

From the Hood to Being Hooded: A Case Study of a Black Male PhD

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In this paper, we present a case study of a mathematically successful Black male named Rob. This case comes from a larger study involving 23 Black college students who had successfully negotiated the mathematics pipeline. Rob had recently obtained a PhD in applied mathematics, one of approximately seven Black Americans to do so in the year of his graduation. We highlight Rob's story in order to investigate the question- what does it mean to be a Black male in the context of mathematics learning and participation? The stories of Black men who have traveled far down the road of mathematics can be particularly powerful because they can reflect on their experiences and provide retrospective, first-hand understandings of what it means to endure and persist. We explore a number of themes characterizing Rob's experiences as a Black male and as a doer of mathematics. We give special attention to issues of racial identity, both in terms of Rob's assertion of his identity as well as the assaults that were made on that identity across various time periods and contexts of Rob's life.

The world of math, it is competitive. It is brutal. There is a racial hierarchy in this country [that] exists, a caste system, and when it comes to [the] smarts department—especially in mathematics—we [Black Americans] are on the bottom. That's it. I mean, that's it. Fortunately, I have a good sense of humor; otherwise, I think I'd go crazy.

—Rob,¹ 40-year-old, high-achieving African American² mathematics PhD

A number of recent research reports and policy documents in mathematics education have taken up the discourse of equitable participation in mathematics by Black students (National Research Council, 1989; National Sciences Board, 2003; RAND Mathematics Study Panel, 2003; U.S. Department of Education, 1997). Quite frequently, these students are viewed by policy makers, in a manner consistent with enlightened self-interest and interest convergence, as potential assets in helping to preserve the nation's economic standing and maintaining its international competitiveness. Yet, the positive ends of full and meaningful participation, on these externally-defined terms and even by those who rise to the highest levels of academic and professional attainment, are rarely achieved. A growing body of research (e.g., Berry, 2008; Ellington, 2006; Martin, 2000, 2006, 2007; McGee, 2009; McGee & Martin, under

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review; Spencer, 2008; Stinson, 2006, 2008; Terry, 2010) has shown that the road to mathematics success for Black students is a perilous one and those who travel it must often deal with emotional stressors at every step along the way. These stressors often stem from societal stereotypes and fundamentally racist beliefs about the competencies of Black learners, even in the most liberal and supportive environments. These stressors also invoke internal ongoing dialogues for individual Black learners, as they must decide whether it is worth traveling a path to mathematics success. They must make meaning, on their own terms, for *being Black* in the context of doing mathematics and for what counts as success.

In our view, this is one of the conundrums that arise when advocating for Black children's persistence in mathematics: promoting participation in a domain that is rife with stereotypes and overt and implicit assaults on Black identity. In our view, promoting participation in mathematics among Black learners brings with it the companion responsibility of documenting their experiences across time as they encounter questions about their ability, racist and racialized environments, and invoke their multiple forms of agency to develop their own definitions of meaningful and purposeful participation.

What Does it Mean to be a Black Male in the Context of Mathematics Learning?

In our research, we have both addressed the question- *what does it mean to be Black in the context of mathematics learning and participation?* In this paper, we narrow that question to ask- *what does it mean to be a Black male in the context of mathematics learning and participation?* Clearly, there is no singular story to be told. Moreover, there is a litany of research that problematizes the most negative aspects of societal perceptions about what it means to be a Black male in U.S. society (Anderson, 2002; Ferguson, 2000; Haddix, 2009; hooks, 2004; Gibbs, 1988; Lewis, 2003; Noguera, 2003, 2008; Staples, 2004; Watts & Jaegers, 1997). We acknowledge that data but also believe it is incomplete and represents a limited portrayal and construction of Black boys and men.

Less well-known are the stories of Black males who succeed in mathematics (Berry, 2005, 2008; Martin, 2006, 2007; McGee, 2009; Stinson, 2006; Thompson & Lewis, 2005). Their success does not make them superheroes or *different* kinds of Black men, somehow less Black or less immune to societal stressors, expectations, stereotypes, and racism. Even Black men at the highest levels of academic achievement in mathematics are still subject to the reality that, armed with a PhD in mathematics, they can still be seen as “niggers” (Martin, 2009). However, their stories do help to alter and expand the conversation on Black men and boys. The stories of Black men who have traveled far down the road of mathematics can be particularly powerful because they can reflect on their experiences and provide retrospective, first-hand understandings of what it means to endure and persist in a hostile and discriminatory field. These narratives are likely to extend well beyond the surface-level accounts that dominate research and the popular press.

The excerpt presented at the beginning of this paper comes from an interview with a Black male participant in a larger study (McGee, 2009) that was designed to explore the voices and experiences of a select group of academically successful Black college students majoring in mathematics and engineering. At the time of his initial interview, Rob was a doctoral candidate in applied mathematics, attending an urban³ university in the Midwest. Rob and his brother were raised by their mother in a neighborhood known for its liberalism and ethnic and racial diversity. However, Rob felt that, in reality, his neighborhood was characterized by racial division rather than racial diversity. He vividly remembers coming home after school and asking his mother,

“Why are all the White kids smarter than the Black kids?” Fortunately, his mother was adept and proficient in explaining to her sons the harmful ways racial stereotypes and other forms of racial discrimination impact the ways in which young Black males like themselves are perceived.

