

- Smrekar, C. & Mawhinney, H. (1999). Integrated Services: Challenges in Linking Schools, Families, and Communities. In J. Murphy & K. Louis, Eds., *Handbook of Research on Educational Administration* (2nd Ed. pp. 443–61). San Francisco, CA: Jossey Bass Publishers.
- Stallings, J. (1995). Ensuring Teaching and Learning in the 21st Century. *Educational Researcher*, 24(6), 4–8.
- Swanson, C. B. (2004). *Who Graduates? Who Doesn't? A Statistical Portrait of Public High School graduation, class of 2001*. Washington, DC: The Urban Institute.
- Tavernise (2011, September 14). Soaring poverty casts spotlight on lost decade. *New York Times*, p. A1.
- Taylor, L. & Adelman, H., (2000). Connecting School, Families, and Communities. *Professional School Counseling*, 3(5), 298–308.
- Teddlie, C. & Reynolds, D. (2000). *The international handbook of school effectiveness Research*. London: Falmer Press.
- U.S. Bureau of the Census. (2010). *Income, Poverty, and Health Insurance Coverage in the US: 2009*. Washington, DC: Author. Retrieved February 23, 2010 from <http://www.census.gov/prod/2010/pubs/p60-238.pdf>
- U.S. Department of Health and Human Services. (2009). *Computations for the 2009 Annual Update of the HHS Poverty Guidelines*. Retrieved June 19, 2010, from <http://aspe.hhs.gov/poverty/09poverty.computations.shtml>.
- Vulliamy, G. & Webb, R. (2003). Supporting disaffected pupils: Perspectives from the pupils, their parents and their teachers. *Educational Research*, 45(5), 275–86.
- Warren, S., Apostolov, A., Broughton, K., Evans, R., MacNab, N., & Smith, P. (2006). Emergent Family Support Practices in a Context of Policy Churn: An Example from the Children's Fund. *Child Care in Practice*, 12(4), 331–46.
- Weiss, H., Kreider, H., Lopez, M., & Chatman, C. (2005). *Preparing educators to involve families*. Thousand Oaks, CA: Sage.
- Weist, M., Goldstein, A., Morris, L., & Bryant, T. (2003). Integrating Expanded School Mental Health Programs and School-Based Health Centers. *Psychology in the Schools*, 40, 3, 297–308.
- Wilson W. J. (1987). *The Truly Disadvantaged: The Inner-City, the Underclass, and Public Policy*. Chicago: Chicago Press.
- Zetlin, A., Ramos, C., & Chee, A. (2001). Two Case Studies of Community Schools Serving Latino and Southeast Asian Children. *Journal of Child and Family Studies*, 10(1), 23.

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# 13

## The Development of Coping Skills for Science, Technology, Engineering, and Mathematics Students

### Transitioning from Minority to Majority Environments

*Ebony McGee and Margaret Beale Spencer*

I did not experience racism until I got to college.

—Tiffany, Black<sup>1</sup> high-achieving electrical engineering college senior

When twenty-three high-achieving African American mathematics and engineering college students discussed their racialized experiences in education, their reflections varied. The differences were dependent upon a number of factors including the racial compositions of their neighborhoods of origin. In particular, for the fourteen students who were raised in neighborhoods characterized as racially/ethnically diverse, they recalled memories at a very young age of racial hierarchal divisions (e.g., “Mommy, why are the Black kids dumb and all the White kids smart?” “I realized from a very early age that Blacks were on the bottom.”). For the three students who were raised in predominantly White neighborhoods and school settings, issues of race were disguised in ways that positioned these students as anomalies of their race. For example, a comment from Valerie’s sixth grade teacher was, “Most Black people do not even try to succeed but, Valerie, you are different.” However, overwhelmingly, the six students who characterized their neighborhoods as either all or predominantly Black and attended college at PWIs voiced a sentiment similar to Tiffany’s statement indicated at the beginning of this chapter.

This study examines the experiences of six high-achieving Black mathematics and engineering college junior and senior students who were raised in predominantly Black urban neighborhoods and attended college at PWIs, who shared related stories around the *newness* of racialized experiences in college. It is critical to acknowledge that these six students were not oblivious of the traditionally negative consequences and untoward perspectives associated with living in Black underserved urban neighborhoods, (e.g., dilapidated afterschool and sports facilities, *food deserts*, inadequate

access to quality health care, lack of employment opportunity, small business owners of different race and ethnicity from the residents of their neighborhoods, etc.). Importantly, these students had very limited encounters with people and places outside of their neighborhoods. These youth had experiences that brought them into contact with individuals outside of their unique racial group (i.e., mostly teachers and business owners). The noted teachers and business owners worked and interacted daily with majority Black populations; nevertheless, given inference making processes, students reported and offer familiar racialized narrative ("The teachers are afraid of us or don't care and the store owners think we are all thieves"). College provided these students their first opportunities to be in places and spaces that are predominantly White. Thus, young people were left to deal with the "newness" or new forms of race and racism that their PWI colleges frequently presented.

The six students in this study challenged the assumptions that the racial and social class dynamics found within Black neighborhoods produce negative social and educational realities, and contended that they drew on the strengths of their neighborhoods. They also indicated how their neighborhoods were deterministic of their current academic achievement, history of high performance, and future STEM career goals.

### THE VARIETY WITHIN BLACK NEIGHBORHOODS

Although too *infrequently* acknowledged as such, there is great variance among neighbors residing within Black neighborhoods. Further, there is no meta-story that adequately describes the trajectory of Black families in these neighborhoods; in fact, these environs have been indicted as a *natural* starting point of Black underachievement (Chiricos, McEntire, & Gertz, 2001; Duncan & Brooks-Gunn, 1997; Eschholz, Chiricos, & Gertz, 2003). The typical description of a Black urban neighborhood contains these characteristics: disproportionate levels of welfare mothers (including teenagers), low birth weights, high concentrations of poverty, unemployment, and crime; and decreased cognitive ability, to name a few (Harding, 2003; Gilens, 1996; Jencks & Phillips, 1998; Massey & Denton, 1993; McWhorter, 2000; Weinger, 1998). As a pattern, such communities are viewed in terms of their assumed deficits and risks while their strengths as sources of support are ignored. Stated differently, like their residents, such communities are referred to as *vulnerable* or "at risk" settings media-hyped only for their risks and challenges and devoid of strengths.

However, in fact, *all humans* (and similarly myriad contexts) are vulnerable since the term actually refers to the presence both of risks (i.e., challenges) and protective factors (i.e., sources of support) (Spencer, 2006; 2008). The continuing and narrow characterization of minority communities in such stereotypic ways, in fact, communicates more about the continuing problem of American racism than a culturally knowledgeable, sensitive appraisal, and insightful understanding of Black culture

and its history of resistance and evident support of these students and many others in their communities of origin. Unacknowledged stereotyping occurs when residents and their communities are seen pejoratively relative to coping patterns in response to the continuing problem of American racism manifest in a national context hyping the reality of an American identity (Spencer et al., 2011). Resilient outcomes, itinerant strengths and protective factors are rarely considered as emanating from such settings. In fact, a vivid and telling cultural and social description of the Black urban neighborhood was presented by President Barack Obama in Philadelphia, giving a speech in reaction to the Reverend Wright controversy entitled *A More Perfect Union* (nicknamed the race speech):

And the lack of basic services in so many urban black neighborhoods—parks for kids to play in, police walking the beat, regular garbage pick-up and building code enforcement—all helped create a cycle of violence, blight and neglect that continue to haunt us. (Obama, 2008, p. 5)

Those studying the achievement of students living or who have lived in these environments provide these same predictable measures to show how increased dropout rates and general school failure are normalized. Theories defining neighborhoods as "poor," "urban," "inner-city," isolated and culturally deviant from mainstream society, suggest that these neighborhoods operate via a "ghetto culture" that is pre-determined and coded (Massey & Denton, 1993; Ogbu, 1986, 2004; Wilson, 1996, 2004). The "ghetto" is normatively positioned as anti-education, pro-violence, pro-economic deficiency, and pro-immoral behaviors. However, critical research challenges these limited perspectives and highlights the longstanding struggle for economic and social justice, and the education that arises from within families hailing from Black communities (Anderson, 1995; Hill, 2003; Perry, Steele, & Hillard, 2003).

An important but seldom discussed consequence of early Black neighborhood studies was the dominance within the genre of White researchers and policy-makers (Banfield, 1970; Moynihan, 1965). These assumptions have continued to be validated and reified by a preponderance of perceptions and perspectives reproduced by White mainstream ideologues. Many conceptualizations of neighborhood factors, both protective and risk, are influenced by White middle class standards, standards that are driven by socio-economic class and other researcher-driven criteria (Pattillo, 2008). In other words, a neighborhood's often suggested protective factors (e.g., two-parent household, generational wealth) or presumed risk factors (e.g., all Black neighborhood, single-parent household, welfare recipient, social security income) is typically defined as such by the researcher, usually at the outset of the study, and then "verified" by the research participants with the support of existing literature. On the other hand, it has been generally established in resilience literature that family-related protective factors lessen the likelihood of negative consequences and increase the probability of positive outcomes despite exposure to risk in these neighborhoods (Spencer, Dupree, Tinsley, McGee, Hall, Fegley, & Gross, 2011). However, in describing Black neighborhoods, accurately identifying the protective factors has been

problematic, even when income (but not necessarily wealth) is in ranges similar to that of White families (Gilens, 1996; Hertz, 2005).

