates to report during the interaction phase of the study. It can be argued that a 3.0 G.P.A cutoff is a low minimum G.P.A for high achievers. While a 3.0 is equivalent to a B average on 4.0 scale, it is the minimum G.P.A for participation in this study and it is likely that many of the participants will have higher G.P.As. Furthermore, part of the criteria to participate in this study requires that the participant also have had a cumulative high school G.P.A of at least 3.0. These criteria, while not the most stringent criteria, ensure that the participants have a history of academic achievement and increase the likelihood that they have experienced the stigma of being high achieving Black student.

One of the independent variables in this study is the feedback given to the participant, either the (false) White values condition, or the (non-false) parental values condition. The false feedback should theoretically prompt self-regulation when the participant is paired with a Black low achieving confederate. However this effect is not certain. It is possible that telling the participant that their score on the Academic Self-Concept Scale (ASCS; Reynolds, Ramirez, Magrina, & Allen, 1980) suggests that they have educational values consistent with White America will not prompt self-regulation because, for example, the participant is accustomed to being told that they have values consistent with White America. However, based on previous research (Fordham, 1996; Griffin & Allen, 2006; Fries-Britt & Griffin, 2007) the manipulation and interactions in this study should produce the kind of dynamic that would induce self-regulation.

Finally, this study is an analog study. It is possible that the scripts used by the

confederates will impact the interaction and thus the results of the study. This is a preliminary investigation that seeks to establish that same-race interaction between high and low achieving Black students results in regulatory resource depletion. Future studies should investigate this phenomenon in more natural settings.

CHAPTER II

LITERATURE REVIEW

Researchers have long been interested in the academic motivation and achievement of Black students (Cokley, 2001; Mandara, 2006). Studies find that Black students are more likely to possess less academic motivation and also underachieve at every level of the educational pipeline compared to their White counterparts (Cokley, 2008). These findings are unfortunate especially in light of the tenacity with which Blacks fought for educational rights immediately after the Emancipation Proclamation (Williams, 2005). The proposed explanations for the current state of affairs are many, and most are complimentary of one another. Most explanations, save the biological explanation (Hernstein & Murray, 1994), have focused on the socio-environmental causes and antecedents of academic underachievement of Black students (Mandara, 2006). However, more interest in the internal psychological mechanisms that might impact the academic underachievement of Black students is warranted as the achievement gap is still a prevalent issue in American culture. What follows is a brief

review of some of the external explanations that have been proposed in the literature.

The Acting White Phenomenon

Fordham's (1996) work seems to point to and validate Cokley's (2001) understanding of the academic problems of Black students in some ways. Cokley (2001) highlighted an academic disengagement that seems to take place with some Black students. Fordham (1996) studied Black students in high school, but her work points to a developed sense of self, which, as she reports, has much to do with the home environment in which they were raised. Fordham (1996) speaks directly to a disengagement that takes place, a sort of extrication of academic pursuit from the self that seems to occur in Black students, termed "acting White." She explained the acting White phenomenon as observed in a predominantly Black high school in an urban mid-Atlantic town. Fordham, in this ethnographic study, focused on high and low achieving students, their parents, and school administrators in order to offer a discussion and understanding of factors beyond test scores or other markers that are implicated in the academic success of Black students.

Fordham (1996) observed different viewpoints that the students held, not only cursory ideas espoused when asked about identity and academic motivation, but seemingly well constructed models of personal ideals and opposing ideals held by fellow students at an eastern U.S. high school. Some students held tenaciously to this concept of the Black Self. The Black Self is essentially the conception of Blacks that is positive and fair, understood in light of the social struggles that Blacks have faced in this country. These students are the low achievers; instead of conforming to or accepting the ideals typically associated with the 'Other', or dominant culture, these students seek to reclaim

the appropriated Black self via avoidance of the ideals of the dominant population. As Fordham puts it:

...among the underachieving students at Capital High, schooling is generally constructed as a kind of warfare, an emboldened attempt to reclaim the appropriated Black Self, to avoid being constructed as (an) Other. Unlike the high-achieving students who resist dominant claims of Black people's intellectual inadequacy by consciously conforming to school norms and expectations, underachieving students resist through avoidance. (p. 283)

Consequently, the low achieving students refuse to learn what they are taught in school because they see this as accepting existing labels and relinquishing the positives about people of African Ancestry.

Other students in the study, the high achievers, found themselves in "...a kind of warfare, a calculated conformity intended both to minimize a perception of 'lack' and to achieve a higher social status. African-American students who opt to live beyond society's limited expectations for Black people feel compelled to "pass" by taking on the identity of (an) Other" (Fordham, 1996, p. 235). The "Other" is representative of the dominant population in America, White people. Fordham uses the term warfare to describe the academic motivation of these students because they were in the middle of two competing forces, the dominant society's low expectations and other students' (low achievers) emphasis on group solidarity. These students may be accused of acting White.

Psychological Costs Black Students Face

Fordham (2008) also moved the focus off of the external, environmental factors that lead to academic underachievement in Blacks students and also gave attention to, as she rightly suggests, the equally important psychological costs affiliated with academic success (also see Fordham, 1988). Research has, in fact, found that high-achieving Black students face psychological costs behind their academic prowess (Fries-Britt & Griffin, 2007; Fordham, 1988). Fordham (2008) eloquently described a dilemma many high achieving Blacks must navigate, namely, she suggested that high achieving Blacks must simultaneously seek acceptance into the hegemonic White society, while maintaining their citizenship in the Black community.

Not only has Fordham's (1996) study found this dilemma to articulate the experience of some Black high achievers, more recently Fries-Britt and Griffin (2007) have asserted the same phenomenon. Whereas Fordham's (1996) work primarily focused on the dynamic phenomenon produced by relationships between low and high achieving Black students, Fries-Britt and Griffin (2007) also explored how Black high achievers perceived, experienced, and were affected by the dynamics between them and their White counterparts. Fries-Britt and Griffin (2007) found that Black students felt pressure to prove their own, and the intellectual ability of Black people in general, to their White counterparts. The authors record the accounts of Black students who reported being told by their White peers that they were only accepted into college or an honors program because they were Black. Elsewhere, Griffin and Allen (2006) reported how Black high-achiever's academic experiences are "clouded" by stereotypical beliefs of individuals in their school environment. This study also found that the same high achieving Black

students felt pressure to demonstrate their racial alliance to their Black peers. In effect, these students are neither White nor Black enough but exert energy to be both. A statement by a high-achieving student seems to capture the angst experienced by high achieving Black students: “I don't know...sometimes it's hard when you're in honors or AP classes and there are not very many minorities in it. 'Cause it, psychologically, it's like you can't afford to be wrong. Cause then everybody's like, he don't know what he's talking about. He's another, you know” (Griffin & Allen, 2006, p. 478).

Fries-Britt and Griffin (2007) suggested that this pressure and expended energy (e.g. pressure to prove one's self, and pressure to demonstrate one's racial alliance) takes away from studying and therefore negatively impacts academic achievement. These authors point to a very important issue faced by Black students and echo the work of Fordham (1996), however a more nuanced exploration is in order of what this pressure or expended energy is and how it affects ability and as a result academic achievement and motivation. Fordham (1986), although not concerned with regulatory resource depletion specifically, highlighted the psychological costs one suffers while trying to cope with the burden of acting White. This ethnographic study offers several examples of how same-race interaction can lead to regulatory resource depletion. While interviewing high achieving Black students, Fordham discovered specific strategies that these students adopted in order to cope with the burden of acting White. One high achieving Black male student (“Martin”), in aims of coping with the burden of acting White and also to prove his manhood, adopted a comedic strategy. Martin indicated that “if you don't act like a clown, your friends gonna start calling you a brainiac” (p. 19). It is apparent here that Martin employed a strategy of being a comedian or a clown in order to cope with the

burden of acting White. The very necessity of employing a strategy suggests that Martin is altering, or adjusting his actions in order to, in line with the definition of self-regulation set forth by Heatherton and Baumeister (1996), "...promote attainment of personal goals, plans, or standards" (p. 91). Another high achiever, "Norris", adopted the comedic strategy also because he did not want to be called a "brainiac", yet academic achievement was important to him because he wanted to go to college on scholarships.

Here it is apparent that Norris chose to change the way he would otherwise think, feel, or behave, which is consistent with the self-regulation definition set forth by Muraven and Baumeister (2000). Still another high achiever, Katrina, indicated that in class she would "hold back", referring to her academic efforts. It is apparent that the concern of being called a brainiac, or the burden of acting White invoked self-regulatory effort. This effort, in line with self-regulatory resource depletion theory (Engle, 1995; Muraven & Baumeister, 2000), should impair performance on subsequent tasks requiring executive resources, which many academic tasks do.

Regulatory Resource Depletion Theory

The documented experience of the students mentioned above seems similar to the experience of participants who were involved in a study examining the relationship between interracial interaction and self-regulation. Richeson and Shelton (2003) examined the impact interracial interaction has on cognitive function on members of a dominant racial group. The participants, 29 White male and 21 White female students, were first administered the Implicit Attitudes Test (IAT; Greenwald, McGhee, & Schwartz, 1998), a measure used to assess unconscious bias. Next, participants were told that there would be a delay before the second cognitive task and were asked to help with

another experiment. They were then met by a second experimenter. Half of the participants met with a White experimenter and the other half met with a Black experimenter. The experimenter told the participants that they would be asked a few questions and that their responses would be videotaped. Participants were asked questions about the college fraternity system and racial profiling after the September 11th attacks. After this interaction, participants were administered the Stroop task by the first experimenter in order to measure executive functioning, and more specifically inhibitory ability. Results showed that high-prejudice Whites who interacted with the Black experimenter displayed impaired Stroop task performance as compared to high-prejudice Whites who had same-race interaction and did not display impaired Stroop task performance. The authors point out that these findings suggest that engaging in self-regulation in one sphere (interracial interaction) temporarily depleted the capacity to self-regulate in another sphere (the Stroop task). Theoretically, the high-prejudice Whites revealed impaired performance on the Stroop task because the interracial interaction depleted their executive attention resources as they had previously engaged in self-regulation so as not to appear prejudiced. Richeson and Shelton (2003) also point out that these findings support a resource model of cognitive functioning proposed by Engle et al. (1995).