Socio-economic class issues were very visible in Rob’s childhood as his family was at the bottom of the financial spectrum in comparison to his friends and most of the families in his neighborhood. He often joked that he lived in the “hood” side of their neighborhood because his block housed one of the few mixed income apartment complexes.

By the second interview, he had received his PhD and a job offer as a tenure-tracked assistant professor with a predominately African American urban university. His academic achievement was particularly noteworthy because it made him one of only approximately 7 Black Americans in the United States to receive a PhD in applied mathematics in 2007. This low rate of representation for Blacks was not unusual. For example, during the 2004-5 academic year, of the 1,116 doctorates awarded by U.S. mathematics departments, 434 of them (39 percent) went to U.S. citizens; the majority of doctorates were awarded to foreign nationals (Mooney & Neelakantan, 2006). Of the 434 American recipients, 380 were White, one was American Indian, 21 were Asian, 14 were Black, 12 were Hispanic, 3 were Native Hawaiian or Pacific Islander and 4 of unknown racial/ethnic designation. Seven of the fourteen Black students were citizens of African nations and had received their pre-collegiate education in Africa (Mooney & Neelakantan, 2006). This stark illustration of the separate and grossly unequal levels of mathematics achievement—based in part on racial disparities—makes Rob’s story that much more powerful as an example of resilience (i.e., the ability to persevere and obtain good outcomes in the face of significant obstacles and adversity) and continued persistence.

Rob’s quote indicates that he has negotiated a delicate balance in his life. Analysis of the above excerpt and his life narrative raises important considerations regarding mathematics learning and participation among Blacks – considerations not usually raised in current math education research on Black students. These include negative and persistent race-conscious stereotypes in the journey of being perceived as mathematically capable; definitions of racial membership, including societal and self-constructions of what it means to “be Black” in the contexts of mathematics participation.

Rob’s story provides a partial outline of what it means to persist in contexts where Black males are few in number and where negative societal beliefs about their abilities and motivations endure. Rarely do we hear about successful students like Rob and not often do we hear them talk about and frame their experiences *as Blacks* in the context of mathematics.

The Mis-Education of Black Students in Mathematics Education

Over the past 30 years, many reports have explored the underachievement and limited persistence of Blacks in mathematics (Anick, Carpenter, & Smith, 1981; Fullilove & Treisman, 1990; Oakes, 1990; Oakes, Joseph, & Muir, 2001; Secada, 1992; Tate, 1997). One of the most disturbing facts about US education is that fewer than 10 percent of American children complete the sequence of high school mathematics courses – algebra, geometry, trigonometry, and pre-calculus – that are required in many other countries (Schmidt, 2003). Learning and participation in mathematics for Blacks has been consistently hampered by persistent tracking and differential access to higher-level mathematics curricula, poor access to the best-qualified teachers, and inadequate resources (Oakes, 1990), and limited opportunities to connect school mathematics to their lived realities (Martin, 2000; Martin & McGee, 2009; Moses & Cobb, 2001; Nasir & Hand,

2008; Spencer, 2009; Tate, 1994, 1995a). As a result, many Black students are turned away from mathematics and science very early in their education (Tate, 1995a, 1995b).

Conventional explanations for achievement disparities in mathematics have tended to blame the students and their parents or the lack of school and teacher resources (Ladson-Billings, 1998; Martin, 2000). Yet Black mathematics achievement is a complex and vast issue, and often, Black students end up receiving the least and the worst of what is available (Martin, 2009 Woodson, 1990).

Missing in the literature on mathematics education are stories of high-achieving Black students who have productively climbed the mathematics ladder. These stories are often overlooked in deference to analyses that focus on lower-achieving Black students. These analyses contribute to the construction of failure as normative. Moreover, many studies in the field lack historical context, because they often fail to conceptualize achievement and persistence beyond the effects of personal background or in-school factors, an approach that ignores or oversimplifies the role of larger socio-historical and structural forces (Martin, 2006, 2009).

Recently, several researchers have asserted that mathematics learning and participation can be conceptualized as racialized forms of experiences (Martin, 2006, 2007, 2009; Martin & McGee, 2009; McGee, 2009; Stinson, 2008, 2009). This perspective suggests that the meanings for race are very salient in structuring mathematical experiences and opportunities and just as relevant in shaping common-sense beliefs and official knowledge about who is competent (or not) in mathematics. So, while negative outcomes in mathematics education among Black students are incorrectly attributed to race (as biology), we argue it is the racialized nature of students' mathematical experiences that most profoundly influences these outcomes.