Emerging interdisciplinary research has challenged simplistic notions of Black “urban” neighborhoods, detailing findings that speak to the vibrance, communal spirit, and protective nature of African American neighborhoods and communities and has uncovered the complexities that exist within them. Harding, Gennetian, Winship, Sanbonmatsu, and Kling (2010) suggest that the same neighborhood might offer different “doses” of support and risk due to the heterogeneity that exists within them. They call this phenomenon *effect heterogeneity*—neighborhood effects of different direction or magnitude for different youth. Morenoff, Sampson, and Raudenbush (2001) argue that it is difficult to disentangle the effects of neighborhood racial composition from other indicators of neighborhood challenges. Others argue that the extreme disadvantages found in some low SES Black neighborhoods are not experienced in White disadvantaged neighborhoods, thereby complicating the landscape of neighborhood effects on Black youths’ educational outcomes (Massey, 2007). Thus, understanding how students from Black neighborhoods characterize their experiences and make sense of their transitions to PWIs may prove helpful in offering a lived narrative of life in Black neighborhoods. It is for this reason that the current research makes use of a particular theoretical stance (i.e., phenomenological variant of ecological systems theory, PVEST). Although too infrequently incorporated into one’s conceptual stance, the perspective adopted here recognizes that one’s meaning making process or phenomenology matters. Since these students are academically successful in STEM fields, the content of their stories and shared meaning making processes may provide detail regarding the myriad factors involved in supporting and sustaining the high-achieving students who reside within these neighborhoods.

### Low-Income<sup>2</sup> African American Students and STEM

There is a common narrative when it comes to education and educational opportunities of low-income students. Over 60 percent of Black and Hispanic children are low-income. In 2007, 34 percent of Black children under age 18 lived in poverty, compared with 10 percent of White children and 27 percent of Hispanic children (Aud, Fox & KewalRamani, 2010). Low-income students face multiple, overlapping challenges including insufficient academic preparation in K-12, lack of family and community social cultural capital to navigate the postsecondary education paradigm, limited financial resources, and misconceptions about financial aid to name a few. The rigorous math and science curriculum that is typically required for STEM college enrollment is more likely to be gained by students from middle- and upper-income backgrounds (National Research Council, 2011; U.S. Department of Education, 2008).

For low-income students, college degree completion rates have only increased from 6 to 12 percent between 1970 and 2005, according to a national study (Engle & O’Brien, 2007). Twenty-four percent of the post-secondary populations are

low-income and or first-generation students (approximately 4.5 million students) (National Center for Education Statistics, 2006). In comparison, degree completion rates for high-income students rose from 40 to 73 percent over the same period. This means that high-income students are, in effect, six times more likely to complete a four-year degree (Engle & O’Brien, 2007). After six years, only 11 percent of low-income, first-generation students had earned bachelor’s degrees compared to 55 percent of their middle- and high-income peers (National Center for Education Statistics, 2006).

In the STEM fields, low-income, first-generation students were less likely than their peers to remain in education, mathematics and science, and health. They were more likely than their peers to remain in the social sciences, computer science/engineering, business, and vocational fields, demonstrating the variance of retaining these students within the STEM disciplines. However, the largest gap between low-income, first-generation students and their peers, in terms of being “retained” in their major, was in mathematics and sciences, where they were 15 percent less likely than their peers to stay in their majors. However it is important to note that, at every level of the income spectrum, African American STEM achievement is lower than that of their White peers, demonstrating the significance of race and not just class in their STEM achievement outcomes.

In 2001, African Americans made up 13.3 percent of freshmen starting college but received just 8.8 percent of the bachelor’s degrees in STEM fields in 2005, 4 years later (National Science Board, 2008). In comparison, White students made up 74.8 percent of incoming freshmen in 2001 and received 67.3 percent of the STEM bachelor’s degrees granted, in 2005. In 2009, the number of African Americans receiving bachelor’s degrees decreased almost 2 percent to just 7 percent of all STEM bachelor’s degrees, 4 percent of master’s degrees, and 2 percent of PhDs (National Center for Education Statistics, 2010). There are numerous theories related to the achievement of African Americans, but critical research from the mathematics education community is promising because it exposes the socially constructed nature of race and racism (Spencer, 2008).

Collectively Blacks have been socially constructed and portrayed as inferior and incapable of high STEM achievement. Within this context of social devaluing, Black students’ performance in STEM fields has often replicated these low expectations for academic success. However, this is only part of the story of Blacks’ experiences in schools, as some students, in spite of multiple challenges, develop and maintain the successful skills necessary to persist in STEM learning and participation (McGee, in press; McGee & Martin, 2011a, 2011b; Perry, Steele, & Hilliard, 2003). However, recent studies have indicated that some Black students must negotiate a complex mix of educational and social competencies in their lives to persist in STEM-based fields.

Student participants have raised important considerations regarding STEM learning and participation among Blacks, considerations not usually raised in current education research on Black students. These include race-conscious self-perceptions in the journey toward completing a degree in a STEM field and societal and

self-constructions of what it means to “be Black” in the contexts of STEM, and how ability and motivation intersect with stereotypes and other forms of bias. Rarely do we hear about mathematically successful students who come from low-income urban environments and the experiences they attribute to their STEM and college success. A focus on STEM success for this vulnerable population can help to explain how and why some Black students achieve in these disciplines while others, with similar life conditions, fall behind or drop out of school altogether.

### THEORETICAL PERSPECTIVE

As suggested, this research is guided by a particular theoretical framework which extrapolates how students make sense of their college success in spite of the many challenges they faced growing up in urban Black America. Phenomenological Variant of Ecological Systems Theory (PVEST) is a life span model of identity development processes and outcomes with a gendered, context, and race-ethnicity sensitive emphasis. As a life-span human development framework, it addresses the foundational character of resiliency, identity, and competence formation processes for diverse youth both in the United States and abroad (Spencer, 2006, 1985, 2008; Spencer, Dupree & Hartmann, 1997; Spencer, Harpalani, Cassidy, Jacobs, Donde, Goss, Miller, Charles, & Wilson, 2006). Whether formally or informally acknowledged as such, race continues to play an unacknowledged but major role in the contemporary American socialization process (Spencer, 2011). Thus, we not only incorporate but emphasize racial socialization as another aspect of context into our use of the identity-focused cultural ecological theoretical perspective (i.e., PVEST).

The PVEST framework maintains that risk and protective factors are dynamic and situational in nature. Human adaptive processes and requirements are linked with the character of the individual-context fit. Crucial to the study's objective, the first component of PVEST, the Net Vulnerability Level, involves the operation and negotiation of both risk and protective factors as humans navigate place and space as strategies are enacted to cope with developmental tasks required for manifesting competence. This framework presupposes that all humans are vulnerable and have both risk and protective factors given unavoidable individual-context interactions unavoidably experienced in myriad socialization environments. As lives unfold across contexts, risks are translated into normative and non-normative challenges, and, in parallel fashion, protective factors provide a variety of supports. Obviously, in naming just a few sources, the content and etiology of one's level of vulnerability may be different given individuals' diverse histories, biological and psychological attributes, phenotypic characteristics, and contemporary experiences. Accordingly, the framework provides a unique perspective, important for understanding whether and how individual young people will form attachments to the diverse socialization settings including the formation of an American identity (see Spencer 2011). It explains how individuals can have different experiences in the same context, based on how they

perceive and are perceived within that context. It also explains how the different experiences that young people have will lead them to forge very different identities vis-à-vis American society even when sharing the same context. When considering something as basic as an elementary, middle, or secondary school curriculum for a history or science class, the core content may be interpreted quite differently. Students may experience the proffered class content as a good fit between their experiences and the expectations of society or, particularly for racial and ethnic minorities, not so much. That is, it may not reflect their experiences in positive ways. An absence of positive fit and the consequent experience of psychological dissonance, then, can suggest sources of risk, challenges, and heightened stress for some. While at the same time, if the fit is positive, for others, it can offer them psychological protection manifested either as hard earned opportunity or inferred beliefs of superiority and an assumption of earned privilege while not acknowledging disproportional supports or other benefits. Such parallel and non-overlapping experiences can occur while all simultaneously share the same space. PVEST, as a conceptual device for understanding unique meaning making processes, makes clear how such diverse perceptions can take place.

As described, for Black students, “vulnerability” is often presumed due to the presence of unyielding high risk determinants, with little or no acknowledgment of protective factor presence. In fact, the conceptual proclivity, at best, continues a fostering of stigma and stereotyping (Spencer, 2008; 2011). The resiliency and agency of Black students in reducing their net vulnerability level has been largely understudied (Spencer, Dupree, Tinsley, McGee, Hall, Fegley, & Elmore, 2011). The absence of research on resilient African American youth who employ effective coping strategies in meeting challenges has added to the misrepresentation of their experiences and outcomes (Spencer, 2008; McGee & Martin, 2011). PVEST takes into account how individuals perceive risks and protection, which can be inferred from a variety of contexts, including their homes, schools, peer groups, and communities. As suggested, a “motivated naiveté” persists which ignores the counterbalancing of risk level with resistance and resiliency factors.

