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Explaining Race Differences in Academic Performance: The Role of Perceived Expectations & Outcome Valence

Devin Christopher Houston
Wright State University

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EXPLAINING RACE DIFFERENCES IN ACADEMIC PERFORMANCE: THE ROLE
OF PERCEIVED EXPECTATIONS & OUTCOME VALENCE

A thesis submitted in partial fulfillment of the
requirements for the degree of
Master of Science

By

DEVIN CHRISTOPHER HOUSTON
B.A., Winston-Salem State University, 2012

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WRIGHT STATE UNIVERSITY
GRADUATE SCHOOL

August 26, 2016

I HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER MY SUPERVISION BY Devin Christopher Houston ENTITLED Explaining Race Differences in Academic Performance: The Role of Perceived Expectations & Outcome Valence BE ACCEPTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF Master of Science.

Corey E. Miller, Ph.D.
Thesis Director

Scott Watamaniuk, Ph.D.
Graduate Program Director

Debra Steele-Johnson, Ph.D.
Chair, Department of Psychology

Committee on
Final Examination

Corey E. Miller, Ph.D.

Nathan A. Bowling, Ph.D.

Debra Steele-Johnson, Ph.D.

Robert E. W. Fyffe, Ph.D.
Vice President for Research and
Dean of the Graduate School

ABSTRACT

Houston, Devin Christopher. M.S., Department of Psychology, Wright State University, 2016. Explaining Race Differences in Academic Performance: The Role of Perceived Expectations & Outcome Valence.

Differences between whites and blacks in academic performance are well documented in the research literature. Past research has focused more on stable factors, such as personality and cognitive ability, to try to explain race and gender differences. However, past research has not focused enough on the examination of malleable and socially influenced factors, such as valence of education and perceived parental and friend expectations. In addition, differences between the academic performances of certain groups might not be due to race but due to factors that covary with race. These factors may be unaccounted for while race is being used as a proxy variable. This research examined malleable factors that might explain race differences in academic performance that might be mistakenly attributed to more stable factors. Results indicated Perceived Expectation and Valence of Education measures fully supported and correlated positively with final course grades, while failing as proxy variables for race.

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I. INTRODUCTION AND PURPOSE

Differences between whites and blacks, as well as males and females, relating to academic performance, are well documented in the research literature (Mattern & Patterson, 2013). Researchers have proposed to explain these differences and have obtained varying levels of empirical support. Past research has focused more on stable factors, such as personality and cognitive ability, to try to explain race and gender differences. However, prior research has focused too much on stable factors and not enough on the examination of more malleable and socially influenced factors, such as valence of education and perceived parental and friend expectations. In addition, differences between the academic performances of certain groups might not be due to race at all but might be due to others factors that covary with race such as socio-economic status. My research examined malleable factors that affect academic performance factors that might explain race and gender differences in academic performance that might be mistakenly attributed to more stable factors.

Group Differences in Achieving Academic Potential

Prior background research pertaining to race has shown that African-Americans are less likely to achieve their full academic potential (Cleary, 1968; Mattern & Patterson, 2013). Mattern and Patterson (2013) revealed differences between whites and blacks on academic performance by conducting a study that involved over 400,000 college undergraduates matriculating for the first time in 2006, 2007, or 2008. White-to-

black comparisons, as well as white-to-Hispanic and Hispanic-to-black comparisons, were examined for first-year GPA, high school GPA, and SAT scores (math, verbal, and critical reasoning tests). Results showed that white students had higher average scores than black and Hispanic students on all three measures.

In addition to race, Mattern and Patterson (2013) found differences between men and women. Women outperformed men in the educational setting and had higher average first-year college GPA, high school GPA, and SAT writing test scores. African-American women appeared to perform better than African-American men in an educational setting. Differences in academic achievement between African-American women and men suggest that Black-White group differences are likely not entirely due to race, and so further research is needed.

Although differences in academic achievement between African-Americans and Whites, as well as Men and Women are well documented, research has attempted to explain these differences but has not arrived at a full explanation. My research focused on more malleable and less stable characteristics than the past literature. Past research has shown that stable individual characteristics such as personality and cognitive ability are related to academic achievement, along with somewhat stable factors such as academic locus of control, self-efficacy, and intrinsic motivation. One line of research examining both the situation and the context is stereotype threat (e.g., Steele & Aronson, 1995). However, this research has concluded that the factors that cause stereotype threat are inherent when comparisons between groups are made (Sackett et al., 2004).

My research expanded on the literature by examining individual differences that are more malleable or influenced by the situation, i.e., expectations of parents and friends as well as valence of education. One potential explanation for differences in achievement

between groups is variation in perceived expectations and valence of education. Groups that face cultural barriers might not achieve maximal potential participation in the labor force and therefore might not achieve certain benefits of education, such as class mobility, to the same extent as other groups. Although the effects of race and gender are intertwined and cannot truly be separated, barriers to participation in the labor market might have had differential effects on these groups' perceived valence of the benefits of education. In addition, my research examined expectations of parents and friends with the goal of determining whether the difference between groups might not actually be due to race or gender but to differences in valence of education and expectations.