Yet, our research has shown that there is a lack of research within mathematics education dealing with the complexities of race and racism that produce unequal outcomes in mathematics learning and participation (Martin, 2006, 2007, 2009). A careful reading of the existing literature in mainstream mathematics education reveals a distortion of the concept of *race* and an inadequate theorizing of *racism*. Martin (2009) has noted:

Within mathematics education research and policy, both race and racism remain undertheorized in relation to mathematics learning, participation, and differential outcomes in achievement and persistence. While race is characterized in the sociological and critical theory literatures as an ideological construction with structural expressions, most studies of differential outcomes in mathematics education begin and end their analyses of race with static racial categories and group labels used for the sole purpose of disaggregating data. One consequence is a widely accepted, and largely uncontested, racial hierarchy of mathematical ability. Disparities in achievement and persistence are inadequately framed as reflecting race effects rather than as consequences of the racialized nature of students' mathematical experiences. (p. 315)

Martin further argues that this society has developed a *racial hierarchy of mathematics ability* that places White and Asians on top and Blacks, Latinos, and Native Americans squarely on the bottom (Martin, 2007, 2009). Black students, like Rob, are well aware of this hierarchy.

Since race is deeply and systemically linked to the dynamics of education and to school inequality and discrimination (i.e., opportunity to learn and teacher expectations), investigations of race, racism, and racial identity are necessary when studying Black males in mathematics. Academic achievement research for Black students, in general, has resulted in "under-theorized,

oversimplified, or inaccurate conceptualizations of race” (O’Connor, Lewis & Mueller, 2007) despite the fact that racism continues to play an integral role in all of society.

A Study of Mathematically Successful Black Students

Over the course of the 2006-2008 academic school years, as part of a dissertation study (McGee, 2009), the first author interviewed 23 high-achieving (14 males, 9 females) Black mathematics and engineering juniors, seniors, and graduate students from four Midwestern universities. High academic achievement was defined as maintaining at least a 3.0 grade point average. Cross-case analysis was performed on all 23 students (average total interview time: 86 minutes) and three (two males, one female) within-case analyses were conducted with three of the 23 students. These three focal students were chosen specifically because of the great variance in their recognition (or lack thereof) of race, class, gender, and other social determinants that have operated to constrain (or advance) the life chances of people like themselves. Rob, who we present below, was one of those students. Rob was interviewed on four different occasions, averaging about 57 minutes per interview, over a two-year period. The methods used to analyze the data on Rob and the other two participants were an augmented form of the life story interview format, and narrative analysis.

Interviews Methods

The *life story* interview approach (McAdams, 2008; McAdams, Josselson, & Lieblich, 2006) was employed, which required Rob talk in depth about various stages of his life, to enable a better understanding of how race, racial identity, and resiliency have shaped his educational and social experiences over time. McAdams et al. (2001) defines life story as “an individual’s internalized narrative rendering of his or her life in time, entailing the reconstructed past, perceived present, and anticipated future” (p. 475). McAdams (2008) asserts that people provide their lives with unity and purpose by constructing internalized and evolving narratives of the self. The story is the best available structure that persons have for integrating and making sense of life in time. Life stories function to establish identity as opposed to establishing traits, motives, values, etc. (McAdams, 2008).

The idea that identity is a life story resonates with a number of important themes in developmental, cognitive, personality, and cultural psychology research. This internalized evolving story allows individuals to reconstruct the past, perceive the present, and anticipate the future. Those interviewed were involved in reconstructing their stories, which may have been embellished, altered, etc. Therefore, the *life story* interviews serve as a representation of the truth; yet go considerably beyond the facts by constructing stories that make sense to them as the respondents make sense of the world (McAdams, Reynolds, Lewis, Patten, & Bowman, 2001; White, 2007).

The interview protocol consisted of a combination of semi-structured, open-ended questions and an initial two-page demographic questionnaire. These questions were designed to elicit rich accounts of Robs’ experiences in his home, school, neighborhood, and mathematics classroom contexts. Additionally, this study explored his emerging identities—racial, mathematics, gender, and otherwise—and the interconnections and co-constructions of these identities that helped to form the individual and collective senses of *being Black* (Martin, 2006b; Spencer, 2009). Measures were taken to increase the internal reliability of the interview data,

such as asking more than one question about a particular construct, which additionally allowed observation of any inconsistencies in responses.

A narrative analysis methodology was ideal to best understand Rob's mathematics experiences as one part of a holistic in-depth investigation of his life. Narrative analysis examines a chronologically told story, with a focus on how elements are sequenced, how the past shapes perceptions of the present, how the present shapes perceptions of the past, and how both shape perceptions of the future (Reissman, 1993). Narrative analysis is seen as a more in-depth alternative to survey research. Some advocates see it as an "empowering" social science methodology, insofar as it gives respondents the venue to articulate their own viewpoints and evaluative standards (Elliot, 2005). The use of narrative analysis as a research methodology has grown in recent years because of the growing diversity among educational researchers and the inability of traditional data sources to answer important questions related to race and educational inequities (Stake, 2003; Yin, 1994).