A functional magnetic resonance imaging (fMRI) investigation supported the results Richeson and Shelton (2003) observed, namely that resource depletion seems to be the mechanism that explains the impairment of executive function after interracial interaction. In a study largely designed after Richeson and Shelton (2003), Richeson, Baird, Gordon, Heatherton, Wyland, Trawalter, and Shelton (2003) found that racial bias

predicted activity in a brain area (dorsolateral prefrontal cortex or DLPFC) associated with executive control when racially biased participants were presented with pictures of unfamiliar Black faces. Additionally, activity to Black faces in the DLPFC predicted the extent to which these participant's Stroop performance was impaired after interacting with a Black individual, but not a White individual (Richeson et al., 2003). These (Richeson et al., 2003) findings provide additional support for a resource depletion account of cognitive functioning.

While Richeson and Shelton (2003) and Richeson et al (2003) found preliminary evidence for regulatory resource depletion account of the cognitive aftereffect of interracial interaction, these studies were only correlational analyses as Richeson and Trawalter (2005) noted. The previous studies did not examine the role of self-regulation in producing the Stroop task impairment results. As such, Richeson and Trawalter (2005) sought to provide more direct, experimental evidence of resource depletion account.

In this study, Richeson and Trawalter (2005) manipulated self-regulation. More specifically, in three studies they manipulated the need for participants to self regulate in interracial interactions by both decreasing and increasing the need to self-regulate. What follows is a brief review of two of the three studies.

In the first study, the authors sought to increase self-regulation by giving White participants false feedback about their performance on the IAT to assess racial bias. Half of the participants were told that their score suggested that they were more prejudiced than they thought (this was done to increase self-regulation as the participant would be motivated to counteract the feedback they received by trying to behave in a fashion that didn't seem prejudiced), while participants in the control group were given more neutral

information that would not increase self-regulation. As predicted and consistent with a limited resource model, participants who engaged in interracial interaction, irrespective of feedback condition (prejudice or neutral) revealed impaired Stroop performance. Those participants who engaged in interracial interaction and who had been given prejudice feedback revealed more impairment on the Stroop than those who were given more neutral feedback.

In the second study, the authors examined the impact on inhibition when self-regulation is decreased instead of increased. White participants engaged in an interaction with a Black or White confederate and were asked to comment on racial profiling. Half of the participants were given a scripted opinion to use during the interaction (this would theoretically reduce self-regulation because participants did not have to engage in self-regulation with the script). The other participants were not given such a script for the interaction. It was found that participants who engaged in interracial interaction with no script displayed Stroop impairment, as compared to participants with no script who engaged in same-race interaction. Those who engaged in interracial interaction with a script displayed less Stroop impairment than participants in the no script condition engaging in interracial interaction. Finally, participants with a script involved in same-race interaction displayed no Stroop impairment (Richeson & Trawalter, 2005). These findings provide further evidence for a resource model of cognitive functioning because direct manipulation of self-regulation in both directions resulted in predicted Stroop performance depending on the self-regulation that occurred prior to the administration of the Stroop task.

Self regulatory resource depletion following interracial interaction research is

important because it helps explain how seemingly innocuous experiences or interactions can negatively impact individuals. These and similar studies (e.g, Richeson & Shelton, 2003; Richeson & Trawalter, 2008) lay the groundwork for studying how same-race interaction between low and high achieving Black students might lead to decreased cognitive capacity in the high achievers. If it could be established that same-race interaction between high and low achievers leads to decreased cognitive capacity or regulatory resource depletion, it could possibly, in part, help to explain the achievement gap and more specifically, the experience of the high-achievers whose academic prowess might be compromised.

There is a paucity of research investigating the effects that same-race dynamics can have on individuals, specifically individuals of the same-race but from different backgrounds, different walks of life, or who have different values. For the purposes of the current study, I am interested in the interaction between high achieving Black students and low achieving Black students. The interpersonal and cognitive effects that such interactions have on high achieving students are important questions to explore. As much of the research on the educational disparities Black students face has been focused on low achieving students (e.g. Cokely, 2001; Cokely, 2003; Mandara, 2006), more research is needed that focuses on the high-achievers (Griffin & Allen, 2006). This study seeks to explore how same-race interactions impact high-achieving Black students, specifically how such interactions impact subsequent executive functioning.

Hypotheses

Research has established that increasing self-regulatory demands temporarily

depletes performance on a subsequent task requiring executive attentional resources (Richeson & Trawalter, 2005). Furthermore, there is evidence that Black high achieving students limit themselves academically so that they will not be ridiculed by Black low achieving students (Fordham & Ogbu, 1986).

According to this research, I hypothesize that:

1. Participants who interact with a low achiever confederate will reveal lower Stroop task performance than participants who interact with a high achiever confederate irrespective of the feedback condition.

Fordham and Ogbu (1986) established that Black high achievers limit their academic ability around Black low achievers. However, the participants in the false feedback condition should be more aware of the acting White phenomenon because it will be made salient as a result of the feedback they receive. As a result, they should engage in more self-regulation than the participants in the neutral feedback condition. As such, I hypothesize that:

2. Participants in the false feedback condition who interact with a low achiever confederate will reveal lower Stroop task performance, compared to participants in the neutral feedback condition who interact with a low achiever confederate.

Fordham's and Ogbu's (1986) study suggests that high achieving Black students limit their academic prowess around Black low achievers because of the stigma attached to being a Black high achiever. As such, it would be expected that

around other high achievers, the need to self-regulate would not exist because high achievers agree as to the importance of academic excellence (Fordham, 1986, 2008). Accordingly, I hypothesize that:

3. The feedback condition will not affect Stroop task performance when participants interact with a high achiever confederate.

CHAPTER III

METHODS

Participants

The participants of the study were 38 high-achieving Black undergraduate and graduate college students at a mid-size Midwestern state university and at a large Midwestern state university. There were a total of 17 males and 21 females. The age of students ranged from 18 – 32 ($M = 20$, $SD = 2.4$). Most participants were freshman (31.6%) and sophomore students (28.9%). 23% were juniors, and about 13% were seniors. One individual was a doctoral level student (2.6%). High achieving is defined as students with a current minimum 3.0 GPA and at least a 3.0 cumulative high school GPA. This GPA cutoff was selected because on most scales, a 3.0 is a B average, which is one step above average in terms of academic achievement. In order to participate in the study, G.P.A had to be at least 3.0. The G.P.A's of the participants in this study ranged from 3.0 – 4.0 ($M = 3.4$, $SD = .31$). Although the sample was comprised of college students, a 3.0 cumulative high school GPA was also required for participation because students with a

history of academic achievement are more likely to have experienced some of the obstacles these students face, for example, being accused of acting White, or feeling the need to prove one's self (Fordham, 1996; Fries-Britt & Griffin, 2007).

Some participants were asked to participate in the study via an email announcement of the study which was sent out to various Black student groups on campus at a large Midwestern state university. These students, at the large midwestern state university, were informed that they would be entered into a drawing to win a \$40.00 amazon.com gift card. Other students at a mid-size Midwestern state university were asked to participate in the study and were given \$5.00 to do so. Participants at the mid-size Midwestern University were offered \$5.00 to participate instead of a raffle to attract more participation.

Procedure

Participants arrived at the testing lab individually, were met by an experimenter, and administered an informed consent (see appendix B) form and a basic demographic questionnaire (see appendix C). They were then randomly assigned to either the experimental (White values condition) or control group (neutral feedback condition); the aim was that there would be an equal number of males and females to each condition. Participants from both the experimental and control groups were also randomly assigned to one of two groups; they either interacted with a low achieving Black confederate or a high achieving Black confederate. In line with Richeson and Trawalter (2005), participants in all conditions were then told that they would be involved in a study exploring serial cognition, or the impact one cognitive task has on a subsequent cognitive task with a delay in between the two tasks (Richeson & Shelton, 2003). Participants were

then administered the initial cognitive task, the Academic Self-Concept Scale, a 40-item survey focused on academic attitudes. (ASCS; Reynolds, Ramirez, Magrina, & Allen, 1980).

Also consistent with Richeson and Trawalter (2005), after completion of the ASCS, the experimenter scored the participants' responses and gave participants in the experimental condition false feedback (the White values condition), and participants in the control condition neutral feedback (the neutral feedback condition). Participants in the experimental condition were told, "People have used this scale to study racial attitudes about education. Your scores seem to suggest that you have educational values consistent with those of White America." Participants in the control group were given neutral feedback (the parental values feedback condition). They were told, "People have used this scale to study racial attitudes about education. Studies find that many students adopt the same educational values as their parents." The feedback given in the neutral feedback condition was not personalized to the parents of the participants, but was rather explained as a general finding that individuals typically have educational values consistent with their parents. The feedback given to participants in the experimental condition was given to induce self-regulation during the interaction phase of the study, which followed the feedback session.