The analysis of identity and the processes that affect optimal development particularly for historically marginalized students impact research on African American students in several critical ways. It provides strategies to counter an essentializing and pathologizing of Black urban youth, and affords tools for considering and incorporating social contexts (socially or individually constructed) within the same analysis. PVEST acknowledges and interrogates institutional and structural racial bias, racial stereotypes, and other complex forms of discrimination. It allows for a better understanding of Black urban students' transitioning from the cultural communities in which they have spent most of their lives to drastically different cultural and social environments.

The PVEST framework has helped to not only demonstrate that protective factors exist for Black students, but also has shed light on the extent to which these protective factors matter for explaining and increasing resiliency (i.e., good outcomes

achieved in the face of significant challenge). PVEST has only recently been used for particular content areas like engineering and mathematics, adding another extension to this already robust framework's application (McGee, in press, 2012; McGee & Spencer, 2012; McGee & Martin, 2011; Spencer, 2012). However, given that this STEM field represents another learning and socialization context, the conceptual benefits of the PVEST framework should be obvious.

### Racial Socialization for African American Youth

The customs involved in the gestational and early neonatal periods may represent cultural traditions; nonetheless, human beings come into the world without an awareness of culture. Parents, teachers, and significant others usually transform human beings into culturally and socially skilled individuals. The general process of acquiring culture is referred to as socialization (Barbaran, 1993; Bowman & Howard, 1985; Constantine & Blackmon, 2002; Hughes, Rodriguez, Smith, Johnson, Stevenson, & Spicer, 2006; Peters, 1985; Stevenson, Cameron, Herrero-Taylor, & Davis, 2002). Consistent with our PVEST conceptual orientation, unavoidably, socialization includes experiences of challenge as well as opportunities for support. Socialization is complicated in the United States by race and other social determinants (i.e., socio-economic status, gender, sexual orientation, etc.). African Americans are most often labeled as individuals who do not conform to culturally defined standards of normalcy and it is assumed that they have not internalized the necessary norms of society. Such labels as "deviant," "academically inferior," and a host of other negative brandings have created generalizations about Black students who have been relegated to second-class educational status (Harper, 2012; Miller, 1999). Brown (2008) defines racial socialization as "behaviors, communications, and inter-actions between parents and children that address how African Americans ought to feel about their cultural heritage and how they should respond to the racial hostility or confusion in American society" (p. 33).

The family is considered to be one of the most powerful socializing agents as it is the first institution with which an individual comes into contact, and many times the last institution with which the individual has final ties (Bowman & Howard, 1985). Racial socialization is the process of raising African American children to have positive self-concept and racial identity in a negative and often hostile environment (Barbaran, 1993; Peters, 1985). The process includes both implicit and explicit messages given to children and adolescents on being African American, implicit messages on appropriate values, beliefs, and behaviors, as well as direct coping mechanisms for dealing with racism.

Researchers have recognized that racial socialization by parents may insulate African American youth from racist and negative stereotypes and encourage them to persevere and be successful (Bowman & Howard, 1985; Spencer, 1983; Stevenson, Cameron, Herrero-Taylor, & Davis, 2002). For example, Hughes, Rodriguez, Smith, Johnson, Stevenson, & Spicer (2006) found that parents' proactive efforts to teach

their children about their race and ethnicity predict more positive and less stereotypical attitudes of children toward their own racial-ethnic group. Although this study supports the positive effects of promoting racial-ethnic pride and preparing youth for racial barriers, more recent work suggests that few parents actually engage in these types of conversations and activities (Marshall, 1995). In many ways, the finding is not surprising since, under the best of supportive conditions, parenting can be daunting given the multiple competing forces. Bowman, and Peters (1985) and others (i.e., Neblett, Phillip, Cogburn, & Sellers, 2006) have argued that, with the unique challenges facing African American children, parents could help their children to overcome negative societal expectations as well as instill a positive sense of identity to buffer against the negative effects of racism and discrimination. Preparing African American children for racial barriers has been related to children's academic achievement (Bowman & Howard, 1985). Neblett, Phillip, Cogburn, & Sellers (2006) provided evidence that racial socialization may compensate or at least counteract interactions where students feel racially discriminated against. Accordingly, from a PVEST perspective, the potential for parental efforts to racially socialize youth may function as a protective factor.

### RESEARCH QUESTIONS

There has been a great deal of discussion by President Obama, Fortune 500 companies that employ STEM professionals, the media, and educational researchers alike about the lack of STEM graduates needed to fuel innovation, competition, and new technologies for the twenty-first century and beyond. Students who grow up in predominantly Black neighborhoods are often shut out of STEM academic and career trajectories (Schott Foundation, 2012). Absent from this growing conversation are details about how Black students achieve and sustain success in the racially stereotyped and competitive fields of mathematics and engineering. The following research questions guided this study:

1. *What role did protective factors found in Black neighborhoods play in establishing patterns of high mathematics and engineering achievement for these participants during the K-12 years?*
2. *What role had geographic and demographic change played in the way that these African American students interact socially at the individual level in college?*
3. *How do these respondents understand, make sense of, and respond to their racialized experiences at their PWIs?*

The specific focus on Blacks from urban neighborhoods is appropriate for the current study because students from Black neighborhoods have been considered the least successful student group in education (including STEM disciplines) in terms of the proportion of enrolled students persisting to graduation and traditional assessment outcomes (Duncan & Brooks-Gunn, 1997; Ellen & Turner, 2003; Hertz,

2005; Kozol, 1992, 2005; Quillian, Lincoln, & Pager, 2001). Variance is presented in the participants' narratives given that three of the six student respondents resided in what they articulated as Black middle class urban neighborhoods (e.g., "Black success was all around me." "My dentist is Black, my doctor is Black, my Dad is an engineer and my mom's a teacher"). The other three students were raised in Black neighborhoods of low socio-economic status (e.g., "Although I had to walk through the *Valley of Death*, I rarely missed school." "I did not really know I was *that poor* until I went down state for a math competition.").

This particular research study does not thoroughly explore the complexities of the social and spatial systems embedded within urban neighborhoods; however, the urban neighborhoods that these participants hail from perpetuate cycles of risk and also less acknowledged cycles of resilience. This study presents a daunting portrait and analysis of how human capital and academic behavior are optimized in these environments, and attempts to expose the durability of resilience found in Black neighborhoods in which students persevere in spite of reproduced inequalities over generations.

In this project we resist comparisons of White students in predominately White neighborhoods with Black students in predominately Black neighborhoods mainly because of social class confounds. Nonetheless, it is critical to acknowledge that race comparative studies, which have dominated research on African American children, can provide some valuable information. For example, studies in the race comparative paradigm illuminate the adverse affects of racism and its intersectionality with issues of class and gender (Crowder & South, 2005; Price & Wohlford, 2005). However, similar studies have also created stereotypical assumptions, racist perceptions, and an overall short-sighted and impoverished body of knowledge on Black neighborhoods and the people who live there (Banfield, 1970; McWhorter, 2000). A holistic perspective of Black neighborhoods is better achieved by in-depth focus on the individuals, rather than their placement within deficit paradigms. This strategy guarantees that a retelling of both the trials and triumphs within Black youths' communities are represented.

## PARTICIPANTS AND CONTEXT

For this chapter, data were obtained from six students that participated in a larger study about African American high-achieving STEM advanced college students (N=23). All six of the students in this study were raised in communities in which the Black population was over 85 percent. Three of the six students described being raised in low SES Black communities (pseudonyms are Tinesha, Feya, Supo), and 2 students identified their communities as "Black middle class" (pseudonyms are Mike and Bobby) (see Table 13.1). Students raised in low SES and predominately Black conditions portrayed their communities with the following characterizations: "lower-working class and no working class" (Feya), "Black and poor" (Tinesha). Finally, Supo noted that "we lived on the block past poor: we was broke." Tiffany's

family, during her K-12 years, oscillated between low SES Black neighborhoods to those of Black middle class. The students who identified their communities as Black middle class also used that terminology to describe their neighborhoods. Tinesha, Feya, Bobby, Tiffany, and Supo attended Medium University; Mike was at Soho University (both are university pseudonyms).

## STUDENTS' K-12 NEIGHBORHOODS: SEPARATE, UNEQUAL YET ROBUST

### Low-Income Neighborhoods

Although Tinesha, Feya, and Supo did not live in the same neighborhood, they all grew up in low-income neighborhoods within the same urban Midwestern city ("Canvas"), thus, they shared similar neighborhood dynamics. Canvas's low-income neighborhoods were infamous in the 1960s for shootings, robberies, fires, joblessness, single-parent families, dreadful schools and high dropout rates, and abandoned buildings and vacant lots. Racially segregated communities were normalized then and today, and segregation still remains a mainstay in Canvas. Most African Americans that live in Canvas are still clustered in two areas ("Area A" and "Area B"), each with Black populations above 90 percent. Two-thirds of the Canvas's Black populations live in community areas that are at least 80 percent Black.

Tinesha, Feya, and Supo have contended with homelessness, domestic violence, abuse, and neglect. These three participants have also attested to multiple forms of protection and love within these same communities. They were known in the communities as the youth that were going to make it. Although their neighborhoods had very little racial diversity, there was a fair amount of age diversity, and elders served as second teachers for Feya, Supo, and Tinesha. Within their K-12 schooling environments while enduring extraordinary class management issues, they were also sheltered by their teachers and given additional opportunities for academic and social advancement. They were often given leadership positions within their schools and chosen for summer internships and other out-of-school activities.