Rob's narrative life story was analyzed for recurring patterns and themes⁴. These themes were based on our considerations of identity but left room for the emergence of new themes. Contextual analysis was also incorporated a given that the focus of Rob's narrative varied by social context (home, school, socio-economic status, etc.) and across time periods in his life. We also explored and unpacked his resilience for the presence of risk and *protective* factors. To do so, we drew on Spencer's Phenomenological Variant of Ecological Systems Theory (PVEST) framework (Spencer, 1995, 2006; Spencer, Dupree, & Hartmann, 1997).

In our view, this collection of methods best aided our efforts to understand Rob's identity development, both as a Black male and as a doer of mathematics. The questions that guided our analysis of Rob's narrative included the following:

- (1) What strategies did Rob use to demonstrate his resilience in mathematics over his academic career?
- (2) What personal meanings did Rob assign to his resilience and persistence in mathematics?
- (3) How did Rob negotiate what it means to *be Black* in the context of studying mathematics?
- (4) To what extent did Rob characterize and respond to learning and participation in mathematics as racialized forms of experience?

We focused on these initial questions as a way to provide insight into themes that we view as critical in academic and mathematics success for Black students: (a) *resilience* and how resilience is developed and framed, (b) perceptions of opportunities and constraints in various mathematics-based contexts, (c) strategies used by Rob to negotiate successful participation in mathematics, and (d) the salience of racism in one's mathematical experiences, including the ways in which one interprets and responds to stereotypes about Blacks and mathematics (Berry, 2005, 2008; Martin, 2009; Moody, 2003; Stinson, 2006; Tate, 1994, 1995a, 1995b).

Case Study of a Mathematically Successful Black Male

Below, we offer a profile of Rob. He is a handsome man, with curly Black hair, a stocky, fairly short build and dark skin that looks permanently tanned. His interviews were some of the most memorable in the larger study, due to a combination of satirical humor and cynicism with a hint of optimism. Rob spoke of a powerful inner strength that originated with his mother and that

was subsequently adopted by Rob and his younger brother. Forty years old at the time of the study, Rob brought to his interview not only a plethora of mathematics learning experiences but also a great deal of mathematics teaching experiences. He has taught at several private and public city high schools and summer engineering mentoring programs at several urban university campuses, and has held adjunct faculty positions at both the community college and university levels. Rob also made the connections between mathematics as an area of study and the larger relations of unequal economic, political, and cultural power. Rob would best be described as a *racial realist* because he looks at racism both realistically and critically (Bell, 1994).

During his interviews, Rob spoke frankly and boldly of the experiences that Black males face, which makes his story of special interest. Rob had successfully negotiated many academic, political, and social obstacles toward obtaining a bachelor's, master's, and eventually a PhD in mathematics. As an adult student, Rob story challenges and contests conventional wisdom and explanations for Black student success and failure in mathematics education. Although Black group membership and frequent marginalization often carries an extra source of risk, Rob equated his Blackness with academic empowerment. For his PhD, Rob attended Soho University, which is located on the south side of a large urban Midwestern city, and houses a large international population, catering to science, technology, engineering and mathematics (STEM) students.

Rob's Early Years

Rob's mother, Candace, raised her two sons on a single income, enduring economic hardships not uncommon in many urban, Black households. Interestingly, Rob's neighborhood was considered one of the most ethnically diverse in the United States at the time of his childhood, due to the presence of students who attended a prestigious university within his community. In spite of his childhood circumstances, Rob said he benefited from an inner confidence instilled in him by his mother; and now he has reached one of the pinnacles of mathematics learning.

Rob's mother, who he describes as "well-educated and pro-Black," provided a strong foundation for the educational achievement of her children. Candace sacrificed expensive clothes and toys for "books, books, and more books." This was her no-frills plan for the success she envisioned for her sons. She was undeterred by her social and economic status. Rob recalls that his mother's dream was to "have kids and get them to be as middle class as possible":

My mother laid down the law—was very strict. My parents were divorced, and my mom let me know from day one that we were poor and the only thing that we had going for us—I'm sorry—was our smarts and that we better get smart fast... My mom was all about education. I don't mean that in the same way that other parents say they are about education but they don't spend any money on it. My mom said no to everything but books. So I was wearing raggedy-ass clothes but had lots of books.

Rob credits his mother with providing "enormous support for [his] intellectual needs" and he, in turn, wanted to make his mom happy and proud of his academic accomplishments. Rob achieved throughout his school career, and although his mother has since passed away, Rob continues to be driven by her expectations.

All too often, single Black mothers and extended Black communities are considered culprits in the underachievement of Black students and are assumed to have little interest in

Black children's education, especially if they are not involved in traditional school activities. Rob's family experience counters this masternarrative by demonstrating how Black single mothers can, indeed, have positive and longlasting effects on their children's academic achievement (Sanders, 1997).