All participants were then informed that part of the serial cognition experiment required that there be a delay between the two cognitive tasks and they were asked if they were willing to participate in an unrelated study exploring academic issues in Black schools. All participants in both conditions then engaged in an interaction for ten minutes with another student (either a high achieving Black student confederate or a low

achieving Black student confederate). This was done to investigate the relative impact on executive functioning that high achieving Black students might suffer after interaction with students of various academic levels. For this interaction phase of the study, participants were greeted by and introduced to the confederate. Participants were informed that the experimenter needed videotaped footage of participants discussing controversial topics. The participants were also informed that the footage would be deleted after the interaction. Participants were videotaped in interest of the integrity of the study. Participants were then asked to introduce themselves in front of the camera (which includes giving their cumulative GPA). One group of participants interacted with a Black low achieving student confederate who reported a low GPA of 1.7. The other group interacted with a Black high achieving student confederate who reported a high GPA of 3.7. They were then asked to discuss their opinions on two prevalent issues surrounding African-American education (low statewide test scores of Black students in urban districts, and the peer pressure that Black students face in urban districts). The low achieving confederate's views were structured and reflected views typical of low-achieving students in Fordham's (1996) study (rejecting academic excellence and motivation because it is seen as a value of dominant society and not Black culture). The high achieving confederate's views were also structured and reflected views typical of high-achieving students in Fordham's (1996) study (supporting academic excellence to better themselves and the African American community in general) (See Appendix D for script). After the 10 minute interaction, participants were informed that the delay period was over and that they would then complete the serial cognition study. They were then administered the Stroop color-naming test. After the Stroop was completed, participants

were probed for suspicion, debriefed, thanked, and released.

Hypotheses

Research has established that increasing self-regulatory demands temporarily depletes performance on a subsequent task requiring executive attentional resources (Richeson & Trawalter, 2005). Furthermore, there is evidence that Black high achieving students limit themselves academically so that they will not be ridiculed by Black low achieving students (Fordham & Ogbu, 1986). According to this research, it was hypothesized that:

1. Participants who interact with a low achiever confederate will reveal lower Stroop task performance than participants who interact with a high achiever confederate irrespective of the feedback condition.

Fordham and Ogbu (1986) established that Black high achievers limit their academic ability around Black low achievers. However, the participants in the false feedback condition should be more aware of the acting White phenomenon because it will be made salient as a result of the feedback they receive. As a result, they should engage in more self-regulation than the participants in the neutral feedback condition. As such, it was hypothesized that:

2. Participants in the false feedback condition (White values) who interact with a low achiever confederate will obtain lower Stroop task performance, compared to participants in the neutral feedback (parental values) condition who interact with a low achiever confederate.

Fordham and Ogbu (1986) suggested that high achieving Black students limit their academic prowess around Black low achievers because of the stigma attached to being a Black high achiever. As such, it would be expected that around other high achievers, the need to self-regulate would not exist because high achievers agree as to the importance of academic excellence (Fordham, 1986, 2008). Accordingly, it was hypothesized that:

3. The feedback condition will not affect Stroop task performance when participants interact with a high achiever confederate.

Measures

The Academic Self-Concept Scale (ASCS)

The Academic Self-Concept Scale (ASCS; Reynolds, Ramirez, Magrina, & Allen, 1980) is a 40 item self report scale that measures academic attitudes and self-concept in college students. The ASCS uses a 4-point Likert scale format from strongly disagree (1) to strongly agree (4). Higher scores on the ASCS indicate higher academic self-concept. The initial development of the ASCS was based on field-testing with 427 college students (approximately 60% female) on a 59-item scale, which resulted in the current 40-item-scale (Reynolds, Ramirez, Magrina, & Allen, 1980). In a validation study, Reynolds (1988) sampled 589 college students. Approximately 58% of the participants were women. The sample was composed of 87% White students, 7% Black students, 5% Hispanic students, and 1% other. Participants represented a range of academic majors (physical sciences, social sciences, and liberal arts). Participants were 25% freshmen, 29% sophomores, 30% juniors, and 16% seniors.

The factor analysis produced a seven-factor structure that accounted for 52.6% of the total variance. The first factor represents a grade and effort dimension (e.g. “For me, studying hard pays off.” p. 2). The second factor is defined as study habits/organizational self-perceptions (e.g. “I do not study as much as I should.” p. 2). The third factor involves peer evaluation of academic ability (e.g. “Others consider me a good student.” p. 2). The fourth factor represents self-confidence in Academics (e.g. “Most exams are easy for me.” p. 2). The fifth factor represents satisfaction with school (e.g. “Being a student is a very rewarding experience.” p. 1). The sixth factor is defined by items that indicate self-doubt regarding ability (e.g. “I often get discouraged about school” p. 2). The seventh factor suggests a self-evaluation with external standards dimension (e.g. “I feel teachers’ standards are too high for me” p. 1) (Reynolds, 1988). The scale yields a global academic self-concept score and seven subscale scores, but researchers only use the global score due to the tentative description of the factors (Cokley, Komarraju, King, Cunningham, & Muhammad, 2003). This study used the global score. An internal consistency coefficient of .91 and statistically significant correlations between the ASCS and self-esteem (.40) and GPA (.45) were reported by Reynolds, et. al. (1980).

The Stroop Test

The Stroop test was originally developed by Stroop (1935). A measure of executive functioning, the Stroop is very popular and widely used (Macleod, 1991). The purpose of the Stroop is to measure one’s ability to maintain a goal while suppressing a habitual response in favor of a less familiar response (Strauss, Sherman, & Spreen, 2006). The Stroop is easily administered and is relatively brief to take (Macleod, 1991). Although there are many versions of the Stroop test, the Golden version (Golden, 1978; Golden &

Freshwater, 2002) is widely used and discussed in neuropsychological texts (Franzen, 2000; Strauss, Sherman, & Spreen, 2006). The test materials for this particular version include three sheets of paper. On the first sheet are printed five columns (twenty in each column) of color names (e.g. blue, green, red) printed in black ink (Word Score). The examinee is asked to read the words out loud, in order, and they are asked to correct their incorrect responses. For the second part of the test (Color Score), the examinee is presented a sheet of paper with printed columns of Xs in three different colors (red, blue, green); the examinee is asked to name the color. For the third part of the test, the examinee is presented a sheet of paper on which is printed the same words as those in the first part of the test. On the third part (Color-Word Score), however, the words are printed in colors different from the colors named by the words. For example, the word blue is printed in red ink (Franzen, 2000). For each of the three parts of the test, the score is number of correct responses obtained within 45 seconds. The three raw scores are converted into standardized scores for comparison purposes (Franzen, 2000).

The dependent variable in this study was Stroop task performance as measured by Interference T-scores. To calculate the Interference T-score, one must first find the difference between the raw Color-Word score and the Predicted Color-Word score. The Predicted Color-Word score is based on the participant's Word and Color scores, or the first two test pages of the Stroop. The Color-Word score is one's performance on the final test page of the Stroop consisting of names of colors presented on varying ink colors. The Predicted Color-Word Score is determined by using a table provided in the administration manual and finding the intersection between a participant's raw Color score and their raw Word score. The difference between the raw Color-Word score and the Predicted Color-

Word score equals the raw Interference score; this score is then converted into a T-score (Golden & Freshwater, 2002). The equation is as follows:

Color-Word score – Predicted C-W score = Interference Raw Score; which is then converted into a T-Score. The Interference T-score was used for all analyses.

Conceptually, the Interference construct on the Stroop assesses one's ability to separate the word and color naming stimuli. Interference is caused by the difficulty of suppressing an over learned response in service of a targeted response. On the final page of the Stroop an individual must continuously suppress the over-learned or habitual response of reading the name of the color and name the color of ink the word is printed in as instructed. Interference scores range from 30 to -29 ($M = 0$, $SD = 10$) with corresponding T-Scores. Those who don't experience much interference will be able to suppress the reading of the word presented on the Color-Word page and proceed with color naming, which would result in higher scores. In others, suppression of naming the word presented is more difficult and these individuals must process the word and the color before responding, which results in a lower Color-Word score. Finally, for some individuals the word and color response are one in the same due to significant interference. In other words, these individuals experience considerable difficulty with separating the word and color naming stimuli and thus cannot suppress the reading of the word in order to name the color the word is printed in. These participants produce the lowest scores (Golden & Freshwater, 2002).

The Stroop test has garnered positive psychometric reviews. Jensen (1965) found that the test-retest reliability coefficient for the three parts of the test are .79, .88. and .71, respectively. Test-retest intervals ranged from a few minutes to one week. Franzen,

Tishelman, Sharp, and Friedman (1987) found the following test-retest reliability coefficients for the three parts of the test, .83, .74, and .67, respectively.

In terms of its validity, the Stroop test has been found to load on a construct that appeared to relate to cognitive inhibitory control (Kindlon, Mezzacappa, & Earls, 1995). Homack and Riccio (2004) suggest that it is important to consider evidence of sensitivity to central nervous system dysfunction when considering the construct validity of neuropsychological measures. It was further suggested that it is important to consider evidence of sensitivity and specificity of the measure to frontal lobe lesions when considering the construct validity of measures that are said to tap into executive function (Homack & Riccio, 2004). By this measure, Golden (1976) established the Stroop's construct validity when he used the Stroop with brain injured and non-brain injured individuals and found that the brain-injured individuals with left hemisphere damage performed the worst on all three parts of the test and that right hemisphere injured individuals scored lower on the color test and average on the other two. Additionally, Stuss, Floden, Alexander, Levine, and Katz (2001) found that in a group of individuals with lesions to frontal and non frontal lobe, only those with frontal lobe lesions demonstrated impaired performance on the Stroop.