Existing Factors Affecting Academic Performance

Before shifting focus to my research, it was important to review the existing literature on factors that can affect academic performance. It was not feasible to study individual differences in academic achievement without first having considered sub-group differences. Sub-group differences in outcomes are well documented (Mattern & Patterson, 2013), and individual differences are used to help explain sub-group differences. I did not attempt to explain existing sub-group differences in the current research, not because they do not exist or are unimportant, but because the goal was to first determine whether my explanations explain any variance.

Personality Factors

Researchers have linked personality traits to academic performance (O'Connor & Paunonen, 2006; Poropat, 2009). McCrae and Costa (1987) proposed the Big Five Factors to measure personality: openness, conscientiousness, extraversion, agreeableness, and neuroticism. Conscientiousness describes personality traits related to being hardworking, punctual, dutiful, and self-disciplined. Conscientiousness is a good

predictor of GPA for both high school and college as well as for job performance (Barrick, Mount, & Judge, 2001; Nofle & Robbins 2007). Researchers have suggested high school GPA is not a perfect predictor of college grades because college has more autonomy and conscientiousness is more predictive of performance when one has autonomy (Barrick & Mount, 1991).

In addition, researchers have examined differences in personality traits between whites and blacks, as well as differences between men and women, along with interaction effects to help predict academic performance. Steele-Johnson and Leas (2013) found that of the Big Five traits, agreeableness, conscientiousness, and neuroticism all accounted for unique variance for women in predicting GPA. However, for men in general, only extraversion and agreeableness accounted for unique variance in GPA. In addition, significant interaction effects involving both personality and race were found. Agreeableness appeared to have a stronger relationship with GPA for African-American women compared to white women. Extraversion and openness appeared to have a stronger relationship with GPA for African-American men compared to white men. Not only do personality traits predict academic performance, they also predict student attitudes toward attaining a college education (Steele-Johnson, Narayan, & Steinke, 2013). Steele-Johnson et al. (2013) found that three of the Big Five Factor (openness = .23, $p < .01$; conscientiousness = .26, $p < .01$; agreeableness = .37, $p < .01$) significantly correlated with academic attitudes toward a college education.

Cognitive Ability

Another strong predictor of academic performance as well as job performance is general cognitive ability (Neisser et al., 1996). Indeed, ample research has demonstrated the effects of cognitive ability on academic performance. Cognitive ability addresses an

individual's capacity and propensity to think, reason, and solve problems. Cognitive ability is one of the best predictors of academic performance and correlates significantly with academic performance at about .50 (Neisser et al., 1996). For the purposes of my research, I did not include specific hypotheses concerning cognitive ability or conscientiousness, as the consensus of the literature is that they both correlate with academic performance. However, I used them as potential moderators and control variables for my research. Moving away from stable traits, such as personality and cognitive ability, brings us to motivational factors such as Locus of Control (Trice, 1985).

Motivational Factors

Academic locus of control. Locus of Control addresses the extent to which people feel they have control over situations in their lives. Academic locus of control addresses the extent to which a student feels that s/he has control over his/her own academic success (Trice, 1985; Mooney et al., 1991). A person with an internal locus of control feels she or he has a direct influence on his or her own performance and success. A person with an external locus of control feels that his/her achievement and success is not determined by him/herself but is influenced by external factors (Trice, 1985).

Low scores on this scale suggest that the participant has an internal locus of control. Individuals with lower locus of control should have higher GPAs because an internal locus of control means that people, or students, feel like they are in control of the events or outcomes affecting them (Trice, 1985). Higher scores on this scale suggest that participants have an external locus of control, and research has shown that individuals with external locus of control have lower GPAs (e.g., Trice, 1985). Another motivational concept is self-efficacy.

Self-efficacy. Self-efficacy is defined as the beliefs people have about their ability to complete tasks (Bandura, 1986). Academic self-efficacy refers to self-assessed competence in an academic setting (Lent, Brown & Larkin, 1984). One of the important aspects of self-efficacy is that these beliefs are task specific (Riggs et al., 1994). Substantial research has supported the conclusion that self-efficacy beliefs significantly correlate with academic performance and achievement (e.g., Wood & Locke, 1987). Individuals with strong self-efficacy beliefs might be more motivated to start and complete tasks (Diefendorff & Chandler, 2011).

Past research examining the effects of self-efficacy has shown that self-efficacy correlates significantly with performance on a task (e.g., Chemers, Li-tze Hu, & Garcia, 2001; Lent, Brown & Larkin, 1984). Other research, using a longitudinal within subject approach, has shown that self-efficacy may be less of a predictor of performance in the future and more of a measure of the reflection of past performance for an individual (Diefendorff & Chandler, 2011; Heggstead & Kanfer, 2005). These findings are consistent with prior research by Bandura (1986, 1998) that suggested that past experience influences self-efficacy more than other factors (Diefendorff & Chandler, 2011).

Self-efficacy is based in part on experience and tied to specific outcomes (Diefendorff & Chandler, 2011). However, research has shown also that others can influence individuals' self-efficacy beliefs, which Bandura (1986) referred to as persuasion. Therefore, my research focused on expectations a student perceived his/her parents and friends had about him or her as well as expectations a student had regarding him/herself.