When Growing Up Black... Your Neighborhood Matters

Rob considered his elementary and high school education to be very privileged because of the schools' close proximity to a large, prestigious university, which we will call University of First Class. Rob discussed how his neighborhood could be characterized by the presence of both protective factors and risks factors. Rob's middle to upper-middle class neighborhood offered him a great deal of benefit for jumpstarting his mathematics career. A neighboring condominium complex contained a number of University of First Class scientists and mathematicians who were more than willing to satisfy Rob's intellectual curiosities. Although Rob felt like a cross between a "charity case" and a "pet project," he decided to soak up the knowledge anyway. Rob also attended school with the children of the university's faculty. He described his elementary school teachers as excellent, except for a couple of teachers whom he described as racist because he believed they attempted to sabotage his mathematics development.

The biggest risk factor, according to Rob, was being "upper lower class," which he defined as being of lower income in an upper middle class neighborhood. Rob became aware from a very early age that his family faced economic circumstances and disadvantages that most of his friends and classmates did not. Rob remembers his friends having much larger residences, and he and his brother often made excuses for why, after school, his friends could not come over and visit his own home. Rob's early schooling years also left him with the feeling that the Black students were not as smart as their high SES White counterparts.

Rob Interprets Mathematics Learning and Participation as a Racialized Forms of Experience

Although many of Rob's elementary and high school teachers encouraged his interests in mathematics, his positive memories are overshadowed by his experiences with a seventh-grade mathematics teacher, Mrs. Score, who he described as a racist:

Okay, growing up privileged in the book department, I had lots of books. In particular I had a Russian series of books on physics. And I [took] this book [to] school, and Mrs. Score accused me of stealing it. And I was just like, "What? My cousin gave this to me," which was the case...And, yeah, I was like, "Oh, my God. You can't possibly imagine that a Black kid would have this book."

The persistent threat of being devalued by Mrs. Score and others like her initially proved to be psychologically damaging for Rob (Crocker, Major & Steele, 1998; Tajfel & Turner, 1986). However, these feelings progressively transformed from anger to revenge. Instead of abandoning his ambitions, Rob was able to use these racial devaluations and negative racial stereotypes as extra motivation to excel in mathematics (McGee & Martin, under review).

For example, a particularly painful episode in Mrs. Score's classroom—during an in-class mathematics competition called Equations—crystallized for Rob that mathematics would always be a fundamental part of his life. The game's set-up, while simple enough—groups of students, seated together at tables, solving mathematics problems—was rife with opportunity for

Mrs. Score to make plain her own biases and she did not disappoint. Mrs. Score designated which students sat at each of the tables numbered 1 through 5 (Table 1 being labeled the smartest group and Table 5, the least smart) based on her perceptions of her students' mathematical capacities. Rob recalled that not a single Black student sat at Table 1 even though the class was over 50 percent Black. Instead, that prime position was occupied by two White male students and one Korean student. Rob was placed at Table 2, a true sign of disrespect in his eyes, because the two White students were "totally overrated." And the stakes were high; the top two teams from Mrs. Score's mathematics class would go on to participate in a regional Midwestern mathematics competition.

Although many years later, Rob relishes telling the tale of how he manipulated the White students in the mathematics competition by exploiting their perception that his being Black made him mathematically inferior: he transformed his competitors' preconceived notions of Blacks and mathematics into a leg up for himself.

I didn't lose one single game. I understood two things: one, that I was smarter than these kids 'cause I'd been reading the algebra books by myself; two, I understood that they would assume that I was stupid. And so I just played dumb. Basically the whole day I overpowered them with the math. And then [my competitors] would come over and say, "Judge, you know, we don't know how to do that." And [the judges] would be like, "Don't feel bad. He [has been] doing that all night long." Or sometimes, I would just play stupid and then let them go ahead and build a stupid solution and then go, "You all shouldn't have disrespected a brother thinkin' I didn't know that." It was like, well, they're fools for thinking I was stupid—too bad for them.

It was clear, given his mathematical abilities, that Rob could have beaten his competition with ease; yet the strategy of acting as though he did not understand a concept in order to dupe his competitors into believing he was mathematically inferior, actually diminished the sweetness of his victory. He acknowledges that this was a powerful impetus in his decision to pursue mathematics as a career. Rob exploited the racial stereotypes to his advantage but not without disgust over the stereotypes being so influential that he was able to get away with "acting Black and dumb." Rob performed "acting Black and dumb", as he described it, by scratching his head, staring "buckeyed," and pretending to look at his White teammates work for the answers. Although Rob is now about 30 years older and one of just seven black Americans to receive a PhD in the year he graduated, he was still disturbed by the fact that he could successfully use the racial stereotypes to win. According to him, the experience still "sticks in my craw."