Design and Data Analysis

This study utilized an analogue research methodology, as it sought to replicate a real-world situation under controlled conditions (Heppner, Kivlighan, & Wampold, 1999). The experimental design of this study was a factorial design. A factorial design is a between-group design, which includes two or more independent variables examined at two or more levels (Creswell, 2012). The dependent variable was the Stroop Interference

T-Score. There were two independent variables in this study (feedback given and the achievement level of the confederate), each with two levels (see Figure 1). Therefore, this study utilized a 2 x 2 factorial ANOVA to analyze the data.

	High Achiever	Low Achiever
False Feedback (White) Values		
Neutral Feedback (Parental) Values		

Figure 1. Cell representation of 2x2 Factorial ANOVA.

CHAPTER IV

RESULTS

Hypotheses

The primary question that this study answered was do self-regulatory demands of same-race interaction between high achieving and low achieving Black college students negatively impact executive functioning of Black high achievers. Based on the research (e.g. Fordham, 2008; Richeson & Trawalter, 2005), three hypotheses were formed:

1. Participants who interact with a low achiever confederate will reveal lower Stroop task performance than participants who interact with a high achiever confederate irrespective of the feedback condition.
2. Participants in the false feedback (White values) condition who interact with a low achiever confederate will reveal lower Stroop task performance, compared to participants in the neutral feedback (parental values) condition who interact with a low achiever confederate.

3. The feedback condition will not affect Stroop task performance when participants interact with a high achiever confederate.

A 2 x 2 factorial analysis of variance was performed on the data. A factorial analysis of variance was selected as there are two independent variables (achievement level of the confederate, and feedback condition) both of which have two levels: high and low achiever confederates, and false and neutral feedback). The dependent variable in this study was the Stroop Interference T-Score score.

Sample Information

Although the initial sample consisted of 40 participants, two participant's data were not included in the analyses because they suspected deception. Specifically, they suspected that the confederate was in fact part of the study and that her responses were scripted. One of the participants who suspected deception interacted with a high achieving confederate in the neutral feedback condition, while the other participant interacted with a low achiever in the false feedback condition. The latter indicated that it was difficult to believe that a college student would espouse the opinions of the low achiever confederate. As such, there were a total of 38 cases for analysis. The number of participants in each condition was as follows: high achiever/false feedback = 10, low achiever/false feedback condition = 9, high achiever/neutral feedback = 9, low achiever/neutral feedback = 10.

Independent samples t-tests were performed on the data to assess for differences in Stroop scores between the two university samples. The first analysis compared those in the high achiever, false feedback condition from the large university ($n = 3$, $M = 53$, SD

= 2) to those in the high achiever, false feedback condition from the midsize university ($n = 7, M = 42.6, SD = 7.5$). Results revealed that there was a significant difference between the two samples ($t = 2.3, p = .05$). The second analysis compared those in the high achiever, neutral feedback condition from the large university ($n = 4, M = 41, SD = 11.3$) to those in the high achiever, neutral feedback condition from the midsize university ($n = 5, M = 48, SD = 7.7$). The results were not found to be significantly different ($t = -1.2, p = .28$). The third analysis compared the participants in the low achiever, false feedback condition from the large university ($n = 3, M = 53, SD = 7$) to those in the low achiever, false feedback condition from the midsize university ($n = 6, M = 43.8, SD = 4.6$). The results revealed that the scores from the two samples were significantly different ($t = 2.4, p = .05$). The fourth analysis compared participants in the low achiever, neutral feedback condition from the large university ($n = 3, M = 44.7, SD = 2.5$) to those in the low achiever, neutral feedback condition from the midsize university ($n = 7, M = 46.9, SD = 9.3$). Results revealed that there was not a significant difference between the two samples ($t = -.39, p = .71$). The final analysis compared the two total samples. Results revealed that the scores of participants from the large university ($n = 13, M = 47.4, SD = 8.5$) were not significantly different from the scores of the participants from the midsize university ($n = 25, M = 45.2, SD = 7.4$), ($t = .802, p = .43$). Given the significant differences between university samples within the false feedback conditions, each university sample was also analyzed separately. Neither sample revealed significant within group differences. Based on this information, the samples were combined and all analyses were conducted on the total sample.

Descriptive Statistics

Preliminary analyses were performed on the data, which yielded the frequencies and descriptive statistics. Descriptive statistics for Stroop Interference T-Score for all four conditions are presented in Table 1. A visual representation of the interaction between factors is presented in Figure 2.

Table 1

Means and Standard Deviations for Stroop Interference T-Scores

Achievement Level	Feedback Condition	<i>n</i>	<i>M</i>	<i>SD</i>
High Achiever	Neutral Feedback	9	45.1	9.6
	False Feedback	10	45.7	8.0
	Total	19	45.4	8.5
Low Achiever	Neutral Feedback	10	46.2	7.8
	False Feedback	9	46.9	6.8
	Total	19	46.5	7.1
Total	Neutral Feedback	19	45.7	8.5
	False Feedback	19	46.3	7.3
	Total	38	46.0	7.8

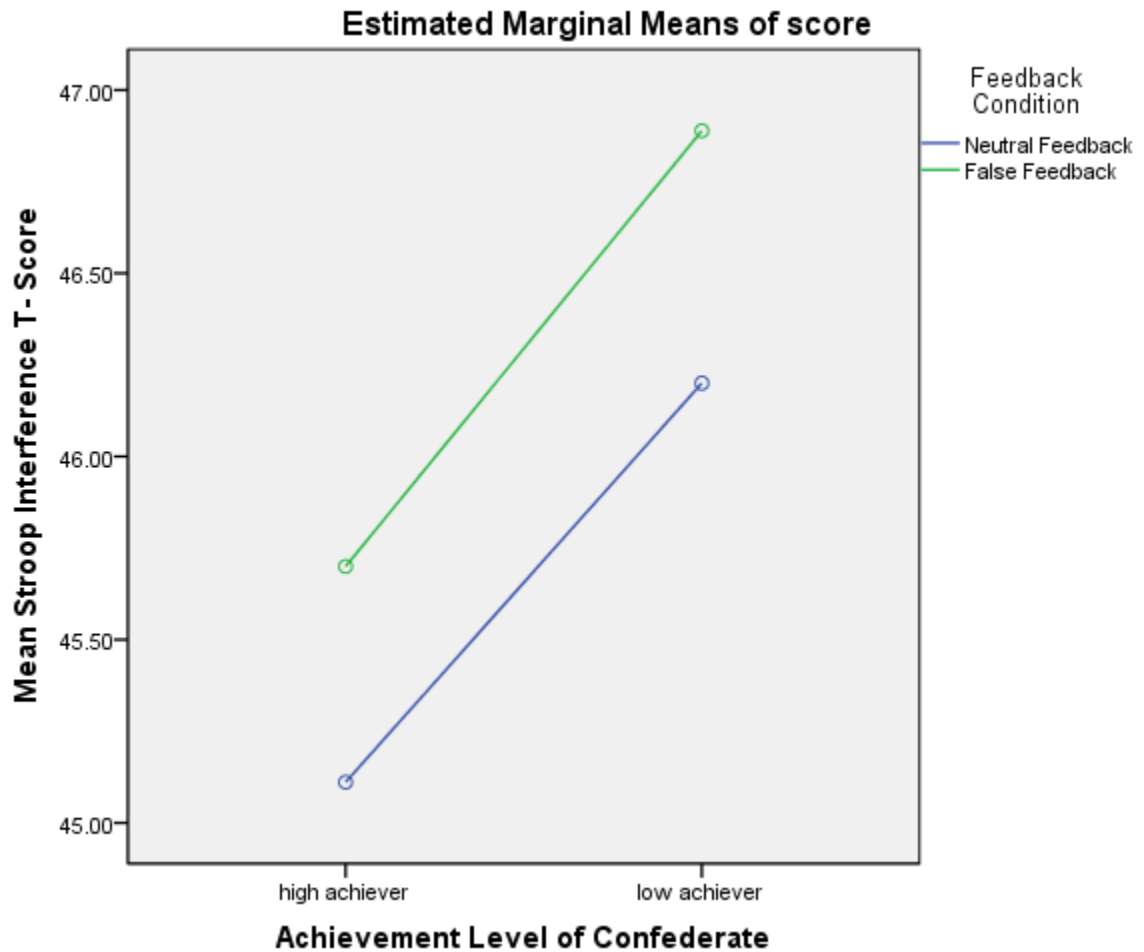


Figure 2. Visual representation of the interaction between the independent variables

Data were screened to ensure that the assumptions of factorial ANOVA were fulfilled. Levene’s test of equality of variances was conducted within ANOVA and indicated homogeneity, $p = .48$. Tests of normality were also conducted. Specifically, the Shapiro-Wilk test indicated normality, $p > .39$.

ANOVA

The summary of the Univariate ANOVA results are presented in Table 2. Main

effect results revealed that Stroop Interference T-Score was not significantly different for participants irrespective of the achievement level of the confederate with whom the interacted, $F(1, 34) = .19, p > .05$. Results also revealed that Stroop Interference T-Scores were not significantly different for participants as result of the feedback they were given, $F(1, 34) = .06, p > .05$. Finally, the results revealed that there was no interaction between achievement level of the confederate and feedback condition, $F(1, 34) = .0, p > .05$.