Intrinsic motivation and aspirations. Intrinsic motivation, coined by Ryan and Deci (2000), is another motivational concept that researchers have linked to academic performance. Intrinsic motivation is motivation for a task derived from an individual's own pleasure or interest. Extrinsic motivation refers to the motivation that comes from gaining some type of external reward (Ryan and Deci, 2000). When applied to academics, intrinsic motivation might refer to learning and doing well in school simply for the enjoyment of the pursuit of knowledge whereas extrinsic motivation might refer to doing well in school because it could lead to a better job or entrance into a graduate school. Whereas intrinsic motivation occurs when a student is learning for the sake of learning, my research focused on learning that is instrumental to achieving greater success in life through careers, college degrees, and social mobility, i.e., extrinsic motivation.

Finally, academic or educational aspiration is defined as “the amount of academic education and success a person would like to attain (Boxer et al., 2011).” Aspirations are similar to goals and can play a major part in motivation, completion of education, and grades. Prior research has indicated that for minority students there are at least two factors that contribute to educational aspirations (Hawley, Larson, & Daniel, 1996). These factors include mother's education, which was positively correlated with educational aspirations, and academic comfort (Hawley, Larson, & Daniel, 1996). Hansen and Campbell (1985) created the Academic Comfort scale, a subscale of the Strong Interest Inventory, to measure comfort in academic environments (Hawley, Larson & Daniel, 1996). Hansen and Campbell found that students with lower academic comfort scores tend to have lower mean cumulative grade point averages (Hawley, Larson, & Daniel, 1996).

Stereotype Threat

Another factor examined in relation to subgroup differences in academic performance is stereotype threat. Indeed, a common explanation for lower academic performance is stereotype threat (Steele & Aronson, 1995). Stereotype threat is encountered when a person fears “conforming to a negative stereotype about his or her own group (Steele & Aronson, 1995), causing anxiety that impairs subsequent performance.” In regard to academic performance, African-Americans or Blacks (which is inclusive of all who define themselves as such) may be preoccupied with fears of failing and confirming the negative stereotype commonly held about their group, which could result in diminished mental resources allocated to achieving academic goals. Research on stereotype threat has shown that other groups, such as women, fall prey to stereotype threat (Stoet & Geary, 2012). However, recently, researchers have begun to question the amount of influence stereotype threat has on achievement (Sackett et al., 2009).

An Expectancy Theory Approach to Understanding Race Effects in Education and Achievement

In contrast to previous research that largely has concentrated on relatively stable personal attributes or individual differences, my research focused mainly on more malleable factors, such as perceived parental and friend expectations and valence of education. Research has suggested that more stable factors such as personality or cognitive ability correlate significantly with course grades and GPA (Neisser et al., 1996). However, this prior research has had limited success at illuminating the causes of black-white differences in academic performance.

My research used Vroom's (1964) expectancy theory, specifically the expectancy and valence components, as a framework. Vroom described expectancy as beliefs that behavior or actions can bring about a desired outcome and valence as the attractiveness or importance of outcomes (Vroom, 1964). My research addressed expectancy in terms of parental and friend perceived expectations of academic achievement and valence in terms of the value or importance associated with a college education.

Expectations of Academic Success

Expectancy is the belief that one's effort will result in attainment of the desired performance goal (Vroom, 1968). Like self-efficacy, the Expectancy Theory deals with the motivation and goals one might have. Expectancies, which may be referred to as expectations, can be influenced by many things including personal factors, such as self-esteem, locus of control, past experiences, and success and failures. Research has shown that expectancies are valid predictors of goal attainment (e.g., Van Eerde & Thierry, 1996).

Self-expectations. It is important to examine first an individual's self-expectations. Self-expectations are expectancy beliefs that address a person's beliefs or expectations about a obtaining a performance goal (Mitchell, 2008). Self-expectations and Bandura's (1986) concept of self-efficacy are two concepts that are very similar, so much so that they are often undistinguishable. Both concepts deal heavily on the relationship between effort and performance, and both concepts share many of the same influences (Dieffendorff & Chandler, 2011). So, for the sake of the current study instead of using the term self-efficacy, self-expectations will be used instead. Again, while the focus of the study is not on the beliefs a person has about themselves, but rather the perceived expectations they believe other have, it is still important to include a measure

of self-expectations in the study. Based on prior research (e.g., Van Eerde & Thierry, 1996), I expected that self-expectations would be related to academic performance.

Hypothesis 1a: Self-expectations will correlate positively with course grade.

Perceived parental expectations. Because individuals often do not know someone else's expectations, individuals might infer the expectations of others by using their own perceptions. Perceived expectations address an individual's perception of the expectations of others. Researchers have not examined thoroughly the effects of perceived parental expectations. Wood, Kurtz-Costes and Copping (2011) found that evaluations of perceived parental expectations is related to the college outcomes of their children. Parental expectations are defined as the expectations parents have regarding their children's postsecondary education outcomes (Wood et al., 2011). The researchers found positive correlations between youths' perceptions of parental expectations and parent's actual expectations with the educational aspirations of the youths.

In other research, Gonzales et al. (1996) explored the importance of parental influence while examining the effects of family, peer, and neighborhood influences on academic performance. The study followed 120 (78 female and 42 male) African American middle and high school students for one year. Maternal support and peer support were examined in relation to the students' academic performance, as well as income, parental education, and the number of parents in the home. The authors showed that maternal and peer support were significantly correlated with academic performance although GPAs of the women were influenced more strongly by peer expectations than maternal expectations. Similarly, Wentzel (1998) examined the relationship between middle school students' school motivation and perceived social support. School motivation was examined in terms of academic goals and social goals, and perceived

social support was examined in terms of teacher support, peer support, and parental support in the form of family cohesion. Results from the Wentzel (1998) study showed that family cohesion correlated positively with students' performance and mastery goal orientations, school related interests, and academic GPA. Thus, on the basis of prior research, I expected that students' perceptions of parental expectations would be related to students' academic performance.