Moreover, this period generated in Rob a "proving-them-wrong" agency (Moore, Madison-Colmore, & Smith, 2003) that allowed him to succeed in the face of stereotypes that devalue the intelligence of Black students with respect to mathematics learning:

Two things came out: one, I was a boy, so I was competitive; and two, I understood the racial dynamic. I actually became very aware from an early age that math was an intimidating subject and that I better get good at it because if you're good at math, people will assume you're smart. And that's all I wanted to be, assumed as smart. And I also understood that I was from a group that really wasn't representing in that department. So, you know, by the way, I can dance. I was tremendously fast, huge leg muscles, you know. So I'm down with being Black. I like all that stuff, okay? But I was really determined to prove my intellectual value.

Rob readily acknowledged that the peculiar and sometimes troubling nature of his mathematical experiences were predicated on the fact that he is Black and that society attaches a negative stigma to Blacks' abilities to perform in mathematics. Of all the subjects comprising school curricula, mathematics is one that is consistently identified as representing the height of academic work: requiring the most intelligence, having the most hierarchical knowledge structure (i.e. to study more advanced topics successfully, one must master all previous topics), and being most useful for distinguishing those who are deemed intellectually gifted from those who are not (Martin, 2009). Rob suggests that stereotypes about Black educational achievement are natural to a societal culture that values racial hierarchies:

So in American culture, the whole culture sends a signal that Black people can't do math, and the school system is structured in a way that, if you're a little Black kid, the teachers who tend to care about you, I'll say the first seventeen years of your life, are not always so great. So this is, of course, the problem.

One consequence of Rob negotiating his identity as a gifted mathematics student is that he has become particularly adept at employing humor and satire to reject racism and guard against racial stereotypes:

Stereotypes, they're a real time-saver. And you know the *Onion* [a satirical magazine] goes through the humor gets to some truth. That's probably why we are all stereotyped. And when people say, "I'm not racist," or "I don't stereotype," they're either stupid or full of shit—of course they do. The problem is some people's stereotyping algorithms are extremely unsophisticated, which is to say they look at me and say "He's Indian. He's fine." And then they look at someone who [they believe looks more] Black. They lookin' at me and, "Whoa—he's a threat, okay?" You know. [But] the brother [who they disregard] may have a PhD from University of First Class. And you will hear stories about [how] Black students at University of First Class always felt like they were mistrusted, you know. They would walk past a car, [the car lock goes] click, you know, that kind of thing.

Rob's wit serves as a vehicle for the assertion of a satirically funny yet realistic view of race relations. Being extremely well read, he often incorporated humorous, racialized perspectives from a variety of sources—media, educators, sociologists, psychologists, and their critics—to make light of the dynamics of race. His humor can be traced to a broader phenomenon: Black speakers and comics celebrating their identity by telling jokes in which race and racism are highlighted, revealed, and exposed (Fulton, 2004).

Rob's College Experiences

While Rob's early experiences with mathematics had sparked and fueled in him a high degree of confidence, his college attendance at the Science Institute of Technology (Science Tech) ushered in a jarring and unexpected period of self-doubt. Rob's high ACT scores and high mathematics GPA earned him a college scholarship to attend the prestigious Science Tech University, located on the West Coast. And although he had just graduated from what he considered a pretty racially diverse high school, Science Tech's racial dynamics (both on and off campus) rendered him one of only a handful of Black students. Rob immediately felt out of place. While he excelled in mathematics, his science courses were harder than he anticipated.

Rob's experiences at Science Tech invoked in him high levels of self-doubt, an emotion that he had not experienced since his early childhood. During his interview, Rob admitted to lapsing into laziness in most of the science classes, and as a result, his grades suffered. His self-esteem slipped too, causing him to question his admission to Science Tech. Was he simply an "affirmative action case"? Rob described this as the only time in his adult life that he seriously doubted his educational and intellectual abilities:

[At the time I thought] I probably got in because of affirmative action. I had fantastic scores in math; I took math at the University of First Class when I was in high school. I mean, I'm not kidding, you know. That's how good I was at math. That's all I do. And yet I was pretty lazy at everything else and not particularly prepared. So that was the first time I doubted myself. And I began to realize, "Well, I didn't get in here because I was smart." And of course I did. Of course.

Rob—like just about every other college student in the larger study—described bouts of self-doubt which stemmed from his suspicion that affirmative action policies had provided him with a "handout" (Blanchett, Mumford, & Beachum, 2005).

I dropped out of Science Tech. I was a smart boy, but I felt out of place. And I wasn't prepared in anything other than mathematics. I mean, my math scores were off the hook, and, I mean, clearly I was a talented young man. This is first time I doubted myself. And I really thought that I got in because of affirmation action. This experience of self-doubt revolved around race. And I said to myself, "This is very depressing."

In order to preserve his racial self-esteem, he dropped out of Science Tech and moved back to the safe haven of his childhood neighborhood, taking an entire year off from school and, as he described it, "wander[ing] around." He has no regrets about leaving Science Tech because that year was critical to rebuilding his racial self-esteem. Rob eventually received three master's degrees—one in mathematics, one in computer science, and the other in teaching mathematics—as well as his PhD in applied mathematics.