Table 2

2 X 2 FACTORIAL ANOVA Table

Source	df	F	η	p
Achievement Level	1	.19	.005	.67
Feedback Condition	1	.06	.002	.81
Achievement x Condition	1	.00	.00	.99
Error	34			

CHAPTER V

DISCUSSION

The purpose of the present study was to investigate the role of self-regulation during same-race interaction between African American college students. Specifically, this study examined if the kind of feedback provided to students after taking an academic self-concept questionnaire would impact performance on the Stroop, a measure of executive functioning. Some students were told falsely that their responses on the questionnaire suggested that they have educational values consistent with Caucasian cultural values while others were given neutral feedback that most people's educational values are consistent with their parent's values. The hypotheses for this study were as follows:

1. Participants who interact with a low achiever confederate will reveal lower Stroop task performance than participants who interact with a high achiever confederate irrespective of the feedback condition.

2. Participants in the false feedback condition who interact with a low achiever confederate will reveal lower Stroop task performance, compared to participants in the neutral feedback condition who interact with a low achiever confederate.
3. The feedback condition will not affect Stroop task performance when participants interact with a high achiever confederate.

Explanation of Results

The first hypothesis was not supported. The results revealed that participants who interacted with a low achiever confederate had Interference T-scores on the Stroop that were not significantly different from those who interacted with a high achiever confederate irrespective of the feedback condition. The second hypothesis was not supported. The results revealed that participants in the false feedback condition who interacted with low achiever confederate had scores not significantly different from participants in the neutral feedback condition who interacted with a low achiever confederate. The third hypothesis was also not supported. Although, the participants interacting with high achieving Black students in the false feedback condition had Stroop scores similar to those in the neutral feedback, the overall ANOVA was not significant.

Based on theory posed in previous research concerning the detachment or disengagement of academic pursuit seen in some Black students (Fordham, 1996; Cokley, 2001), this research sought to add to the understanding of the achievement gap. The design of this study was largely based on research focused on the role of self-regulation during interracial interaction (Richeson & Shelton, 2003; Richeson, et. al., 2003; Richeson & Trawalter, 2005; Richeson & Trawalter, 2008). The results of this

previous research suggested that individuals who are, after taking the Implicit Associations Test, given feedback that that they might be more prejudiced than they thought evidenced lower performance on an executive function test after interacting with someone of the opposite race than those who were not given such feedback. These results highlighted the role of self-regulation because those who were provided the false feedback had lower scores than the control group while all else was held constant.

The present study sought to replicate these results with a same-race sample of Black students. Instead of interaction between people of different races, this study focused on Black students with differing levels of academic achievement. Though the designs of the two studies are similar, there are a couple of key distinctions. First, in Richeson and Trawalter (2005), the IAT was used to substantiate the feedback given to participants whereas in the present study, the ASCS was used. The version of the IAT used in Richeson and Trawalter (2005) focused on implicit prejudice people hold, which would likely cause more of an emotional reaction than one's thoughts about their educational values as with the ASCS. In other words, one's reactions to being told that their educational values are consistent with another culture is more benign than being informed that one is more prejudiced than they thought. This is important because the nature of the measure that is used and the implications perceived from the measure can impact the how the feedback impacts participants personally. The second distinction between studies has to do with the experimenters. In the Richeson and Trawalter (2005) study there were two experimenters during the second, "unrelated" experiment, which included the interaction with the confederate of similar or different race. One experimenter was Black and one White. The first experimenter was White and

administered the IAT and introduced the participants to the second, “unrelated” experiment. The second, “unrelated” experiment was either run by a Black experimenter or a White experimenter. In the present study, while the confederate took the role of a high achiever with some participants and of a low achiever with others, the experimenter was an African American male who would likely be assumed to be a high achiever given that the participants knew that the experimenter was a Ph.D. student. The issue here is that in the present study, unlike Richeson and Trawalter (2005), the experimenter related with all participants similarly on the characteristic of importance, i.e. achievement level, which could have impacted dynamics in such a way to affect the outcome. In Richeson and Trawalter (2005) the participants were all White students and both the experimenter during the second, “unrelated” study and the confederates were randomly Black or White. As such, generalizability could be assumed and the potential confounding variable of race of the experimenter was accounted for. These issues were not accounted for in the present study.

This issue may be one of the possible explanations for the lack of significance in data of the tested hypotheses in the present study. Specifically, in the present study the participants could have related with and felt supported by the presence of the high achieving experimenter, which could have decreased the likelihood that they would need to change how they would typically feel, act or behave, or put simply, self-regulate. Psychodynamic theory, for example, suggests that one’s ego, or in the present study, one’s confidence in their present representation of their self, can be supported or maintained by another in whom they may find strengths that they may or may not recognize within themselves (Gabbard, 2004). It seems possible, then, that participants in

the present study would have resorted to self-regulation if the experimenter was assumed to be a low achiever or if it were more difficult for them to assume the experimenter's achievement level.

Another possible explanation of the data has to do with the nature of the independent variable. According to theory, it was assumed that the independent variable, receiving varying feedback and interacting with a student of high or low achieving academic level, would trigger a history of the stigma of acting white and as a result provoke self-regulation. In Richeson and Trawalter (2005), the feedback that the participant might be more prejudice than they thought did seem to trigger participant's experience and social construction of race and prejudice which manifested itself with potential shame and as a result, self-regulation. That the results in the present study did not reach statistical significance could be due to the independent variable not triggering participant's experience or social construction of the stigma of being a high achiever seen with some Black students. Perhaps more direct feedback or feedback that mirrored Fordham's (1996) experience of how low achievers conveyed their disapproval of high achievers academic effort and achievement would have triggered the stigma. The low achievers in Fordham's (1996) ethnographic study conveyed their sentiment in a shaming manner. The high achievers, too, experienced other's reaction to their academic identity and achievement as either confrontational or as disapproving. Given this lived reality, perhaps providing feedback that somehow mirrored what Fordham (1996) reported would have produced the self-regulation that was hypothesized. For example, having the confederate share thoughts consistent with what low achievers expressed about high achievers in Fordham's (1996) study would be one way to strengthen the experimental

manipulation in this study.

There were two participants in the present study who reported that they suspected deception during the study (e.g. believing the confederate was actually part of the study or that the confederate's responses were scripted). It is possible that other participants also felt that there might be deception in the study but did not admit to such suspicions, which could have led to participants not feeling stigmatized by the independent variable. If other students did suspect deception, but didn't admit to it, there would likely be no need for self-regulation because there is the possibility that the confederate, along with the experimenter of this study, were high achievers also and therefore would not hold negative views of their high academic achievement. There is research that suggests that participants will deny suspected deception if they know they are being deceived (Taylor & Shepperd (1996).

This is the first study to test the role of self-regulation as result of same race interaction. As such, there were no studies to consult on gender representation and possible gender differences. However, both genders are equally represented in the research this study attempted to replicate (see Richeson & Trawalter, 2005). In the current study there were slightly more female participants than there were males. In the high achiever, false feedback condition there were 7 males and 3 females. In the high achiever, neutral feedback condition there were 3 males and 6 females. In the low achiever, false feedback condition there were 3 males and 6 females. In the low achiever, neutral feedback condition there were 4 males and 6 females. It is also possible that the gender of the participants impacted the results of this study. It is possible, for example, that males and females respond differently to same-race interaction about academic

issues. For example, there is stronger support for the academic disidentification hypothesis for Black males than there is for Black females (Cokley, 2002). This might suggest that the Black males in this study could have responded differently to the feedback given about their educational values because they don't identify with academic pursuit to the same degree as Black females. If this occurred, the Black males would possibly have higher scores on the Stroop due to a decreased need to self regulate because of their disidentification and not to stigma about acting White. However, future research is need to explore this hypothesis.

Limitations

A limitation of this study concerns that independent variable (achievement level and feedback given to the participant). There was no assessment of the strength or effectiveness of the independent variable. As such, it is possible that a more effective manipulation could have impacted the data toward significance. For example, feedback that lasted longer such as having a discussion with participants about their educational values (false or neutral) could have made it more effective. Another option would be to conduct the study in a group in order to more closely mirror the dynamics in Fordham's (1996) study. Such a design might induce self-regulation in response to perceptions about what others in the group might be thinking about the participant. In Fordham (1996) the high achievers changed how they behaved or what they said in front of low achievers. It is possible that the one-on-one interaction in this study could not quite prompt such self-regulation.

Finally, participants in this study were administered the Stroop task, which is a measure of the inhibitory control component of executive function. The design of this

study was based on Richeson and Trawalter (2005) which measured inhibitory task control in order to assess self-regulation. It is possible that other aspects of executive function or mental faculties are impacted by same-race interaction between high and low achieving Black students. Indeed, although self-regulation is the expression of one of several faculties of the executive function system, inhibitory control, there are other faculties of executive function that may be affected by such interaction. For example, it is possible that one's ability to multi-task or to solve problems and monitor one's progress could be compromised as result of being a high achieving Black student. Although compromised ability to multi-task, for example, would likely lead to an outward manifestation different from self-regulation, it would still be important to understand how other executive function capacities could be impacted, as measured by other executive function tests.

Implications for Theory

The academic achievement of Black students has been and continues to be a major research and theoretical focus (Harper & Davis, 2012). The results of this study have several implications for theory. First, with regard to the Acting White phenomenon, this study did not provide direct understanding of the psychological mechanisms behind what it means to act White. However, the knowledge gained from having conducted the present study can inform theory. During the interaction phase of the present study, many of the participants referred to the criticism they received - or that their friends received - as a result of being high achievers. Some actually referred to acting White. This suggests that after almost 20 years since Fordham (1996), there is still a stigma attached to being a Black high achiever. This study highlights this reality and also the importance of future

research to develop and test theory in this area to influence pedagogy, curriculum, and counseling.