Hypothesis 1b: Perceived father expectations will correlate positively with course grade.

Hypothesis 1c: Perceived mother expectations will correlate positively with course grade.

Friend influences and perceived friend expectations. My research built on Wentzel (1998) by examining perceived expectations held by college students.

Moreover, I built on Wentzel's research by distinguishing between perceived social support received from peers versus friends. Friends are the people you choose to interact with and form relationships with due to some common interest whereas peers are people with whom an individual shares some general characteristic (e.g., classmates) and interacts with but may not have a relationship with outside of the classroom. Wentzel examined the perceived social support of peers (defined as the students in a student/participant's class). I examined the perceived social support from individuals that students identified as friends.

Social influence from friends is an important factor that should be examined when researching factors that influence academic performance. Prior research has provided evidence supporting relationships between peers' and classmates' influence and academic performance. Researchers have examined these relationships in kindergarten,

elementary, middle school, and high school. Research has shown that friend and peer acceptance in these groups correlate positively with students remaining in school and grades (Wentzel & Caldwell, 1997).

There are several theories and models addressing peer influences on students (Hoxby & Weingarth, 2005). Some models include the “Bad Apple” model, which posits that one “bad” student can hurt the outcomes of other students; “The Shining Light” model, which posits that one amazing student can help encourage and inspire the other students to do better; “The Boutique Model”, which posits that students who are surrounded by peers who share similar characteristics will have higher academic achievement; and “The Rainbow Model”, which posits that students perform best when they are surrounded by and have to adjust to different types of students. Existing research has shown that the boutique method seems to be one of the more effective models for increasing a student’s academic performance through peer influence methods (Hoxby & Weingarth, 2005).

To examine these theories and models, Hoxby and Weingarth (2005) acquired data on third through eighth graders from Wake County (North Carolina) and examined student test scores on the state’s end of grade tests (EOGs), as well as measures of race, gender, and initial test scores. Hoxby and Weingarth were able to show that students, at least those in the extremes of initial achievement (higher and lower), benefit most when surrounded by other students similar to them.

In similar research, Mounts and Steinberg (1995) examined the effects of peer and friend influence on academic performance, as well as drug use, in ninth through eleventh graders. In order to measure peer influences, students were instructed to name their five closest friends. Researchers used the first friend listed as the students’ “closest friend”.

Results for the correlation analysis showed that students' GPAs correlated significantly with their friends' GPA.

Although a large body of research exists examining social influences for K-12 students, there has been less research on social influences and the relationship between peers' or friends' influence and academic performance for students in college. Steinberg, Dornbusch, and Brown (1992) found that peers were more influential in a student's day-to-day behaviors in school when compared to parents. These day-to-day behaviors included: spending time on homework, classroom behavior, and whether students enjoyed coming to school. However, in relation to students' long-term educational plans, parents were found to be more influential than peers (Steinberg, Dornbusch, & Brown, 1992).

It makes sense that peers or friends might be a greater source of influence on college students because they are around each other not only in school but outside of the classroom as well. Thus, college students might respond to a greater extent to the influences of peers and friends when compared to K-12th grade students. Indeed, the Posse Foundation has demonstrated positive social influence at the college level (Posse Foundation Website). Created by Dr. Deborah Bial of Harvard University, the Posse Foundation is an organization that strives to encourage academic success by sending students to college in groups, or "posses", for social support. In its 25 years, the organization has served over 3,000 students and has a 90 percent graduation rate.

The success of the Posse organization supports the idea that positive social influences are important to academic success. Whereas my research did not address the number of friends a student has supporting him/her in college, I did examine perceived friend expectations, i.e., the support that students believe they receive from their friends,

in relation to college and academic success. Such influences potentially have an impact on a student's educational success.

Research demonstrating that peer or friend involvement and influence affect academic performance (e.g. Wentzel & Caldwell, 1997; Wentzel, 1998) suggested the need for my research addressing the effects of perceived peer or friend expectations on academic performance. I did not gather data from actual peers and friends of but instead examined the perceptions individuals had regarding their friends' expectations for the individuals' academic success and performance.

Hypothesis 1d: Perceived friend expectations will correlate positively with course grade.

Valence of Education and Achievement

I proposed that there are differences in how much importance individuals place on education and how these differences affect subsequent educational goals and performance. For example, it is likely that students who are surrounded by positive friends and friends that value education would have higher grades. To help explain this idea, I used the valence concept from Vroom's (1964) expectancy theory. Valence is described as "an individual's perception of the reward or outcome that might be obtained by performing effectively" (Lawler & Suttle, 1973). The more attractive or important the situation or outcome, the more likely it is that the individual will expend effort to obtain a goal. For example, parents might promise their children that if they get all As on their report cards the parents will take the children to Disney World. In this scenario, the outcome would be going to Disney World, which for children would probably be seen as very attractive and valuable. Further, children might expend more effort to obtain this reward than a lesser reward, e.g., \$20. Whereas both outcomes/rewards are incentives,

the one that is more attractive or desirable should cause more effort to be exerted to obtain the goal.