### Black Middle-class Neighborhoods: Surrounded by Poverty and Promise

Pattillo (2005, 2008) has noted that the Black middle class faces greater economic and ecological disadvantage and risk when living in neighborhoods heavily populated by Blacks of middle class socio-economic status. Mike, Bobby, and the majority of Tiffany's K-12 academic years were lived within Canvas's middle class neighborhoods. These three students shared a similar journey of incongruity in which their middle class income did not estrange them from living in close proximity to crime ridden, low-income neighborhoods, Area's A and B. Canvas has a long history of geographic racial segregation and it's Black middle class is subjected to islands and small conclaves which are vulnerable to violence, lack of shopping opportunities, and physical decay. Close to 80 percent of middle-class households in Black middle-class

**Table 13.1. Participants' Demographic Information**

Name	Age	Gender	College	Major	Intended Career	Intended Grad Major
Tiffany	24	Female	Medium	Electrical Engineering	Undecided	Engineering Education
Supo	19	Male	Medium	Mechanical Engineering	Engineer	Mechanical or Electrical Engineering
Mike	26	Male	Soho	Mechanical Engineering	Fulltime Pastor	Divinity
Bobby	22	Male	Medium	Industrial Engineering	Business Owner	MBA
Feya	24	Female	Medium	Civil Engineering	Math Professor	Civil Engineering or Math
Tinesha	26	Female	Medium	Bio-medical Engineering	Bio-medical Engineer	Professor or Business Owner

census tracts were within four blocks of tracts where at least a third of the residents lived in poverty. By contrast, only about 35 percent of households in White middle-class census tracts in Canvas are within four blocks of high-poverty areas.

Students described their Black middle class families as engaging in considerable community involvement, in part to deal with the potential of crime and violence in their neighborhoods, but also to be collective advocates for their children's educational opportunities. They also spoke of living in their middle income Black enclaves as a way to escape being judged by Whites and to exert more control over their communities and destinies. Also the students grew up around a significant number of Black business owners as well as successful Black bankers, business owners, dentists, doctors, lawyers, and restaurant owners.

## INSTITUTIONS

Medium University is a public institution located in a large urban city in the Midwest that serves the local population. It is primarily a commuter campus and has a student population of between twenty and thirty thousand. About 90 percent of Medium's students are residents of the state. Soho University, although located within a large urban Midwestern city, houses a large international population and caters to STEM students. The larger study included two additional institutions, both of which have higher tuition costs than Medium and Soho. However, Medium and Soho offered different social contexts that reflected the varying pressures and supports that bear upon the students' identities as *Black* mathematics and engineering learners. Across

these contexts, students asserted their own understandings and responded to and negotiated the ways they define and perceive *Blackness*.

## METHODS AND DATA ANALYSIS

PVEST is a culturally sensitive theoretical framework, which supports the use of diverse research method apropos for understanding identity processes. This conceptual approach was enlisted to explore the experiences of Black students who were reared in Black urban neighborhoods and who attended PWIs sometime in their postsecondary careers. A qualitative research study allowed us to view a broader picture of the participants' lives and experiences in their home neighborhoods and PWI settings. A brief demographic questionnaire was also included to supplement the qualitative data.

Qualitative methods involve collecting observational or verbal data that are analyzed inductively (Berg, 2007). Semi-structured interviews were used to gain understanding of the African American students' K-12 experiences, including their personal perceptions of urban neighborhoods and the complexities of risk and protective factors found within those spaces. Qualitative methods allowed for a comprehensive examination of students within their own contexts; in this case, it included their own language and meaning making cultural niches (Marshall & Rossman, 2006). All interviews were semi-structured and biographical.

Qualitative research relies heavily on in-depth interviews for data collection and is particularly useful when researchers want to investigate insider perspectives—in this case students' perceptions of their dual worlds (Black neighborhood and PWI) and how they make meaning of these two different contexts (Marshall & Rossman, 2006). A PVEST conceptual approach provides the option of interpreting meaning making as unavoidably associated with context, thus, making it the ideal framing for the current research effort. Through an interview format, a qualitative design permits closeness between the data and the phenomenon being studied. Thus, we were able to infer meanings from the experience of growing up in urban Black communities and transitioning to mostly White academic and social spaces.

Given its framing, this study followed a general inductive data analysis format (coding, categorizing, thematizing) for resorting and managing data. The initial set of codes revolved around the students' narrative of being resilient in the face of structural and social challenges found within their Black urban neighborhoods. Through the lens of PVEST, we extracted rich accounts of identity processes that unpacked patterns of coping and resiliency (or lack thereof) that students developed over time (Spencer, 2008). Students' continued academic success demonstrated that, through normative human development, maturity, and experience, they acquired a sophisticated arsenal of adaptive coping strategies used to facilitate resilient outcomes. It was important to label and understand these strategies in relation to each student's perceptions, based on their experiences and consequences, rather than prescribed

traditional definitions of coping and resiliency. This methodology recognizes that students may be the best experts for understanding their own classification and coping efforts with multiple and sometimes overlapping forms of risk and protection in their lives. The second set of codes focused on the perceptions of opportunities and constraints at PWIs. Finally, another related set of codes detailed the strategies used by students to negotiate successful participation in college mathematics and engineering at their PWIs.

## RESULTS

Results indicate that students' self-described risk and protective factors show tremendous variability, highlighting the dynamic nature of how students make sense of their lives (Spencer, 2008). Also, depending on the situation and circumstances, risk factors can transform into protective factors and vice versa. Overall, student responses suggested that their protective factors helped to create and maintain academic success, agency and general resiliency. As for the six students who were raised in predominantly Black neighborhoods, they shared similar stories of both protection and risk. Although some of the students spoke of their Black neighborhoods using both dominant narratives and counter narratives, we highlight the less mentioned stories of community solidarity and multigenerational family support that students benefited from in their Black urban neighborhoods. In the transition to predominately White institutions (often triggered by the desire to have experiences with greater racial diversity), one main theme arose: students' lack of understanding and available practiced strategies to deal with overt and covert forms of racism found among their PWI college campuses.

### SHELTERED IN THE 'HOOD

Sharkey (2006) argues that youth to some degree determine their level of exposure to different neighborhood characteristics through the decisions their parents make about where, how, and with whom their children spend their time. Variation in vulnerability may be driven by differences in individual and family characteristics that create different levels of neighborhood effect mechanisms. For the project's participants, level of vulnerability was associated largely with the dangers of the neighborhood, but their homes served as places of warmth and security. For example, the four students who lived in low SES Black neighborhoods at some point in their upbringing provided similar accounts of their safety, as described by Feya: "It was a war going on outside, but inside my home I felt loved and protected." Supo lived in a neighborhood cited number one in the city for robberies within a six-month period in 2009. The city bus would have provided the easiest transportation option for him to go to and from school, but his mother "always, always, always" provided the transportation because of fears about city bus safety.

Mike lived in a *Black middle class neighborhood* (Pattillo, 2005; 2008), which due to recent housing project closures, was becoming increasingly a mixed class community. He recalled his parents' decision to stay in the neighborhood and remembers hearing about violence daily through media outlets and even attested to hearing a "couple of gun shots," but he reported that he rarely saw violence. His mother is a high school teacher and his father runs his own mechanic business. They have two cars, a nice house, and take a family vacation every other year. Mike used to long for "greener pastures," but his family had strong reasons for staying in that community:

They [Mike's parents] feel good about living in semi-hood. My mom teaches at an all White high school and when she comes home she says she needs to come back to Black. (Mike chuckles). My dad's business is in City Park (a neighboring White middle class community) but he says we cannot afford to live there. We do have a nice three-bedroom, two-level house. They don't seem too pressed to move anytime soon.

From the narratives presented above it appears that the participants' parents/guardians helped to protect their youth from the neighborhood violence. Thus, their homes within their respective Black neighborhoods functioned as a protective factor, even in the midst of the economic and social barriers presented by the neighborhood.

### NEIGHBORHOOD/COMMUNITY SOLIDARITY

Students, situated within highly malleable urban spaces spoke in strong positive as well as negative terms about their neighborhoods. The negative terminology was generally situationally specific, frequently referring to moments in time when a bad event took place (e.g., a fight, a robbery, a shooting). However, students also countered these narratives with descriptions of their communities as places of social cohesion and solidarity. The participants reported both feelings of well-being and moments of fear and danger. The sense of well-being was nurtured through culturally rich neighborhood interactions such as backyard cookouts, card game nights, football parties, and neighborhood Block Clubs and civic organizing efforts.

The students discussed the city blocks they were raised in with fond memories. Bobby talked about his neighborhood block association, which hosted multiple events that helped to foster community building. Further, when Bobby had a trunk party for college, he received overwhelming participation from the members of the block club. Bobby reflected that he now understood why his parents choose to stay in their Black middle class community in spite of being financially able or presented with opportunities to move into more racially diverse and economically rich communities.

Mrs. Sanders cried at my going-away [to college] party. She watched me grow up. Got in my butt when I got into a little trouble in high school and she really cared. She was so proud of me . . . Like I was her own grandson. Mr. Williams, I think he got emotional too. But he kinda played it off. But I could tell the way he hugged me that he



was really proud too. He almost choked me (smiles). There was no way I was going to let them down.