Second, this study also highlights the role of development in individual's academic self-concept. None of the participants in this study who interacted with the low achieving confederate conceded when the confederate espoused ideas contrary to theirs, which might suggest the participant's stability regarding their academic self concept. In Fordham (1996) the high achievers stood their philosophical ground also, but did so with the researcher and they reported that they did so when challenged directly by other students. Future research should be conducted to explore the academic self concept of high school students as compared to that of college students.

Regarding self-regulation theory, this study highlights the nuanced and complex nature of self-regulation. We do not yet know when self-regulation starts to occur and when it is detectable. It is possible that a minor change to the nature of the feedback given or interaction with the confederate in this study could have resulted in the participants need to self-regulate. One difference between this study and Fordham (1996) is that the students in her study were asked about acting White and the associated pressures, whereas in the present study, I tried to detect them using a psychological measure. In other words, Fordham (1996) asked directly as she made relationships and embedded herself into the culture, and in the present study, I inferred during a quantitative experiment, indirectly. It is not clear how direct or indirect one would have to be in order to detect self-regulation as a result of psychological pressure to limit one's ability. Perhaps simply asking participants after the interaction phase if they felt pressure to change how they behaved, felt, or thought (self-regulate) would have activated an

unconscious process and influenced their performance on the Stroop. Such a question lies between the ways in which the effects of the acting White phenomenon were pursued in the present study and Fordham (1996) because such a question does not ask about acting White as in Fordam (1996), but does ask about it's observed affect. In effect, this study highlights the need for research and theory to clarify this issue and provide understanding of when self-regulation starts to occur, what defines it as self-regulation per se and not simple awareness of the motivation for one self-regulate, and how sensitive measurement has to be to detect it. Heatherton and Baumeister (1994) refer to a process that takes place during self-regulation, which suggests that self-regulation occurs along a continuum. This study and future studies like it might be able to directly showcase some of the nuances of self-regulation and foster understanding on the point at which self-regulation starts to occur and when it is detectable by psychological measures.

Implications for Research

It would be important for future research in this area to focus on the interaction between the experimenter, confederates, and participants. Perhaps including a White experimenter might highlight how participants are affected based on their thoughts or assumptions about the experimenter. In addition, it would be important to vary the design from the perspective of who administers the feedback? and how it is administered. For example, the experimenter in this study was a Black high achieving student. If both levels of the manipulation (i.e. achievement level and feedback) were administered indirectly by the confederate it would allow analysis of how participants were impacted as a result of their perceptions of the experimenter. In the present study the manipulation as administered only allowed for analysis of how participants reacted to a single dimension,

while in the real world, their interactions are multidimensional.

In line with Fordham's (1996) original work, perhaps a qualitative study focused on the psychological costs of Black high achievers would yield information that would direct quantitative or mixed methods research. Open-ended questions, utilizing a semi-structured interview about students' experiences of how they are affected because of their educational values might point researchers to an even more nuanced understanding of the psychological mechanisms at play. Hearing directly from students could assist researchers with building common themes, which could generate more research questions and lead to greater understanding of this issue. Qualitative inquiry on this subject would also take this line of research to the next level. To my knowledge, the only studies that have asked Black high achieving students about the psychological costs they endure in relation to their interaction with Black low achievers, is Fordham (2006). Fries-Britt and Griffin (2007) did, for example, study high achievers' thoughts on the psychological costs they experienced, but the focus was on students who felt pressures from White students, not other Black students. As such, a qualitative study that mirrors the present one, would be the first of its kind in terms of the pointed focus of psychological costs behind dealing with the stigma of being a high achieving Black student.

Finally, as this was the first study to attempt to explain the psychological mechanisms at the root of the Acting White phenomenon, perhaps preliminary quantitative studies could be undertaken that would build theory in the direction of this study. This line of inquiry would help establish the veracity of the possibility that same-race interaction between high and low achieving Black students leads to the self-regulation of high achievers. Given that this study tried to replicate trends in a different,

albeit related area of research, perhaps starting with simpler designs that test aspects of the overarching aim would be important. For example, survey research including questions about students having experienced psychological costs or pressures might first tell us more about the frequency and intensity of the pressures these students experience.

Implications for Practice

Psychological practice can also benefit from this study. First, therapists, counselors, etc. should be aware of the complex and nuanced nature of the stigma of being a Black high achiever. It is possible that some individuals may be, to some degree, aware of the acting White stigma, but not necessarily be able to articulate how it impacts them, for self-regulation can occur at the conscious, pre-conscious, or unconscious level (see Muraven, Tice, & Baumeister, 1998). Therapists should be sensitive with how these issues are brought up in therapy. As is the case with other content in therapy, asking about potentially affect-laden material in a direct manner can prompt denial or resistance (Moyer & Rollnick, 2002). Having a discussion about the client's educational experiences, messages that were internalized or heard, and the evolution of the client's academic identity can bring up issues of stigma in a less direct and more egalitarian manner. However, therapists will want to ascertain direct and indirect messages about the client's culture and expectations from the therapist. It is possible that some clients, particularly Black clients, will expect a more direct approach from their therapist (Erickson Cornish, Schreier, Nadkarni, Henderson, Metzger, & Rodolfa, 2010). This complexity highlights the importance of studies like this which can provide roadmaps in a sometimes very ambiguous and complex matter. It is important that therapists be comfortable with bringing a discussion of race and culture into the therapy room if

needed. Therapists should consider talking openly about how their own race or culture might influence the material and process of therapy.

School psychologists and other professionals involved in IQ and achievement assessment of both high school and college level Black student should be aware of how the stigma of being a Black high achiever might influence these students during assessment. As Fordham (2008) reminded us some Black high achievers do, in fact, limit their academic or intellectual ability in order to avoid its negative stigma. Some students involved in assessment could purposely limit their ability. Additionally, the current study supports previous research and highlights (e.g. Heatherton & Baumeister, 1994) the complex nature of self-regulation and the likelihood that this process can occur outside of one's consciousness. Thus, assessment clients can be impacted by psychological processes that they are unaware of, thereby impacting their performance in undesirable ways. Professionals involved in academic and vocational assessment will want to be aware of these issues and also be aware of how standard testing introduction and instruction without previous relationship building, trust, and comfort with the client to promote true effort in testing, can influence test outcomes.

References

- Baumeister, R. F., & Heatherton, T. F. (1996). Self-regulation failure: An overview. *Psychological Inquiry*, 7, 1–15. doi:10.1207/s15327965pli0701_1
- Baumeister, R. F., & Vohs, K. D. (2004). Self-regulation and the executive function of the self. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 197–217). New York: Guilford Press.
- Bergsieker, H. B., Shelton, N. J., & Richeson, J. A., (2010). To be liked versus respected: Divergent goals in interracial interactions. *Journal of Personality and Social Psychology*, 99(2), 248-264. doi.org/10.1037/a0018474
- Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.
- Cokley, K. (2001). Gender differences among African American students in the impact of racial identity on academic psychosocial development. *Journal of College Student Development*, 42, 480-486.
- Cokley, K. (2002b). Ethnicity, gender, and academic self-concept: A preliminary examination of academic disidentification and implications for psychologists. *Cultural Diversity and Ethnic Minority Psychology*, 8, 378–388.
- Cokley, K., Komarraju, M., King, A., Cunningham, D., & Muhammad, G. (2003). Ethnic differences in the measurement of academic self-concept in a sample of African American and European American college students. *Educational and Psychological Measurement*, 63, 707-722.

- Cokley, K. O., & Chapman, C. (2008). The roles of ethnic identity, anti-White attitudes, and academic self-concept in African American student achievement. *Social Psychology of Education*, 11, 349-365. doi:10.1007/s11218-008-9060-4
- Creswell, J. W. (2012). *Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston, MA: Pearson.
- Engle, R. W., Conway, A. R. A., Tuholski, S. W., & Shishler, R. J. (1995). A resource account of inhibition. *Psychological Science*, 6, 122-125.
doi.org/10.1111/j.1467-9280.1995.tb00318.x
- Engle, R. W. (2002). Working memory capacity as executive attention. *Current Directions in Psychological Science*, 11, 19-23.
doi.org/10.1111/1467-8721.00160
- Cornish, J.A., Schreier, B.A., Nadkarni, L. I., Henderson Metzger, L., Rodolfa, E.R. (2010). *Handbook of multicultural counseling competencies*. Hoboken, NJ: Wiley.
- Fordham, S., & Ogbu, J. U. (1986). Black students' school success: Coping with the "burden of 'acting White.'" *The Urban Review*, 18, 176-206.
doi:10.1007/BF01112192
- Fordham, S. (1988). Racelessness as a strategy in Black students' school success: Pragmatic strategy or pyrrhic victory? *Harvard Educational Review*, 58, 54-84.
- Fordham, S. (1996). *Blacked out: Dilemmas of race, identity, and success at Capital High*. Chicago, IL: University of Chicago Press.