Hollenbeck and Klein (1987) found that valence components can be influenced by individual differences, as well as circumstances created by the specific situation. Personal or individual influences described by Hollenbeck and Klein (1987) that affect valence include need for achievement, endurance, and commitment whereas situational factors that affect valence can include the reward structure, competition, or explicitness of a goal or outcome. Lawler & Suttle (1973) posited that rewards are important to the individual to the extent that rewards can fulfill the individual's needs, including security, social, esteem, or self-actualized needs.

Research has shown valence to be an important influence on goal choice and subsequent attainment (Hollenbeck & Klein, 1987). The importance or attractiveness of an educational outcome can affect the amount of effort a student puts into a task. Therefore, an attractive or important desired outcome, such as graduating from college, might make a student want to put forth the effort to do well in school. I expected that students who value a college education would have higher course grades compared to those who do not.

Hypothesis 2: Valence of education will correlate positively with course grade.

Race as a Proxy Variable

One final issue to address relates how race has been examined in relation to academic success. Specifically, race is used often as a proxy or placeholder variable in research studies (Schulman et al., 1995; Winker, 2004). Proxy variables are variables that are used in the place of other variables that are not being measured at the time. In many studies, race is measured because it is easily measured, and the variables that

should be measured are not because they are difficult to measure. For example, race could be a proxy variable for socioeconomic or other social factors. Thus, researchers might not be sure of what they are truly measuring when they assess race (Wang & Sue, 2005). Researchers found that in many cases race has been a proxy for some socioeconomic factors, which include economic, demographic, educational, occupational, and cultural qualities (Schulman et al., 1995).

Moreover, race itself is very difficult to define and conceptualize. There are many different definitions for race, ranging from "an ethnic classification, subdivided in the U.S. into five categories, according to origin [...]" (Segen, 1992) to "an ethnic stock, or division of mankind" (Taylor, 1988). LaVeist (1994) found that the Oxford Dictionary defined race as, "each of the major divisions of humankind, having distinct physical characters, [as well as] a group of people sharing the same culture, history, language, etc." Behavioral, social, cultural, genetic, and physical properties help define race (LaVeist 1994). Because there are multiple factors used to define race, researchers have to define what they mean by their race variable, which can be different depending on the researcher as well as the groups they include in their research. These differences in the definition of race, as well as the fact that these definitions change over time, make race an arbitrary concept. In addition, Wang and Sue (2005) found that researchers used race interchangeably with other terms such as ethnicity, national origin, etc.

Not only are researchers defining race differently, but research has shown that participants who are required to self-report their race also differ in how they define this arbitrary term (Wang & Sue, 2005). Further, participants respond differently to the same question at different times (Wang & Sue, 2005). My research investigated the use of race as a proxy variable that stands in the place of different socioeconomic factors as well as

the newly created perceived social expectation factors and the valence of education factor.

Prior research has documented black-white differences (e.g., Mattern & Patterson, 2013), and I expected to replicate those effects. However, I hypothesized that black-white differences in academic performance are in reality due to factors other than race. In contrast, most previous research has explained differences as due to racial factors (e.g., Mattern & Pattern, 2013). In my research, I attempted to explain black-white difference in academic performance through the variables developed specifically for my study: perceived parental and friend expectations and valence of education. This would mean that race is not the true variable of interest but a proxy variable for causal variables that have not yet been measured in existing research. I expected that race would decrease in importance as a predictor after entering expectations and valence into the model. In addition, I expected that perceived expectations and valence would account for unique variance in course grades after controlling for other factors examined in past research (e.g., conscientiousness, cognitive ability).

Hypothesis 3: Caucasian students will have higher course grades than black students.

Hypothesis 4a: Perceived expectations will account for unique variance in course grades after controlling for High School GPA and Conscientiousness.

Hypothesis 4b: Race will not account for significant variance in course grades after controlling for High School GPA, Conscientiousness and perceived expectations (related to Mother, Father, and Friend).

Hypothesis 5a: Valence of education will account for unique variance in course grades after controlling for High School GPA, Conscientiousness and perceived expectations (related to Mother, Father, and Friend).

Hypothesis 5b: Race will not account for significant variance in course grades after controlling for High School GPA, Conscientiousness and perceived expectations (related to Mother, Father, and Friend) and valence of education.

II. METHOD

Study 1: Pilot

A pilot study was conducted to refine the newly created perceived expectation scales and the valence of education scale based on psychometric properties of the items.

Participants

The data for the pilot study was collected from a sample of college students taking a psychology course from a medium-sized Midwestern university. Sixty-five participants were used to test the reliability of the original measures that would be used in Study 2, which was the main study.

Expectation Measures

Expectations are the beliefs that one's effort would result in attainment of a desired performance goal (Vroom, 1968). Expectancy, or expectation, is one component of Vroom's VIE theory (Vroom, 1968). In the current study, the desired performance goal related to academic success. In addition, this study examined the perceived expectations the participant believes others (parents and friends) may have regarding the participant's academic success.

Perceived parental (mother/ father) expectations. I used two perceived parental expectation measures, assessing mother expectations and father expectations. Both measures consisted of 16 items developed for the current study and used a response format of 1 to 5, with 1 being strongly disagree and 5 being strongly agree. Items for each

of the scales were averaged together. Higher scores indicate more positive perceptions of the expectations of parents. The items are in Appendix A.