Development of Rob's Gendered Identity

The particular constraints unique to Black male youth—distinct even from those affecting Black women—are also of critical importance to Rob. He feels that the differential treatment that Black males experience often leaves them resentful of White institutions where success is predicated on assimilation. Negative experiences in these contexts can contribute to many Black males viewing school as a hostile environment and feeling frustrated in their academic efforts, regardless of whether they disengage or achieve in school. According to Rob, teachers' fear and prejudice limit the potential for Black males to get the educational assistance they need in order to succeed in the classroom. According to Rob, "The teacher can't teach somebody she is afraid of." Rob explained that, instead of receiving a true and meaningful education, many young Black men are more likely to face detention and other forms of punishment.

Rob understood the very real and acute pressure many Black males face—particularly through commercialized rap and sports—to define themselves through materialism. He even admitted to briefly going through that phase himself, shortly after starting his first "real" job. Now, rather than basing his self-concept on material possessions, Rob defines himself by his

own personal criteria, developed in part as a result of his mother's principles and influence. Rob puts his money and personal assets toward intellectual development and not "stuff that makes people feel good about not knowing and not doing."

Rob dismisses the notion of *Afrocentricity* (defined in the literature as a means of putting Africa at the center of one's being and world view) (Asante, 1991). However, he notes the relationship between many Black males searching for their identity through "getting more stuff" and having a strong Black identification. For Rob, cowrie shells, mud cloth, and an HBCU University sweatshirt do not represent an Afrocentric identity or worldview. Calling oneself "Blacker" and "better" than the next person who does not have these accoutrements portrays a false sense of being Black:

We are all essentially taught to define ourselves by what we consume, right? The culture first defines who you are and tells you to buy this. So when most people think "I'm going to embrace Afrocentric values," they are unfortunately not thinking about reading certain books.

Although Rob dismissed the idea that overt displays of Afrocentricity are a valid way of "proving your Blackness," he seemed conflicted about how his culture has been defined. Rob vehemently insisted that Whites believe that the role of their culture is to provide the "cultural rubric" for all people—especially African Americans. As a result, Rob believes that Whites maintain a sense of entitlement for most social opportunities, such as quality educational institutions and "cushy" jobs, and a disproportionate opportunity to accumulate wealth.

Rob is, by his own admission, "damn proud" of himself and his many accomplishments in mathematics and, for the most part, always has been. Although Black males are often associated with phenomena that would stifle pride (e.g., juvenile delinquency, anti-productive environments and distressed communities, criminality, drug and alcohol abuse), Rob declared that his self-love and confidence cannot be stifled. For example:

I grew up next to this Chinese family and [when] we were, like kids and [the Chinese father] once said to me, "Yeah, you're arrogant; you [all] think you're better than everybody." I was probably seven when I replied, "That's 'cause we are" [laughing proudly] which just made the guy madder.

While Rob recognizes that some people view his pride as arrogance, he is determined not to allow their perceptions to infringe on his "right to brag." Rob feels that it is not only his right but his responsibility to show people, particularly teachers and his peers, exactly how smart he is.

Rob's Complex Racial Identity

Rob feels both protection and risk from being identified as "sometimes Black, sometimes Indian, sometimes, Hispanic, and sometimes just Other." On the protective side, Rob feels that at a subconscious level he may have been able to navigate "White spaces" more easily than other Blacks because his father is White, although phenotypically Rob's skin tone is dark brown. On the risk side, because so many people mistake him for being non-Black (but not White), they have said things to him demonstrating the true nature of their racism and belief in racial stereotypes. Rob expresses his belief that race and racism are so entrenched in the American psyche that he is pessimistic about there being any significant change against racist practices.

Yet, as a result of hearing “what people really think about Blacks,” he has developed quite a sophisticated arsenal that protects him from personally becoming incapacitated by racism.

Rob’s Future Aspirations

Rob’s desire to increase the mathematical literacy of African Americans is a major driving force behind his aspirations for the future. Years spent teaching at a number of educational institutions have served as both a source of personal strength and a perch from which to witness how racism works to deprive Black and Brown students of educational equity. Rob believes that his greatest good as a teacher is to teach and inspire Black students to become mathematicians. His dream—one he had almost given up on—is to create a winning all-Black math team:

Being good in mathematics is like—being an athlete, an Olympic athlete. You have to train. But you can’t train without good trainers. And even the best swim coach can’t teach his students how to swim without access to a pool. My goal was to create an all-Black math team. That’s all it was. Just like [the one] I had—minus the White kids.