- Fordham, S. (2008). Beyond capital high: On dual citizenship and the strange career of “acting White.” *Anthropology & Education Quarterly*, 39, 227-246.
[doi:10.1111/j.1548-1492.2008.00019.x](https://doi.org/10.1111/j.1548-1492.2008.00019.x)
- Franzen, M. D., Tishelman, A. C., Sharp, B. H., & Friedman, A. G. (1987). Test-retest reliability of the Stroop word color test across two intervals. *Archives of Clinical Neuropsychology*, 2, 265-272.
- Franzen, M. D. (2000). *Reliability and validity in neuropsychological assessment* (2nd ed.). New York, NY: Plenum Publishers.
- Fries-Britt, S. & Griffin, K.A. (2007). The Black Box: How high achieving Blacks resist stereotypes about African Americans. *Journal of College Student Development*, 48(5), 509-524. [doi:10.1353/csd.2007.0048](https://doi.org/10.1353/csd.2007.0048)
- Golden, C.J., 1976. Identification of brain disorders by the Stroop Color and Word Test. *Journal of Clinical Psychology*, 32, 654 – 658.
[doi:10.1002/1097-4679\(197607\)32:3<654::AID-JCLP2270320336>3.0.CO;2-Z](https://doi.org/10.1002/1097-4679(197607)32:3<654::AID-JCLP2270320336>3.0.CO;2-Z)
- Golden, C. J. (1978). *Stroop color and word test*. Wood Dale, IL: Stoelting Co.
- Golden, C. J. & Freshwater, S. M. (2002). *The Stroop Color and Word Test: A manual for clinical and experimental uses*. Wood Dale, IL: Stoelting Co.
- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology*, 74, 1464-1480.
[doi:10.1037/0022-3514.74.6.1464](https://doi.org/10.1037/0022-3514.74.6.1464)

- Griffin, K.A. & Allen, W.R. (2006). Mo' money, mo' problems?: High achieving Black high school students' experiences with resources, racial climate, and resilience. *Journal of Negro Education*, 75(3), 478-494.
- Harper, S. R., & Davis III, C. H. F. (2012). They (don't) care about education: A counternarrative on Black male students' responses to inequitable schooling. *Educational Foundations*, 26(1), 103-120.
- Heatherton, T.F. & Baumeister, R.F. (1996) Self-regulation failure: Past present and future. *Psychological Inquiry*, 7(1), 90-98. doi:10.1207/s15327965pli0701_20
- Heppner, P. P., Kivlighan, D. M., & Wampold, B. E. (1999). *Research design in counseling* (2nd ed.). Boston, MA: Brooks/Cole.
- Herrnstein, R. J. & Murray, C., (1994). *The Bell Curve*. New York: The Free Press.
- Homack, S., & Riccio, C.A., (2004). A meta-analysis of the sensitivity and specificity of the stroop color and word test with children. *Archives of Clinical Neuropsychology*, 19, 725-743. doi:10.1016/j.acn.2003.09.003
- Hrabowski, F. A., III, Maton, K.I., & Greif, G.L. (1998). *Beating the odds: Raising academically successful African American males*. New York: Oxford University Press.
- Hughes, D., & Chen, L. (1997). When and what parents tell children about race: An examination of race-related socialization among African American families. *Applied Developmental Science*, 1, 200–214. doi:10.1207/s1532480xads0104_4
- Jensen, A. R. (1965). Scoring the Stroop test. *Acta Psychologica*, 24, 398 – 408. doi:10.1016/0001-6918(65)90024-7

- Kao, G. (2004). Parental influences on the educational outcomes of immigrant youth. *International Migration Review*, 38, 427-449.
[doi:10.1111/j.1747-7379.2004.tb00204.x](https://doi.org/10.1111/j.1747-7379.2004.tb00204.x)
- Kindlon, D., Mezzacappa, E., & Earls, F. (1995). Psychometric properties of impulsivity measures: Temporal stability, validity and factor structure. *Journal of Child Psychology and Psychiatry*, 36(4), 645-661.
- MacLeod, C. M. (1991). Half a century of research on the Stroop effect: An integrative review. *Psychological Bulletin*, 109,163–203. [doi:10.1037/0033-2909.109.2.163](https://doi.org/10.1037/0033-2909.109.2.163)
- Mandara, J. (2006). The impact of family functioning on African American males' academic achievement: A review and clarification of the empirical literature. *Teachers College Record*, 108, 206-223. [doi:10.1111/j.1467-9620.2006.00648.x](https://doi.org/10.1111/j.1467-9620.2006.00648.x)
- Marshall, S. (1995). Ethnic socialization of African American children: Implications for parenting, identity development, and academic achievement. *Journal of Youth and Adolescence*, 24, 377–396. [doi:10.1007/BF01537187](https://doi.org/10.1007/BF01537187)
- Moyers, T. B., & Rollnick, S. (2002). A Motivational Interviewing Perspective on Resistance in Psychotherapy. *Journal of Clinical Psychology*, 58(2), 185-193.
- Muraven, M., Tice, D. M., & Baumeister, R. F. (1998). Self-control as a limited resource: Regulatory depletion patterns. *Journal of Personality and Social Psychology*, 74, 774-789. [doi:10.1037/0022-3514.74.3.774](https://doi.org/10.1037/0022-3514.74.3.774)
- Muraven, M.R., & Baumeister, R.F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin*, 126, 247-259. [doi:10.1037/0033-2909.126.2.247](https://doi.org/10.1037/0033-2909.126.2.247)

- United States Department of Education. (2006). State Nonfiscal Survey of Public Elementary/Secondary Education. *National Center for Education Statistics*. Retrieved December 4, 2010, from http://www.nces.ed.gov/ccd/data_tables.asp
- Pong, S., Hao, L., & Gardner, E. (2005). The roles of parenting styles and social capital in the school performance of immigrant Asian and Hispanic adolescents. *Social Science Quarterly*, 86, 928-950. doi:10.1111/j.0038-4941.2005.00364.x
- Reynolds, W. M., Ramirez, M. P., Magrina, A., & Allen, J. E. (1980). Initial development and validation of the academic self-concept scale. *Educational and Psychological Measurement*, 40, 1013-1016.
- Reynolds, W. M. (1988). Measurement of academic self-concept in college students. *Journal of Personality Assessment*, 52, 223-240.
- Richeson, J.A., & Shelton, J.N. (2003). When prejudice does not pay: Effects of interracial contact on executive function. *Psychological Science*, 14, 287–290. doi:10.1111/1467-9280.03437
- Richeson, J. A., Baird, A. A., Gordon, H. L., Heatherton, T. F., Wyland, C. L., Trawalter, S., & Shelton, N. J. (2003) An fMRI investigation of the impact of interracial contact on executive function. *Nature Neuroscience*, 6, 1323-1328. doi:10.1038/nn1156
- Richeson, J.A., & Trawalter, S. (2005). Why do interracial interactions impair executive function? A resource depletion account. *Journal of Personality and Social Psychology*, 88, 934–947. doi:10.1037/0022-3514.88.6.934

- Richeson, J. A., & Trawalter, S. (2008). The threat of appearing prejudiced and race-based attentional biases. *Psychological Science*, 19, 98-102.
[doi:10.1111/j.1467-9280.2008.02052.x](https://doi.org/10.1111/j.1467-9280.2008.02052.x)
- Rojas, D.C., & Bennett, T.L. (1995). Single versus composite score discriminative validity with the Halstead-Reitan Battery and the Stroop Test in mild head injury. *Archives of Clinical Neuropsychology*, 2, 101-110.
- Sanders, M. G. (1997). Overcoming obstacles: Academic achievement as a response to racism and discrimination. *Journal of Negro Education*, 66, 331-345.
[doi:10.2307/2967253](https://doi.org/10.2307/2967253)
- Sackett, P. R., Hardison, C. M., & Cullen, M. J. (2004). On interpreting stereotype threat as accounting for African American-White difference on cognitive tests. *American Psychologist*, 59, 7–13.[doi:10.1037/0003-066X.59.1.7](https://doi.org/10.1037/0003-066X.59.1.7)
- Shapiro, J. A., & Neuberg, L. (2007). From stereotype threat to stereotype threats: Implications of a multi-threat framework for causes, moderators, mediators, consequences, and interventions. *Personality & Social Psychology Review*, 11, 107-130. [doi:10.1177/1088868306294790](https://doi.org/10.1177/1088868306294790)
- Steele, C. M. & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, 69, 797-811. [doi:10.1037/0022-3514.69.5.797](https://doi.org/10.1037/0022-3514.69.5.797)
- Stuss, D. T., Floden, D., Alexander, M. P., Levine, B., & Katz, D. (2001). Stroop performance in focal lesion patients: Dissociation of processes and frontal lobe lesion location. *Neuropsychologia*, 39, 771–786.
[doi:10.1016/S0028-3932\(01\)00013-6](https://doi.org/10.1016/S0028-3932(01)00013-6)

- Strauss, E., Sherman, E. M. S., & Spreen, O. (2006). *A compendium of neuropsychological tests: Administration, norms, and commentary*. (3rd ed.) New York, NY: Oxford University Press.
- Stroop, J.R. (1935). Studies of interference in serial verbal reaction. *Journal of Experimental Psychology*, 18, 643-662. doi:10.1037/h0054651
- Taylor, K.M., and Sheppard, J.A. (1996). Probing suspicion among participants in deception research. *American Psychologist*, 51, 886-887.
- Trawalter, S., & Richeson, J. A. (2006). Regulatory focus and executive function after interracial interactions. *Journal of Experimental Social Psychology*, 42, 406-412. doi:10.1016/j.jesp.2005.05.008
- Trawalter, S., Richeson, J.A., & Shelton, J.N. (2009). Predicting behavior during interracial interactions: A stress and coping approach. *Personality and Social Psychology Review*, 13, 243-268. doi:10.1177/1088868309345850
- Vohs, K. D., Baumeister, R. F., & Ciarocco, N. (2005). Self-regulation and self-presentation: Regulatory resource depletion impairs impression management and effortful self-presentation depletes regulatory resources. *Journal of Personality and Social Psychology*, 8, 632 - 657. doi:10.1037/0022-3514.88.4.632
- Wegner, D. M. (1994). Ironic processes of mental control. *Psychological Review*, 101, 34-52.
- Williams, H. A., (2005). *Self-taught: African American education in slavery and freedom*. Chapel Hill, NC: The University of North Carolina Press.