Perceived friend expectations. The perceived friend expectation measure consisted of 15 original items and used a response format of 1 to 5, with 1 being strongly disagree and 5 being strongly agree. Items for the scale were averaged together. Higher scores indicate more positive perceptions of the expectations of friends. The items are in Appendix B.

Valence of Education Measure

The concept of valence stems from the valence component of Vrooms Expectancy Theory (Vroom, 1968). Valence is described as “an individual’s perception of the reward or outcome that might be obtained by performing effectively” (Vroom, 1968), which is one of the main questions we are trying to examine, i.e., the relationship between valence and academic performance. In the context of the current study, the valence of education is a scale measuring how much a student values educational attainment, as well as the importance of gaining a college education or degree. Valence of education was measured by having participants answer a questionnaire that consists of 35 items. A few of the items in the scale, located in Appendix C, were taken from Fortier (1995) and were modified to reflect the theme of the current research of college academic achievement whereas the remaining items were developed originally for use in the current study. Responses to the valence of education scale ranged from 1 to 5, with 1 being strongly disagree through 5 being strongly agree. Items for the scale were averaged together. Higher scores indicate a greater understanding for the valence or importance of an education, compared to lower scores.

Procedure

Participants completed the valence of education and perceived scales using Qualtrics. Students earned extra-credit points applied toward the psychology course they were enrolled in for participating in the pilot study.

Results

For the pilot study, I conducted internal consistency reliability to ensure that items for each measure was related to each other and was measuring one construct. The Cronbach's Alpha was .89 for the newly created 12-item version of the perceived father expectation measure and .91 for the 12-item version of the mother perceived expectations. Four items had to be removed because they negatively affected reliability from each perceived parental expectation measure. The reliability analysis for the newly created 12-item version of the perceived friend expectation measure resulted in a Cronbach's Alpha of .83. Similar to the perceived parental expectation measures, the perceived friend expectation measure had 4 items removed. The reliability analysis conducted for the valence of education measure resulted in a Cronbach's Alpha of .92. In addition, for the valence of education measure none of the 35 items needed to be removed because of poor fit.

Study 2: Main Study

The purpose of Study 2, which was the main study, was to test the main hypotheses. The measures examined included the perceived expectation measures, valence of education measure, socioeconomic status items, and other existing measures, such as high school GPA and conscientiousness that correlate with academic performance.

Participants

The data for this study was collected from a sample of college students from a medium-sized Midwestern university. The college students in this sample consisted of 592 undergraduate students from introductory psychology courses. Of these participants, 369 were female, 218 were male, 113 were African-American (33 male), 411 were Caucasian.

Measures

Self-expectation items. Self-expectations are attempts to examine the extent to which a person believes or expects something to happen. For the purpose of the current research, the self-expectation items were developed for the current study and examined participants' self-expectations for academic success in college. Responses to the self-expectation measure ranged from 1 to 5, with 1 being strongly disagree to 5 being strongly agree. Items for the measure were averaged. Higher scores indicated more positive expectations for oneself when compared to low scores. Items are shown in Appendix D.

Perceived parental expectations. The perceived parental expectation measures consisted of 12 items. Responses for the perceived mother and father expectation scales ranged from 1 to 5, with 1 being strongly disagree through 5 being strongly agree. Items for each of the scales were averaged together. Higher scores indicate more positive perceptions of the expectations of parents. Items are shown in Appendix E. The perceived parental expectation items were used twice, once to assess the perceived parental expectations for the participants' mothers and once for their fathers. Results from pilot data revealed a Cronbach's Alpha of .89 for the perceived father expectation scale and .91 for the perceived mother expectation scale.

Perceived friend expectation. The perceived friend expectation measure consisted of 12 items, which pilot data revealed had a Cronbach's Alpha of .83. The response format was 1 to 5, with 1 being strongly disagree and 5 being strongly agree. Items for the scale were averaged together. Higher scores indicate more positive perceptions of the expectations of friends. Items are shown in Appendix F.

Valence of education scale. The valence of education scale assessed how much a student valued educational attainment, as well as the importance of gaining a college education or degree. Valence of education was measured using 35 items, which pilot data revealed had a Cronbach's Alpha of .92. Responses to the valence of education scale ranged from 1 to 5, with 1 being strongly disagree through 5 being strongly agree. Items for the scale were averaged together. Higher scores indicate a greater understanding for the valence or importance of an education, compared to lower scores. Items are shown in Appendix G.

Participant's demographic items. The Participants' Demographic Items are shown in Appendix H.

Big five-personality scale. I assessed the Big Five Personality factors: conscientiousness, openness, neuroticism, extraversion, and agreeableness (McCrae & Costa, 1987). I used 50 items from the International Personality Item Pool (IPIP) to assess each factor. Items are shown in Appendix I.

Academic performance. I operationally defined academic performance as Introduction to Psychology course grades. The reason that course grades in one specific class were used was because more reliable results can be achieved when using the grades for one particular course that all of the participants completed rather than overall GPAs where not all of the classes overlap, due to participants being in different majors and

years in college (Barrett and Dipenet, 1997; Miller et al. 1998). As control variables, I used self-reported GPA, as well as academic record information received from the Office of Institutional Research. Also, I used high school GPA as a control variable. Items are shown in Appendix J.