Although he has taught at very prestigious suburban schools, Rob found they were missing one important element that drives his teaching pedagogy: Black students. His excitement and zest for teaching does not come from the pay or the decent hours, but from the sense of responsibility he feels for educating underserved Black youth. With this as his motivation, Rob has sought out mathematics teaching experiences that would have the greatest impact in educating Black youth. Rob explained that he feels most inspired when he is teaching mathematics to Black youth:

For an educator who wishes to have somewhat of a high-end math impact, I really think they should teach in an all-Black institution, okay? And I hit upon this solution as my initial solution, which was when I did my student teaching at [an all-Black high school institution], all Blacks—so none of that “it’s a White thing; it’s an Asian thing to do math,” and I was very happy with the results. And in fact [before that particular teaching experience], I really wasn’t that excited about being a professor anymore; I was just getting this PhD just to get [it]. And it’s, like, math, and I’m excited about math. But in the back of my mind, I’m always just like, “The reverend says, ‘If not me, who? If not now, when?’” you know? Someone’s got to do this, and I think I’m prepared to do it.

Rob is so adamant about teaching mathematics to Black students because he knows he can inspire a drastic shift in how some of these students picture success by introducing a perspective and an example radically different from what many of them are used to seeing or hearing about. He believes that developing successful Black mathematics students requires exposure to successful Black mathematics teachers like himself who care about the education of Black students:

So I’d hate to say it, sadly, but what you need is a visible success. A visible success with a group of young Black students beating other students, preferably not Black, you see what I’m saying? It’s that simple, right? And it’s not ‘cause I don’t like the other students, it’s just a means to an end. In fact, most of my career—I’ve been educating non-Black students most of my career, in spite of my efforts to do the

opposite 'cause the reality is there are very few efforts to mathematically educate Black students.

Rob's teaching experiences have both saddened him and given him encouragement. He has endured the heartache of encountering adult-age Black and Latinos who have come to his classroom and could not multiply double digit numbers. Rob recognizes that "somewhere in the mathematics pipeline, someone's have failed to educate these students." Rob was somewhat puzzled as to what to do with these students. As a result, Rob briefly left his inner-city college job to teach in a wealthy White neighborhood. Almost immediately, Rob realized that he could not forego his true passion. So to protect his vision, Rob left his high-salary teaching position and White suburban environment to teach at an all-male, predominately African American high school. Rob discusses his reasons for leaving the mostly white school:

This was actually a very good school, I was actually making a very good salary and in fact, I even liked it. But I would of had to literally sublimate myself in order to be happy in the long run. There was a constant nagging thing that "nope, what the fuck are you doing here?" But actually again, I liked it. Teaching rich White kids who are trained to soak up whatever you tell them, it's easy and it's fun, okay? You know? Don't kid yourself there. I knew I just didn't belong.

Rob not only understood the racial dynamic of his experiences but also recognized the salience of racism in mathematics throughout his academic trajectory. Rob's story offers a poignant and tough commentary on the racial ideology disseminated in society about Blacks and mathematics. His experiences speak frankly and boldly about racism, which makes his story of special value in confronting racism, and the experiences that Black male mathematics students in America endure.

Discussion

Rob's story reveals the public and private forms of resistance, resilience, persistence, struggle, and the occasional accommodation that he negotiated to achieve his personal success in mathematics. Rob's story reminds us, as researchers, that "being a successful Black male in mathematics" is complex. Rob's story highlights some of the personal and social factors that may be crucial to understanding the experiences of other high-achieving Black male mathematics students.

Rob's story exposed the challenges associated with a being Black male, such as daily experiences of race-based discriminatory behavior from teachers, peers, and educational institutions. Rob demonstrates the agency and ability to protect himself, which helped nurture his mathematical and school/college resilience. The findings of this study also reveal that resilience is not just a set of factors outside of Rob's control (e.g., caring and supportive teachers, extracurricular activities, safe school environment, etc.), but are developed in concert with his identity (e.g., self-confidence, realistic self-assessment, awareness of racism, the use of humor, etc.).

Rob concluded that being a Black man actually helped him interpret the salience of racial and gender factors in the process of achieving in mathematics. Rob conveyed that race and gender, and the meanings and social significance assigned to them, profoundly shape social opportunity and mobility in the United States for Black males. However, Rob sees himself as a

change agent, expressing strong personal agency and a strong masculine identity. He expressed the inherent, particular desire to effect change in African American youth. Rob has defined his “success” in ways that affirm his racial and gender identities as a Black male.

In an era in which *being a Black male* continues to be devalued by the larger society and many of its institutions, research on the stories and experiences of successful Black males is crucial. Despite portrayals to the contrary, many African American male learners, like Rob, possess an achievement philosophy that includes a commitment to both individual and collective mobility, and their stories deserve to be heard and understood. Not just being content on promoting success as an outcome, we argue for more studies documenting the emotional and psychological journeys these students take on the path to mathematics success.

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Endnotes

1. All personal identifying information has been replaced by pseudonyms.
2. Although we are using the terms *Black* and *African American* interchangeably in this study, we are cognizant of the nuances in racial and ethnic identity that exist due to the variables of nationality and culture.
3. We recognize that *urban* is a complex term often used as a way to code, signify, and stigmatize particular groups and social contexts. Our intended purpose is to unpack the term as scholars and pay attention to how individuals in the study perceive and define the term.
4. Additional details on codes and coding scheme for the interviews in the study can be found in McGee (2009).

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