Supo, after spending his first few months at a PWI, developed a newfound appreciation for home neighborhood. He described the neighborhood around his PWI as “too quiet.” Supo said it wasn’t just the lack of noise, it was the lack of “life happening.” “Everybody goes in and out through their garage[s]. They could go days without seeing their neighbors.” He further explains:

No loud kids playing on the street. I’m not dodging balls or jump ropes as I walk down the street. No ladies choppin’ it up with their girls, no alley mechanics working on rides. Nothing. It was just silence. I got homesick real quick. I wanted to hear the very noise I was running away from.

For Supo, media representation of the lifestyles and homes of the White middle class had a certain appeal that he strongly desired. However, he quickly discovered that cultural differences between Black urban living and White suburban living were much more complex than “less crime and clean streets.” He yearned for the liveliness that was prominently showcased in his home community.

#### Multigenerational Family Support—Refining the Single Black Parent

African American family multigenerational networks have been a source of strength and resilience for Black communities (Waites, 2009). Three students (Tinesha, Supo, Feya) made it apparent that although their fathers were not in the homes, however, their mothers were far from being alone when it came to the rearing of their children. For example, Feya details the benefits of living with her mother, aunt, grandmother, and grandfather. Although her father was absent, she expressed extreme gratitude for the benefits of being raised by four caregivers:

I was basically raised by three people: my mother, grandmother, and grandfather, and sometimes my aunt pitched in. I felt blessed to have my grandma and grandpa in the household. They taught me things that my mother won’t learn for another 30 years, and I would not learn for another 60. Nothing can take the place of their wisdom and love.

Researchers often associate the lack of a traditional two-parent household as a risk factor. However, often under-acknowledged are the multiple forms of protection found within multi-generation households. Feya learned countless lessons about the racism her grandparents faced and was socialized to succeed in spite of challenges.

Bobby said that he learned how to make informed decisions, to use good reasoning, and to develop the art of listening beginning at a young age. Growing up with his mother, father, grandmother, and a sister twenty years his elder was particularly beneficial especially when an individual within the family was confronted with an important decision. At such times they met as a group and discussed the pros and cons of the issue. He described a wisdom-based hierarchy for the decision making

process. “Grandma has the most influence and I have the least, except when it comes to young people stuff, then my family turns to me for help,” Bobby recalls. Every member in his household also contributed to Bobby’s college fund over the years (“even if it was pennies”) and they still serve as his “rock” during difficult times. Although his grandma has passed on, Bobby cherishes her advice, old school knowledge, and love. “I carry her with me always,” he tearfully replied.

#### NEIGHBORHOOD SUPPORT FOR STEM EXCELLENCE

Students received messages about the benefits of being successful in STEM from individuals in the community, many who themselves had limited STEM learning opportunities. The participants also received support and encouragement for their STEM abilities from multiple sources including neighbors that appeared to have limited employment and income. For example, Mike spoke fondly about the “the old men up the street who hang outside of the barber shop.” Upon discovering that Mike was interested in mechanical engineering, they started referring to him as “The Engineer.” They often demanded that Mike produce his math and science grades and provided advice on “staying the course.” The students’ sources of support seemed to elevate the importance of learning and succeeding in STEM. This success was specifically defined as beyond stellar grades and personal achievement, but also included the expectation to serve a collective responsibility to their communities. They were encouraged to share their talents as uplift and inspiration for future generations. Thus, the students’ “neighbors” helped to transform their STEM success into the potential for an economically and politically empowering (collective) act.

In fact, the students’ persistence and motivation to succeed in STEM education seemed grounded in giving back to their neighborhoods. Their desires to take leadership roles via their STEM achievements to support those who are STEM literate and those who appeared less apt to demonstrate the lessons they learned from neighbors and other significant neighborhood community members.

#### TRANSITION TO PWI: EXPOSURE TO PREDOMINANTLY WHITE PLACES AND NEGATIVE SPACES

In the larger study students who experienced racial bias in their K-12 years reported that such episodes actually helped them interpret the salience of race in the process of attending college. However, for the students showcased in this study, a lack of contact with White populations, in fact, left students perplexed in dealing with the sudden realities associated with being a Black student at a PWI college. From a PVEST perspective, the differences might be that prior exposure was associated with the development of adaptive coping skills to the challenge of “proximal” or “in your face” experiences of racism. Racial discrimination was manifested and coped with in these

students' lives prior to college attendance. In fact, for students in this study attending PWIs for the first time, racial discrimination was evident vicariously, collectively, institutionally, structurally, and trans-generationally (Harrell, 2000); but according to the participants' definitions, the actual experiences of race discrimination were not direct prior to attending college. The students in this study indicated that "true racism" did not play out in their lives until they reached their PWI campuses. Most of the students described racism as occurring in overt situations, reflected in such comments as, "My roommate called me an affirmative action student," "They put cotton on the door of the Black Student Union," "She told me to go back to Africa and visit my monkey relatives," etc.—all showcasing more bold and verbally blatant forms of racism than previously encountered. When inquiring about the rationale behind why these types of racist acts did not occur before college, a simple explanation followed: the students did not have many interactions with White people, and therefore, as consistent with a PVEST analysis, did not have need or opportunity to practice responsive adaptive coping strategies.

Tinesha's "entire family" lived within a 5-block radius in the city of Urbanina (a pseudonym). Tinesha described her predominately Black low SES community as a "Black Out," meaning:

The only people that weren't Black were the Asians and Indians who owned the gas stations and beauty supply stores.

From Tinesha's description, her community did not protect her family from some of the consequences of racism (i.e., poverty, joblessness, delinquent schools, violence, etc.). However, *it did offer a safe haven* against overt forms of racial discrimination. In college, she recalls her first unsettling experience, which she defined as Black-on-Black racism:

The one thing that was eye-opening when I came to Medium was I had never been, like, around Black people who didn't like Black people. Black people who were like, "I don't mess with Black people like that." And, you know, I think that was, that for me was like, "Wow! These [Black] people were like, 'I don't hang out with Black people; I don't date Black people; I don't do anything that have to do with Black people.'" I was like coming from [a predominantly Black city] where it's just Black people. And it was like . . . and it started to really take a toll on me. So I took a step back, and I observed for a minute, and then I started, like, reentering the Black community. But for a minute I couldn't handle it.

These experiences left Tinesha "not feelin' good" about herself. This new racial experience created an emotionally stressful period. However, at the same time, the challenge encountered afforded the potential for adaptive coping innovation; it provided the opportunity for generating new ways of thinking about racism as a system of oppression that impacts *all racial groups, including her own*. Initially Tinesha, was very significantly troubled by classmates' ideologies and the unexpected experience

with other Black students. Her initial response was avoiding other Black people and disassociating from all extra-curricular activities on campus. After a few weeks of reflection, however, Tinesha immersed herself in the pro-Black part of the Black community at Medium. Black poetry "sets" and the Black Student Union became places of safe haven and as she described them, provided a "saving grace." Importantly, Tinesha took the initiative to analyze how this socially constructed context was actually structured, and to reflect about how individuals associated with particular institutions organized themselves and behaved. Accordingly, Tinesha learned how to manage by adaptive coping in response to the manifestation of the racial discrimination challenge rather than simply "reacting in the moment" of frustration, dissonance and discomfort. Tinesha's coping strategies in response to her new experiences of overt racism suggests that she was able to adapt to uncertainty, reaffirm an efficacious sense of self, and to cope with the unexpected.

Mike spent his first year of college at a PWI. "Culture shock does not even begin to describe how I felt there," Mike recalled. His classes were filled with students who were mostly strangers to each other. However, the White students had a way of breaking the ice with each other that Mike just could not seem to penetrate. After his first few weeks, new friendships were budding all around him, but the only time he was approached by a classmate was to question his basketball abilities. Mike rebelled against these feelings of isolation by further positioning himself as an outcast. He began to dress in stereotypical ways that mirrored what he thought the institution felt about him. Mike adorned himself in baggy, sagging blue jeans, white undershirts, gold jewelry, and boots. He performed this resistive stance while maintaining high achievement in his classes, as if to prove to his PWI, that no matter how he was dressed or treated, he had a right to be educated. Surprising even to Mike, he stated that after a year of "agony" he, indeed, had forged some cool friendships, felt more accepted by peers and teachers, and even gave up the stereotypical dress style. However, he still did not feel good enough to stay. After his first year, he left his PWI and transferred to an institution within the city of his home neighborhood. He described an eerie feeling of belonging at times and other times felt he was only imagining or being fed the impression of belongingness. Mike longed for an institution where he did not have to question his worth and sense of being part of a community that truly believed in him.

## DISCUSSION

Unproductive labels, such as "at-risk," suggest the absence of protective factors and the over emphasis of risk status. Alternatively, the term vulnerability acknowledges that all humans are vulnerable but at different times represent various levels of human vulnerability. The term implies the simultaneous possession of both risks and protective factors although the level of vulnerability depends on the nature of the individual-context "fit" relative to a particular situation, which explains the

variation in level of vulnerability (e.g., high vulnerability . . . or not so much). Given the stories shared, obviously both contribute to the academic and social experiences as inferred and directly experienced by students from Black neighborhoods; too frequently they are assigned the unwarranted social stigma of failure. As a result, not only are protective factors often overlooked, but when noticed, they are lacking in conceptual depth and linked to cultural relevance. These protective factors assisted students in developing college and career trajectories. Every single student received their bachelor's degree in a STEM field that was listed in Table 13.1, but only half are pursuing a STEM-related graduate college or career trajectories.