Parent demographic items. Parent demographic items were included to enable tests of alternative explanations. Items are shown in Appendix K.

Friend demographic items. Friend demographic items were included to enable tests of alternative explanations. Items are shown in Appendix L.

Socioeconomic factor item. Socioeconomic factor items are included to enable tests of alternative explanations. Participant responses to the socioeconomic factor items were verified by checking participant responses against information provided by the Office of Institutional Research at Wright State University. Items are shown in Appendix M.

Duckworth's GRIT items. Duckworth created the 12-item GRIT scale that measured perseverance and stamina in obtaining long-term goals (Duckworth and Quinn, 2009). The GRIT scale was included to enable tests of alternative explanations. Items are shown in Appendix N.

Depression items. The depression items were taken from IPIP and contain items from The Center for Epidemiologic Studies Depression Scale (Radloff, 1977). The depression items were included to enable tests of alternative explanations. Items are shown in Appendix O.

Procedure

For the main study, participants answered questions from an online survey using the Qualtrics survey software. Participants were reminded in the instructions that

“anonymity would be provided and student identification numbers would only be used to gather socioeconomic information.” Students earned extra-credit points applied toward the psychology course they were enrolled in for participating in the pilot study.

III. RESULTS

Reliability of Measures

Previously, in the pilot study, I conducted internal consistency reliability to make sure that individual items are correlated with in a scale and are measuring one construct. Also I conducted reliability analyses for my original measures. The reliability analysis conducted for the valence of education measure resulted in a Cronbach's Alpha of .92. The final Cronbach's Alpha for the father expectation scale was .89, whereas the mother expectation alpha was .91. The reliability analysis for the perceived friend expectation measure resulted with a Cronbach's Alpha of .83. Similar to the perceived parental expectation measures, the perceived friend expectation measure had 4 items removed also. The results from the reliability analyses indicate that my measures have very good and very acceptable reliability

Hypothesis Testing

Hypothesis 1 stated that the three perceived expectation measures (father, mother, and friend), as well as self - expectations would correlate positively with the final course grade. Hypothesis 2 stated that the valence of education measure would correlate positively with the final course grade. I tested Hypotheses 1 and 2 by examining the bivariate correlations between the final course grade with perceived father expectations, perceived mother expectations, perceived friend expectations, participant self-expectations, and valence of education. I observed significant correlations for all of the relationships I tested, (which can be located in Table 1). For Hypothesis 1a, perceived

father expectations had a significant positive correlation with final course grade ($r = 0.22$, $p < .01$). For Hypothesis 1b, perceived mother expectations had a significant positive correlation with final course grade ($r = 0.17$, $p < .01$). For Hypothesis 1c, perceived friend expectations had a significant positive correlation with final course grade ($r = 0.22$, $p < .01$). Finally, Hypothesis 1d, participant self-expectations had a significant positive correlation with final course grade ($r = 0.34$, $p < .01$). For Hypothesis 2, valence of education had a significant positive correlation with final course grade ($r = 0.21$, $p < .01$).

Hypothesis 3 stated that Caucasian students would have significantly higher course grades than African - American students. I tested Hypothesis 3 by examining the independent t-test between the final course grade of Caucasian students and the final course grade of African - American students (which can be located in Table 2). The results of the t-test confirmed that there is a significant difference in final course grades, $t(457) = 5.44$, $p < 0.001$, between Caucasian students ($M = 3.3$, $SD = 1.23$) and African-American students ($M = 2.6$, $SD = 1.08$). In addition to conducting the t-test between the two groups, I also calculated a Cohen's d of 0.67 and an effect size of .32.

Hypotheses 4 and 5 were tested by means of hierarchical regression (which can be located in Tables 3 and 4, respectively). Hypothesis 4a, which can be located in table 3, stated that the three perceived expectation measures would account for unique variance in course grade after controlling for high school GPA and conscientiousness. Hypothesis 4b, which can be located in table 3, stated that race would not account for significant variance after controlling for high school GPA, conscientiousness, and the perceived expectation measures. Hypothesis 5a, which can be located in table 4, stated that the valence of education measure would account for unique variance in course grade after

controlling for high school GPA, conscientiousness, and the perceived expectation measures. Finally, Hypothesis 5b, which can be located in table 4, stated that race would not account for significant variance after controlling for high school GPA, conscientiousness, the three perceived expectation measures, and the valence of education measure.

I tested Hypothesis 4a, using hierarchical regression, by entering high school GPA, college GPA, and conscientiousness into step 1. Then I entered my three perceived expectation measures (father, mother, and friend) into step 2. The results of the hierarchical regression indicated that the three perceived expectation measures did not contribute significant variance after controlling for high school GPA and conscientiousness ($\Delta R^2 = .01, p < .07$), thus not supporting Hypothesis 4a.

I tested Hypothesis 4b, using hierarchical regression, by entering high school GPA, college GPA, and conscientiousness into step 1. Then I entered my three perceived expectation measures (father, mother, and friend) into step 2. Then I entered race into step 3. The results of the hierarchical regression indicated that race accounted for significant variance in course grade after controlling for high school GPA, conscientiousness, and the three perceived expectation measures ($\Delta R^2 = .01, p < .01$), Hypothesis 4b was not supported.