APPENDIX A
IRB APPROVAL

IRB Protocol #29355-SCH-HS

From: Kimberly Neuendorf

10/9/11

To: b.bryant, Shondale DeLoach, Donna Schultheiss, browne.lewis

Dear Dr. Schultheiss and Mr. DeLoach,

Thank you for your attention to our detailed requests. All is in order now, so please consider this email to be approval of your IRB protocol. A hard copy confirmation will follow.

Best wishes for success in your research endeavors.

Sincerely,
Kim Neuendorf, Ph.D.
Primary IRB Reviewer

APPENDIX B

**Cleveland State University
Informed Consent Form**

Project Title: Same-Race Regulatory Resource Depletion: Obstacles of Black High-Achievers

I, _____, consent to participate in a research project
(Name of participant)

conducted by Shondale DeLoach (Investigator)

I, Shondale DeLoach, a doctoral student at Cleveland State University, ask you to participate in a research study under the supervision of Professor Dr. Donna Schultheiss of the Department of Counseling, Administration, Supervision and Adult Learning (d.schultheiss@csuohio.edu). One of the tasks for this study will be for participants to help the experimenter gather data about college students' attitudes, perceptions, and beliefs about contemporary race relations. The other task is a part of a study that is being conducted to explore the relationship between one's performance on one cognitive task after having completed another task beforehand.

Participants will be asked to provide demographic information, and then to complete the first task. On the demographics questionnaire, participants will be asked to indicate their gender, age, year at CSU, and their college and high school G.P.A. For the first task, participants will be asked to complete a measure on academic attitudes. This study requires that there be a delay between the two tasks. During the delay, participants will be asked to participate in an unrelated study. In this part of the study, participants will be

asked to discuss controversial issues about urban school districts with another student. The interaction will last approximately ten minutes and will be videotaped. No one will see the videotaped footage of the interaction except for the experimenters, and the footage will promptly be erased after the experimenters have analyzed it. After this delay period, participants will be asked to complete the third and final cognitive task.

Participation in this will take forty minutes. Participants will receive class credit for their participation or will be entered into a drawing for a \$40.00 Amazon.com gift card. The potential risks that participants may experience during this study could possibly be anxiety from the race relation conversation. The potential risks associated with participation in this study are minimal and will not exceed those experienced in daily life. Potential benefits of participating in this study include satisfaction from contributing to scientific knowledge. Potential benefits of participating in this study also includes the opportunity to reflect upon and clarify ones values; participants may develop insight and consider opinions different from their own. **In addition, if any participant does not feel comfortable participating or answering particular questions, they can skip questions or stop participating at any time without penalty.**

Participation in this study is voluntary and anyone who agrees to participate in this study may withdraw at any time without penalty. By signing this form you agree that you are 18 years of age or older and that you agree to participate in this project. If you have any questions, please feel free to ask. You will be provided with information about the nature of this research following completion of today's session.

All responses will be confidential and will only be accessed by the investigator conducting this research. Should you decide that you would like to talk with someone about any issues that may arise after participating in this study, please feel free to contact the University Counseling Center at (216) 687-2277, or RT 1235 (located on the twelfth floor of Rhodes Tower).

I agree to participate in this research. I have read and understand the information that has been provided regarding this procedure, my tasks, the purpose of this research, any risks that may be involved, benefits that may result from the research, and educational feedback that will become available to me after participating. I understand that my participation is voluntary, and that I may terminate my involvement at any time without penalty. I understand that if I am under 18 years of age, I am not permitted to participate in this study.

I understand that if I have any questions about my rights as a research subject, I can contact the Cleveland State University's Institutional Review Board at (216) 687-3630. I can also contact: Dr. Donna Schultheiss at (216) 687-5063 or at d.schultheiss@csuohio.edu, or Shondale DeLoach at (216) 513-1862 or at s.deloach@csuohio.edu.

Name (Print)

Signature

Date

APPENDIX C

Demographics Questionnaire

1. How old are you? _____
2. What is your sex?
 - a. Male
 - b. Female
3. What is your ethnicity?
 - a. Native American
 - b. African American
 - c. Hispanic
 - d. White
 - e. Other
4. In which year are you currently enrolled?
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior
5. What is your current cumulative G.P.A.? _____
6. What was your cumulative high school G.P.A.? _____

APPENDIX D

Interaction Script

The experimenter will facilitate the entire interaction between participants and confederates. The experimenter will also act as the recorder of the interaction (although the interaction will not really be recorded), as such, the experimenter will remain in the room for the entire time.

Experimenter: “I am going to ask you to discuss prevalent issues concerning predominantly Black school districts. I will need to videotape your interaction so that I can later study your interaction more closely in order to best understand your views. I am going to ask you to discuss two issues, and I will lead the discussion. Please feel free to voice your views on the topics; your views will be made anonymous as the video footage will promptly be erased after I analyze the interaction. Also, you may agree or disagree with each other, this is a safe environment to have a discussion, I just ask that you explain your rationale for agreeing or disagreeing.

I will first ask each of you to introduce yourself to the camera, stating your name, your academic major, if declared, and your current cumulative G.P.A. Next, I will introduce the first topic for discussion and ask one of you to start the discussion, and then I will ask the other person to respond to the previous views. Again, please remember that you can agree or disagree; I just ask that you explain yourself in as much detail as needed. Are there any questions or concerns?” I will keep track of the interaction and ensure that each discussion lasts no longer than ten minutes, at which time I will bring the discussion to a close.

“Ok, the first topic for discussion is the low achievement test scores of Black high school

students. Statistics show that compared to their White counterparts, Black high school students' test scores are quite low at all grade levels. Please discuss your views on why this is the case, and what can be done to remedy the situation.”

The experimenter will then ask the low or high-achieving confederate to introduce himself or herself to the camera and then to discuss their views on the topic.

Low-achieving confederate: “Hi, my name is Anthony Perry and I’m majoring in communications. My overall G.P.A. is like 1.7 right now. About the topic, I have heard a lot about low test scores of Black students in the news and stuff, but I think people blow it out of proportion. I mean, Black students, even if they get good grades and test scores, can’t succeed in this society. So, I feel like, why should they do good in school if it’s just going to lead to the same outcome as someone who doesn’t do good in school. Black people need to focus on sticking together, and not on test scores.

OR

High-achieving confederate’s response: Hi, my name is Anthony Perry and I’m majoring in communications. My overall G.P.A. is 3.7 currently. I think that it’s true that White students typically perform better on achievement tests than Black students. I think it’s unfortunate, but some Black students do not care about educational achievement as much as they should. It seems like some Black students care more about pop culture or sports, and things like that. Personally, I try to do the absolute best that I can in school so that I can be someone to look up to by other Black students and people in the Black community in general. I think that Black students and Black people in general would be better off if we placed more emphasis on education.

Experimenter: “Ok, (to the participant) please introduce yourself to the camera first.

Then, please respond to the topic: do you agree or disagree, and please explain your rationale.”

In order to minimize the variability of the interaction and possible confounding variables, the confederate, if challenged by the participant, will only repeat or summarize their initial statement, or ask the participant to clarify or elaborate their point. This will also minimize the amount of material the confederate has to memorize.

When the interaction has come to a close, or at ten minutes, the experimenter will introduce the second and final topic for discussion.

Experimenter: “The second topic that I would like to get your views on is peer pressure in predominantly Black school districts. Studies find that the peer pressure that students face in Black schools leads Black students to discredit the importance of academic achievement, and to view underachievement as cool. Please discuss your views on why this is the case, and what can be done to remedy the situation.”

The experimenter will then ask the low or high-achieving confederate to introduce himself or herself to the camera and then to discuss their views on the topic.

Low-achieving confederate: “Hi, my name is Anthony Perry (or fake female name) and I’m majoring in communications. My overall G.P.A. is like 1.7 right now. I feel that peer pressure is a problem, but I think that sometimes people make it more extreme. Like if students are influencing other students to focus on things that have more to do with Black people, what’s wrong with that? It’s probably not the case that Black students are pressuring other Black students to look at underachievement as cool. Maybe they are just trying to show them that all this education stuff is a White thing. Maybe they are trying to make them look at Black education and values as cool.

OR

High-achieving confederate's response: Hi, my name is Anthony Perry and I'm majoring in communications. My overall G.P.A. is 3.7 currently. I think that peer pressure in Black schools is a big problem and I think the studies are correct. If you look at all the "cool" students, they are the ones who are the bad kids or the ones who don't make good grades. I think it's unfortunate that other Black students look up to them and try to be like them. I think what needs to happen is that the "bad kid" persona needs to be discredited and the smart kid persona needs to be looked at as cool. I think that would have to be done through the media, the arts, and at home.

When the interaction has come to a close, or at ten minutes, the experimenter will inform the participant that the intermediate task has come to a close and it is time to complete the final cognitive task, the Stroop task. The confederate will be asked to complete a "final questionnaire." This will be done in order to protect the integrity of the study.

APPENDIX E

The Academic Self-Concept Scale can be requested from William Reynolds: Department of Psychology, Humboldt State University, Arcata, California 95521.

APPENDIX F

The Stroop test can be purchased from Stoelting Co. 620 Wheat Lane Wood Dale, Illinois 60191. Phone: 630.860.9775