

From Stereotype Threat to Stereotype Management: Successful Blacks and Latinos in Science and Mathematics

I am examining the experiences and academic and career decisions of 60 STEM Black and Latino advanced college students, who are expected to realize their ambitions in those fields. One of the major goals is to understand more about why so few academically successful Black and Latino college students are pursuing graduate education or careers in their respective or STEM related disciplines. To determine if their career thinking is different from students who are not typically stereotyped negatively, a comparison group of Asian/Asian American students was drawn from mathematics and physical science programs. Comparisons will be made of both the responses and the pattern of change over time of underrepresented and Asian students. The proposed research would reveal the thinking that goes into students' academic and career decisions and how those decisions have been shaped by prior, sometimes racialized, experiences.

I am using two different interpretative frames to study the postbaccalaureate education or career decision processes of these students. Identity and career development literature aims to explain the process through which a) academic and career interests develop, b) educational and career choices are made and c) the impact of one's identity on these decisions. Identity development theories, more specifically science, mathematics, racial, and other identities, will help me explain students' self-efficacy beliefs, educational or professional outcome expectations, attitudes and self concepts which in turn affect motivation, choices and behaviors. In particular, Spencer's (2006) phenomenological variant of ecological systems theory, will aid in describing life- course human development *within* context. This context comprises the interaction of identity, experience and culture across three racial groups and also for integration of social, political and cultural issues with developmental processes, with identity emanating from a cultural-ecological perspective (Spencer, 2006).

The second major lens for this research is the phenomenon of stereotype threat and another phenomenon that resulted from my dissertation research entitled stereotype management. With stereotype threat, underrepresented students experience the threat of stereotypes and as a result underachieve, whereas with stereotype management, students experience the threat or reality of a stereotype and achieve to prove the stereotype wrong. In my dissertation I introduced stereotype management to explain resilience and success in mathematics and engineering among 23 Black college students from four Midwestern universities. Life-story interviews revealed that these students achieved their academic success based on different motivations and responses to both perceived and real racism. Described as a tactical response to the ongoing presence of stereotype threat and racial discrimination, stereotype management emerged along overlapping paths of racial, gender, and mathematics identity development. I further demonstrated that although stereotype management allows for engineering and mathematics success,

these students maintained an intense and perpetual state of awareness that their Blackness is undervalued in engineering and mathematics contexts. With development over time and maturity, the students progressed from a more fragile form of resilience, characterized by an attempt to prove stereotypes wrong, to a more robust form, characterized by a desire to serve as a role model. The first form of resilience is due to external motivators, where the stereotypes remain central. The second is due to internal motivations, where the stereotypes are transcended, and, though they persist, are not deterministic of failure nor are positioned as a reason to succeed. My initial findings on stereotype threat and management illuminated their importance, and convinced me of the need for further testing of a larger, more diverse sample of students of color.