Tiffany, after receiving her bachelor's in electrical engineering, is currently pursuing a master's degree in electrical engineering at an institution in the Midwest known for its prestigious engineering programs. Supo, after receiving his degree in mechanical engineering, decided that he wanted to become a mathematics teacher and is currently looking into different teacher education programs. Mike, as promised, is currently enrolled at a divinity school and is a junior pastor in training at a large community church in his community. Bobby is working (specific job title is unknown) for a law firm and is contemplating enrollment in an MBA program. Feya's current employment/educational status is unknown, but two years ago she was a manager for a local Starbucks store, after searching for positions in civil engineering. Tinesha is in her third year of a PhD mathematics education program and aspires to run a school dedicated to building STEM competencies in low-income Black and Latino students.

The six students in this chapter eloquently described the presence of protective factors found within their neighborhoods. They described the numerous supportive and emotionally protective experiences enjoyed in their upbringing. Their stories made evident the "good side" of living in their mostly Black communities. Some of these protective factors represented more traditionally defined characteristics such as strong family bonds, role models, etc. They also offered some nontraditional attributes including: the wisdom gained from multiple generations of family living together; lively storytelling from the men in the barber shop about political and social issues; comedic relief and the "weather proof perseverance" of street corner hustlers, to name a few.

This research particularly illuminates the benefits associated with multigenerational families. Some of the participants' household structures allowed them to face the many trials of Black urban life, while at the same time, to benefit from and be conscious of the myriad forms of support and wisdom of loving parents and elders. As described by study respondents, this safety network also provided a defense against the challenges associated with single parenthood by creating multiple supportive parenting relationships.

The positive attributes that students used to describe their neighborhoods are not presented to overshadow the cumulative effects associated with their families living in challenging conditions, particularly the plight of Black males. For example, the likelihood of a Black male in an urban environment serving time in jail or prison

is greater than 50 percent (Alexander, 2010). However, many Black students, even those that hail from the most depressed conditions, can achieve mainstream standards of academic success and possess the wherewithal to adapt in positive ways in response to the seemingly insurmountable challenges (McGee, 2009; Sanders, 1997). In other words, from a PVEST oriented human vulnerability perspective, the meaning making of the multiple family and community levels of support provided are powerful enough as models of coping to result in male youths' resiliency (see Spencer, 2006, 2008).

This study demonstrates that for students arriving at PWIs from racially homogenous Black neighborhoods (often mitigated by social class), there were fewer salient and overt experiences with bias and discrimination. Accordingly, these participants lacked sufficient opportunity to learn, internalize and cope with direct acts of racial discrimination, which is an important process in the healthy development of African American adolescents (Spencer, Dupree, Hartmann, 1997). It is questionable, however, if the outcomes related to racial discrimination, such as depressive symptoms, lower self-esteem, anger (Fisher, Wallace, & Fenton, 2000; Wong, Eccles & Sameroff, 2003) make it worthwhile to engage children in racially hostile situations that expose them to racialized discrimination and opportunities to practice coping. Could it be that living in an *all* Black neighborhood, attending an *all* Black school, and interacting mostly with individuals who have been placed or have decided to work in mostly Black contexts could serve as an academic and social protective factor? The respondents' neighborhoods and racially monolithic upbringings appeared to offer immunity against being overtly racially discriminated against. However, representing a social conundrum, it is critical to acknowledge that these same urban Black neighborhoods are themselves in existence, in part, because of systemic and structural racial inequities (!).

Given both recent and long-term conceptual treatment of the cultural values topic and the cultural socialization process (Spencer, 1983, 1985; Stevenson & Arrington, 2009), there can be little doubt but that racial socialization functions as a protective factor against newfound experiences of racial discrimination, although the impact varied among the participants in this study. The ideologies of parents and caregivers and relationships with others who assisted in "being raised" were presented subtly, deliberately, overtly, and covertly. Although the participants had not personally experienced overtly racist situations (or did not recognize them as such), nonetheless, racial socialization appeared to have prepared them to adaptively cope and succeed in the face of direct racial bias and adversity. Messages of racial pride emphasized collective solidarity, enhanced awareness of racial inequities and, thus, somewhat functioned to buffer racial incidents. Previous studies have found a positive correlation with racial socialization to positive self-concept, group attitudes, mental health, and academic performance (Bowman & Howard, 1985; Ou & McAdoo, 1993; Zimmerman, Bingenheimer, & Behrendt, 2005).

For some, experiencing discrimination led to temporarily lowered levels of college academic performance. For a brief moment in their academic careers, these participants

contemplated dropping out and some did leave their predominantly White institutions for more culturally affirming educational settings. However, racial socialization may have assisted in mediating certain racial messages they received in college, which buffered against the intensity and impact of negative academic outcomes.

This study was limited by focusing on Black neighborhoods in three Midwestern urban cities. Ongoing research requires new and far more nuanced data. In particular, we need data that measure how students and families allocate their time between school, work, neighborhood, and home contexts, and the consequent influences on individual behavior.

The variability in these accounts points to the limitations of relying on a single social identity, such as the urban neighborhood, as a way of understanding the determinants of Black academic engagement and performance. There is, indeed, a great deal of substantive variation in how African American students interpret and make meanings from their neighborhood experiences; with little doubt, this variation stems from both their multiple social identities and coping models available and observed in predominantly Black neighborhoods as well as the variability of their personal outcomes. The data further suggest that additional research with broader samples of African American STEM college students are needed within and beyond Black neighborhoods to fully explore the relationship(s) between racial perceptions, transition to college, and STEM success. Future research should also seek to understand the effects of racial socialization on the development of African American students' perceptions of and responses to racism and discrimination in different geographic and racial contexts.

While studies on racial and economic oppression are commonplace, more identity-based neighborhood studies could benefit from the wisdom and cultural artifacts that serve as fundamental forces of competence and consciousness in promoting academic excellence for its youth. PWIs seeking to establish increased retention rates of Black students, particularly the high-achieving STEM students who have a myriad of educational options, should consider particular strategies. For example, establishing programming to ease underrepresented marginalized students transitioning from mostly ethnically monolithic urban neighborhoods to mostly White contexts both would implicitly acknowledge the problematic of racial discriminating contexts in PWIs while impacting more general academic success and less environmental hostility. Engaging in staff and faculty training which provide insights about the neighborhood and family-based strengths which youth bring with them are critically important. Such strategies would be helpful in maximizing and not compromising students' strengths and protective factors and, thus, are critical innovations. The suggested innovations would similarly assist counseling and university support service staff members. The knowledge and insights suggested would provide an enhancement of staff members' supportive coaching and clinical competencies particularly salient for diverse youth of color who, too frequently, are left to assist each other as opposed to accessing carefully trained personnel. Moreover, preparing youth in high school through role-taking and similar techniques might be another source of

preparatory coping supports. Suggested here given the narratives shared is that more culturally sensitive training is important to guarantee that available support is accessed and experienced by STEM students as, indeed, supportive.

Understanding this unique and under-researched frame of reference for Black students with regards to their neighborhood history may shed light on their current challenges in higher education, particularly at PWIs. From a multi-component policy perspective, the noted insights may well provide ideas to ratchet up effective and supportive strategies at the PWI and local governmental levels. For example, self-segregating, which was once seen as separatism, could also be explained as a coping mechanism. Additionally hiring and retaining Black faculty and staff who are sensitive to these issues might assist in easing the transition for these students.

## CONCLUSION

The traditional conversation on Black neighborhoods can be problematic because it fails to begin with a careful examination of all aspects of Black neighborhoods, with an eye towards understanding how the day-to-day practices in neighborhoods contribute to the creation of resiliency and agency. The knowledge base of the participants' Black neighborhoods for this study was informed by their insights and perspectives and contributes to its value in describing these spaces as psychologically, emotionally, socially, and environmentally enriching.

The vitality matters, not only within the United States, but also its development and robustness in communities, derived in large part from the outputs of highly trained individuals and teams and the steady stream of scientific and technical innovations they produce. Students reared in predominantly Black neighborhoods are noticeably missing from these enterprises, which may lead to new discoveries from which the entire world could benefit. As we currently function, we not only suffer from a loss of innovation, but also a loss of equity and equitable outcomes particularly failing Black students from Black neighborhoods who have the desire and ability to achieve in STEM.

## REFERENCES

- Alexander, M. (2010). *The New Jim Crow: Mass Incarceration in the Age of Colorblindness*. New York: The New Press.
- Anderson, J. D. (1995). Literacy and education in the African American experience. In V. L. Gadsen, & Wagner, D.A., (Eds.), *Literacy among African-American youth* (pp. 19-37). Cresskill, NJ: Hampton Press.
- Aud, S., Fox, M., & KewalRamani, A. (2010). *Status and Trends in the Education of Racial and Ethnic Groups* (NCES 2010-015). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

- Banfield, Edward. (1970). *The unheavenly city: The nature and future of our urban crisis*. Boston: Little, Brown.
- Barbaran, O. A. (1993). Coping and resilience: Exploring the inner lives of African American children. *Journal of Black Psychology*, 19(4), 478-92.
- Berg, B. L. (2007). *Qualitative Research Methods for the Social Sciences* (6th ed). New York: Pearson Education, Inc.
- Bowman, P. J., & Howard, C. (1985). Race-related socialization, motivation, and academic achievement: A study of Black youths in three generation families. *Journal of the American Academy of Child Psychiatry*, 24(5), 134-41.
- Brown, D. L. (2008). African American resiliency: Examining racial socialization and social support as protective factors. *Journal of Black Psychology*, 34(2), 32-48.
- Bursick, R. & Grasmick, H. (1993). *Neighborhoods and Crime*. New York: Lexington Books.
- Chiricos, T., McEntire, R., & Gertz, M. (2001). Perceived Racial and Ethnic Composition of Neighborhood and Perceived Risk of Crime. *Social Problems*, 48(3), 322-40.
- Civil, M. & Planas, N. (2004). Participation in the mathematics classroom: Does every student have a voice? *For the Learning of Mathematics*, 24(1), 7-12.
- Cohen, G. L., Garcia, J., Apfel, N., & Master, A. (2006). Reducing the racial achievement gap: A social-psychological intervention. *Science*, 313(10), 1307-1310.
- Constantine, M. G., & Blackmon, S. M. (2002). Black adolescents' racial socialization experiences: Their relations to home, school, and peer self-esteem. *Journal of Black Studies*, 32(5), 322-35.
- Cross, W. E., Smith, L., & Payne, Y. (2002). Black identity: A repertoire of daily enactments. In P. Pedersen, J. Draguns, W. Lonner, & J. Trimble (Eds.), *Counseling across cultures* (5th ed., 93-107). Thousand Oaks, CA: Sage.
- Crowder, K., & South, S. J. (2005). Race, class, and changing patterns of migration between poor and nonpoor neighborhoods. *American Journal of Sociology*, 110(6), 1715-1763.
- Darity, W. A., Jr., & Nicholson, M. J. (2005). Racial wealth inequality and the Black family. In V. C. McLoyd, N. E. Hill, & K. A. Dodge (Eds.), *African American family life: Ecological and cultural diversity* (78-85). New York: The Guilford Press.
- Duncan, G., & Brooks-Gunn, J. (1997). *The Consequences of Growing Up Poor*. New York: Russell Sage.
- Ellen, I. G., & Turner, M. (2003). Do Neighborhoods Matter and Why? In John Goering and Richard Feins, (Eds.) *Choosing a Better Life? Evaluating the Moving to Opportunity Experiment* (pp. 313-38). Washington, DC: Urban Institute Press.
- Eschholz, S., Chiricos, D., & Gertz, M. (2003). Television and Fear of Crime: Program Types, Audience Traits, and the Mediating Effect of Perceived Neighborhood Racial Composition. *Social Problems*, 50(3), 395-415.
- Fisher, C. B., Wallace, S. A., & Fenton, R. E. (2000). Discrimination distress during adolescence. *Journal of Youth and Adolescence*, 29(1), 679-95.
- Gilens, M. (1996). Race and poverty in America: Public misperceptions and the American news media. *Public Opinion Quarterly*, 60(5), 515-41.
- Harding, D. J. (2003) Counterfactual Models of Neighborhood Effects: The Effect of Neighborhood Poverty on High School Dropout and Teenage Pregnancy. *American Journal of Sociology*, 109(6), 676-719.
- Harding, D. J. (2003). *Living the Drama: Community, Conflict, and Culture among Inner-City Boys*. Chicago: University of Chicago Press.
- Harding, D. J., Gennetian, L., Winship, C., Sanbonmatsu, L., & Kling, J. (2010) Unpacking Neighborhood Influences on Education Outcomes: Setting the Stage for Future Research.

- In Greg Duncan and Richard Murnane (Eds.), *Social Inequality and Educational Disadvantage*. New York: Russell Sage.
- Harper, S. R. (2012). *Black male student success in higher education: A report from the national Black male college achievement study*. Philadelphia: University of Pennsylvania, Center for the Study of Race and Equity in Education.
- Harrell, S. P. (2000). A multidimensional conceptualization of racism-related stress: Implications for the well-being of people of color. *American Journal of Orthopsychiatry*, 70(7), 42-57.
- Hertz, T. (2005). Rags, riches, and race: The intergenerational economic mobility of Black and White families in the United States. In S. Bowles, H. Gintis, & M. Osbourne (Eds.), *Unequal chances: Family background and economic success* (165-91). New York: Russell Sage Foundation; Princeton, NJ: Princeton University Press.
- Hill, R. (2003) *The strength of Black families*. Maryland: University Press of America.
- Hughes, D., Rodriguez, J., Smith, E. P., Johnson, D. J., Stevenson, H. C., & Spicer, P. (2006). Parent's ethnic-racial socialization practices: A review of research and directions for future study. *Developmental Psychology*, 42(4), 747-70.
- Kozol, J. (1992). *Savage inequalities*. New York: Harper Perennial.
- . (2005). *The shame of the nation*. New York: Three Rivers Press.
- Jencks, C., & Phillips, M. (1998). The Black-White test score gap: An introduction. In C. Jencks & M. Phillips (Eds.), *The Black-White test score gap* (pp. 1-51). Washington, DC: Brookings Institute Press.
- Marshall, C., & Rossman, G. B. (2006). *Designing Qualitative Research* (4th ed). Thousand Oaks, CA: Sage.
- Marshall, S. (1995). Ethnic socialization of African American children: Implications for parenting, identity development, and academic achievement. *Journal of Youth and Adolescence*, 24(5), 377-96.
- Massey, D. S. (2006). Social background and academic performance differentials: White and minority students at selective colleges. *American Law and Economics Review*, 8(2), 390-409.
- Massey, D. S. (2007). *Categorically unequal*. New York: Russell Sage Foundation.
- Massey, D. S. & Denton, N. A. (1993). *American apartheid*. Cambridge, MA: Harvard University Press.
- Mayer, S. E., & Jencks, C. (1989) Growing up in Poor Neighborhoods: How Much Does it Matter? *Science*, 243(92), 1441-1445.
- McGee, E. O. (in press). Growing Up Black and Brilliant: *Counterstorytelling* of two mathematically high achieving college students. To appear in J. Leonard, & D. B. Martin (Eds.), *Beyond the Numbers: Shaping Policy Discourse Vis-à-vis the Brilliance of Black Children in Mathematics*. Charlotte, NC: Information Age Publishing.
- . (2012). 'What Does Race Have to Do with Math?' Relationships between Racial-Mathematical Socialization, Mathematical Identity, and Racial Identity. Commentary on English-Clarke, Slaughter-Defoe, and Martin. In Slaughter-Defoe D.T. (ed.), *Racial Stereotyping and Child Development*. Contributions to Human Development, vol 25. Basel, Switzerland: Karger.
- . (2009). *Race, identity, and resilience: Black college students negotiating success in mathematics and engineering*. Unpublished doctoral dissertation, University of Illinois, Chicago.
- McGee, E. O., & Spencer, M. B. (2012). Theoretical Analysis of Resilience and Identity: An African American Engineer's Life Story. In E. Dixon-Román, & E. W. Gordon (Eds.),

- Thinking Comprehensively About Education: Spaces of Educative Possibility and Their Implications for Public Policy* (161–78). New York, NY: Routledge.
- McGee, E. O., & Martin, D. B. (2011). "You would not believe what I have to go through to prove my intellectual value!": Stereotype management among academically successful Black mathematics and engineering students. *American Education Research Journal*, 48(6), 1347–1389.
- McWhorter, J. H. (2000). *Losing the Race: Self-Sabotage in Black America*. New York: The Free Press.
- Miller, D. B. (1999). Racial socialization and racial identity: Can they promote resiliency for African American Adolescents? *Adolescence*, 34(9), 493–501.
- Morenoff, J. D., Sampson, R. J., & Raudenbush, S. W. (2001). Neighborhood Inequality, Collective Efficacy, and the Spatial Dynamics of Urban Violence. *Criminology*, 39(3), 517–59.
- Moynihan, D. P. (1965). *The Negro family: The case for national action*. Washington, DC: Office of Policy Planning and Research, U.S. Department of Labor.
- National Center for Education Statistics (2004/06). *Beginning Postsecondary Students Longitudinal Study Data Analysis System*. Washington, D.C.: National Center for Education Statistics.
- National Research Council. (2011). *Successful K-12 STEM Education: Identifying Effective Approaches in Science, Technology, Engineering, and Mathematics*. Committee on Highly Successful Science Programs for K-12 Science Education. Board on Science Education and Board on Testing and Assessment, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.
- National Science Board. (2008). *Science and engineering indicators 2008* (Volume 1, NSB 08-01; Volume 2, NSB 08-01A). Arlington, VA: National Science Foundation.
- . (2010). *Science and engineering indicators 2010 (NSB 10-01)*. Arlington, VA: National Science Foundation.
- Neblett, E. W., Jr., Philip, C. L., Cogburn, C. D., & Sellers, R. M. (2006). African American adolescents' discrimination experiences and academic achievement: Racial socialization as a cultural compensatory and protective factor. *Journal of Black Psychology*, 32(2), 199–218.
- Obama, B. H. (2008). "A More Perfect Union." Constitution Center, Philadelphia, Pennsylvania.
- O'Conner, C., Lewis, A., & Mueller, J. (2007). Researching "Black" educational experiences and outcomes: Theoretical and methodological considerations. *Educational Researcher*, 36(9), 541–52.
- Orr, A. J. (2003). Black-White differences in achievement: The importance of wealth. *Sociology of Education*, 76(4), 281–304.
- Ou, Y., & McAdoo, H. P. (1993). Socialization of Chinese American children. In H. P. McAdoo (Ed.), *Family ethnicity: Strength in diversity* (245–70). Thousand Oaks, CA: Sage Publications.
- Pattillo, M. (2005). Black middle class neighborhoods. *Annual Review of Sociology*, 31(2), 305–29.
- . (2008). *Black on the Block: The Politics of Race and Class in the City*. Chicago, IL: University of Chicago Press.
- Perry, T., Steele, C., & Hillard, A. (Eds.) (2003). *Young, Gifted, and Black: Promoting High Achievement Among African American Students*. Boston: Beacon Press.
- Peters, M. (1985). Racial socialization of young Black children. In H. Pipes McAdoo & J. L. McAdoo (Eds.), *Black children: Social, educational, and parental environments* (159–74). Beverly Hills, CA: Sage.
- Price, D. V., & Wohlford, J. K. (2005). Equity in educational attainment: racial, ethnic, and gender inequality in 50 states. In G. Orfield, P. Martin, & C. Horns (Eds.), *Higher education and the color line* (59–81). Cambridge, MA: Harvard Educational Press.
- Quillian, L. (2006). New Approaches to Understanding Racial Prejudice and Discrimination. *Annual Review of Sociology*, 32(7), 299–328.
- Quillian, L., & Pager, D. (2001). Black Neighbors, Higher Crime? The Role of Racial Stereotypes in Evaluations of Neighborhood Crime. *American Journal of Sociology* 107(3), 717–67.
- Sampson, R. J., & Raudenbush, S. W. (2005). Neighborhood stigma and the perception of disorder. *Focus*, 24(1), 7–11.
- Sampson, R. J. (2004). "Seeing Disorder." Neighborhood Stigma and the Social Construction of Broken Windows. *Social Psychology Quarterly*, 67(4), 319–42.
- Sanders, M. (1997). Overcoming obstacles: Academic achievement as a response to racism and discrimination. *Journal of Negro Education*, 66(1), 83–93.
- Schott Foundation. (2010). Yes we can: The Schott 50 state report on public education and Black males. Retrieved April 3, 2013 from <http://www.schottfoundation.org/publications-reports/#opportunity>.
- Sellers, R. M., Caldwell, C. H., Schmeelk-Cone, K. H., & Zimmerman, M. A. (2003). Racial identity, racial discrimination, perceived stress, and psychological distress among African American young adults. *Journal of Health and Social Behaviors*, 44(3), 302–17.
- Sellers, R. M., Copeland-Linder, N., Martin, P. P., & Lewis, R. L. (2006). Racial identity matters: The relationship between racial discrimination and psychological functioning in African American adolescents. *Journal of Research on Adolescence*, 16(2), 187–216.
- Sharkey, P. T. (2006). Navigating Dangerous Streets: The Sources and Consequences of Street Efficacy. *American Sociological Review*, 71(3), 826–46.
- Spencer, M. B. (2012). "What Does Race Have to Do with Math?" Relationships between Racial-Mathematical Socialization, Mathematical Identity, and Racial Identity. Commentary on English-Clarke, Slaughter-Defoe, and Martin. In Slaughter-Defoe D.T. (ed.): *Racial Stereotyping and Child Development. Contributions to Human Development*, vol 25 (87–89). Basel, Switzerland: Karger.
- . (2008a). Lessons learned and opportunities ignored post-Brown v. Board of Education: Youth development and the myth of a colorblind society. *Educational Researcher*, 37(5), 253–66.
- . (2008b). Phenomenology and Ecological Systems Theory: Development of Diverse Groups. In W. Damon & R. Lerner (Eds.), *Child and adolescent development: An Advanced course* (Chap. 19), (pp. 696–735). New York: Wiley Publishers.
- . (2006). Phenomenology and Ecological Systems Theory: Development of Diverse Groups. In W. Damon & R. Lerner (Eds.), *Handbook of Child Psychology* (6th ed.), vol. 1, Chap. 15, Theory Volume (pp. 829–93). New York: Wiley Publishers.
- . (1985). Cultural cognition and social cognition as identity factors in Black children's personal-social growth. In M. B. Spencer, G. K. Brookins, & W. R. Allen (Eds.), *Beginnings: The social and affective development of Black children* (pp. 215–30). Hillsdale, NJ: Erlbaum.
- Spencer, M. B., Dupree, D., & Hartmann, T. (1997). A phenomenological variant of ecological systems theory (PVEST): A self-organization perspective in context. *Development and Psychopathology*, 9(7), 817–33.

- Spencer, M. B., Dupree, D., Tinsley, B., McGee, E. O., Hall, J., Fegley, S. G., & Elmore, T. G. (2011). Resistance and resiliency in a color-conscious society: Implications for learning and teaching. In K. R. Harris, S. Graham, T. Urdan (Eds.), C. B. McCormick, G. M. Sinatra, & J. Sweller (Assc. Eds.), *APA educational psychology handbook: Vol. 1. Theories, constructs, and critical issues* (461–94). Washington, DC: American Psychological Association.
- Spencer, M. B., Harpalani, V., Cassidy, E., Jacobs, C., Donde, S., Goss, T., Miller, M.-M., Charles, N., Wilson, S. (2006). Understanding vulnerability and resilience from a normative development perspective: Implications for racially and ethnically diverse youth (Chap. 16). In D. Chicchetti and E. Cohen (Ed.) *Handbook of Developmental Psychopathology* (Vol. 1, pp. 627–72). Hoboken, NJ: Wiley Publishers.
- Stevenson, H. C., Cameron, R., Herrero-Taylor, T., & Davis, G. Y. (2002). Development of the Teenager Experience of Racial Socialization Scale: Correlates of race-related socialization frequency from the perspective of Black youth. *Journal of Black Psychology*, 28(8), 84–106.
- Stevenson, H. C., & Arrington, E. G. (2009). Racial/ethnic socialization mediates perceived racism and identity experiences of African American students. *Cultural Diversity and Ethnic Mental Health*, 15(2), 2009.
- U.S. Department of Education. (2008). *2006–2007 Federal Pell Grant Program End-of-Year Report*. Washington, D.C.
- . (2008). *Foundations of Success: Final Report of the National Mathematics Advisory Panel*. Washington: U.S. Government Printing Office.
- Waites, C. (2009). Building on strengths: Intergenerational practice with African American families. *Social Work*, 54(3), 278–87.
- Weinger, S. (1998). Poor children “know their place”: Perceptions of poverty, class, and public messages. *Journal of Sociology and Social Welfare*, 25(2), 100–118.
- Wilson, W. J. (1996). *When Work Disappears: The World of the New Urban Poor*. New York: Knopf.
- . (2003). Race, Class and Urban Poverty: A Rejoinder. *Ethnic and Racial Studies*, 26(3), 1096–1114.
- Wong, C., Eccles, J., & Sameroff, A. (2003). The influence of ethnic discrimination and ethnic identification on African American adolescents’ school and socioemotional adjustment. *Journal of Personality*, 71(5), 1197–1232.
- Zimmerman, M. A., Bingenheimer, J. B., & Behrendt, D. E. (2005). Natural Mentoring Relationships. In D. L. Du Bois and M. J. Karcher, (Eds.), *Handbook of Youth Mentoring*, (pp. 143–57). Thousand Oaks, CA: Sage.

## NOTES

1. African Americans and Blacks are used interchangeably in this chapter. The terms are inclusive of all people of African descent in the United States.
2. Low-income status is defined as a single person with an annual income of \$10,830 or for a family of four, \$22,050, according to 2009 Federal Poverty Guidelines.

# 14

## Human Trafficking in the United States

### Globalization’s Impact on Dispossessed, Dominated, and Discarded Populations

Steven E. Lize and M. Pippin Whitaker

A human trafficking operation that lasted fourteen years in Florida came to an end in 2006 when a federal judge convicted Ron Evans Sr. for keeping homeless men in indentured servitude. His human trafficking scheme was a family operation. The judge also convicted Evans’ wife, Jequita, and his son, Ron Evans Jr. The Evans family employed the workers in cabbage fields and potato packing plants in Florida and vegetable farms in North Carolina. These workers were not undocumented foreign migrants; they were African American citizens. Ron Evans picked up people from homeless shelters in cities: New Orleans, Tampa, and Miami. He offered them employment and housing. Once at the labor camps, Evans kept the workers’ minimum-wage pay to cover charges for lodging, food, crack cocaine, and alcohol he provided at inflated prices. For several years, Evans shuffled workers early in the morning to the farm fields and late in the evening back to the labor camp. The captive men picked potatoes that went to make snack food and cabbage and peppers that went to grocery stores. The wages were never sufficient to pay off the debts. Evans supplied the workers’ chemical addictions to keep them in debt. He deducted the debts from their paychecks each pay day, sometimes withholding it all and offering “advances” instead. Workers felt trapped and unable to leave.

This vignette illustrates the connection between patterns of social inequality and systems of oppression. This profound violation of human rights is being perpetrated in cities, suburbs, and rural areas of America. Yet it is invisible to the general public even as it generates millions of dollars for criminals and legal enterprises that benefit indirectly. Criminal perpetrators exploit the oppressed seeking to improve their life chances (Bales & Lize, 2005). The men Evans exploited had the characteristics of typical human trafficking victims. The people most vulnerable to trafficking are of low socio-economic status and are willing to work in jobs within economic sectors