I tested hypothesis 5a, using hierarchical regression, by entering high school GPA, college GPA, and conscientiousness into step 1. Then I entered my three perceived expectation measures (father, mother, and friend) into step 2. Finally, valence of education was entered into step 3. The results of the hierarchical regression indicated that the valence of education accounted for to significant variance in course grade after

controlling for high school GPA, conscientiousness, and the perceived expectation measures ($\Delta R^2 = .02, p < .01$), thus supporting hypothesis 5a.

I tested Hypothesis 5b, using hierarchical regression, by entering high school GPA, college GPA, and conscientiousness into step 1. Then I entered my three perceived expectation measures (father, mother, and friend) into step 2. The valence of education measure was entered into step 3 and finally, race was entered into step 4. The results of the hierarchical regression indicated that race accounted for significant variance in course grade after controlling for high school GPA, conscientiousness, the three perceived expectation measures, and valence of education ($\Delta R^2 = .01, p < .01$). Hypothesis 5b was not supported.

IV. DISCUSSION

Study Purpose

Differences in academic performance between white and black students are reported and well documented in numerous research findings and articles (Mattern & Patterson, 2013). Many theories and ideas have attempted to explain these differences and have had varying levels of empirical support. Past research, conducted by other researchers (e.g. Bandura, 1986; McCrae and Costa, 1987; Neisser et al., 1996; Trice, 1985), has focused more on stable factors such as personality and cognitive ability to try to explain race and gender differences. The current research attempted to explain the differences in academic performance between white and black students by means of exploring more malleable and socially influenced factors. Such factors included perceived father, mother and friend expectations, as well as a valence of education factor.

In addition, the current research attempted to explain these differences by showing that race is a proxy variable due to these perceived expectation variables and the valence of education variable. Proxy variables are variables that are used in the place of other variables that are not being measured at the time. In many of these studies, race is measured because it is more easily measured than the variables that truly should be measured. Although the hypotheses examining race as a proxy variable were not supported, post-hoc analyses revealed that the effect of race decrease to non-significant when controlling for ACT scores.

These preliminary results could be the basis of future research involving race as a proxy variable. The fact that ACT scores but not perceived expectations reduce the effect of race sends a message. That is subgroup differences might be due to differences in the quality of education and not genetics.

Theoretical, Practical, and Social Implications

My results suggested both theoretical and practical implications on the way we examine, and try to predict, the academic performance of college students. Whereas one of my hypotheses was partially supported, three hypotheses were fully supported. These hypotheses at least show that my newly created measure (the valence of education measure), although not be able to help support two of the hypotheses, still can be used to help predict course grade performance. These findings also suggest that these perceived expectation measures may also correlate well with and predict other outcomes besides course grade performance.

As expected, I found that the perceived parental and friend expectation measures correlated positively with final course grade. However, what was not expected was for the perceived expectation measures to also correlate significantly with conscientiousness, as shown on table 1. In addition, it was surprising to find that self-expectations had much stronger correlations, compared to conscientiousness, with final course grade, college GPA, and high school GPA. These findings suggested that it is possibly that conscientiousness might not be very important when trying to predict course grade outcomes. It could be that the expectations we have for ourselves may be more important for predicting outcomes.

Through use of independent t-tests, I found that Caucasian students on average have higher course grades than African – American students. This finding seems to

support well-documented findings about the race gap between African – American and Caucasian students in academic Performance.

Hypotheses 4 and 5 did not turn out as expected. The perceived expectation measures and my valence of education measure did provide unique variance after controlling for high school GPA and conscientiousness, race still provided incremental variance and continued to be significant. Even though race did not drop out in significance when controlling for high school GPA and conscientiousness, it did however drop out, in additional follow up analyses, when student ACT scores were controlled. One implication for race dropping out when controlling for ACT scores, as compared to High school GPA, could be that the ACT is a standardized test designed to be taken by all students nationally and not determined by where you went to high school and how conscientious a student is. I believe high school GPA is determined by factors that include: a student's work ethic, Teacher's scoring method, and any other standards set by that individual college. However, the ACT's scoring method is the same for all students no matter where they test.

There are a few social implications my perceived father, mother, and friend expectation measures provide. To reiterate from previous sections in the document, I did not actually measure the actual expectations parents and friends have on a student's academic success. I merely examined what a student thought their parents and friends' expectations about the student's academic performance were. Therefore, regardless of actual negative or positive expectations, a student who has the belief that parents and friends have positive expectations about their academic success can really influence a student's academic performance.

In addition, my results indicated that perceived parental expectations did not predict as well as expected and predicted less than both the valence of education measure and the perceived friend expectation measure. It is possible that the reason for this result could be due to the fact that because our participants are now in college their thoughts of parental expectations are not as strong or as important as they once were while growing up. The reason could also be due to the fact that friends may be just more influential than parents. It would be interesting to see if the results for the perceived parental expectations of participants who live at home with their parents are different then the results of participants who do not live at home. Unfortunately for the current data, current living environment (i.e. living with parents vs. not living with parents) was not a question asked to participants.

Limitations

The main study had some limitations. One of the main limitations was the sample size of the number of African-American participants. For the most part, the study involved examining race and some of the differences between Black students and White students in academic performance. The sample size for White students was sufficient, whereas the sample size for Black students could have been better. However, given the demographics of the Mid-Western University it was not at all surprising that the black participant pool would be quite small in comparison to the white population. In addition, when further separated by race and gender, the sample size limitations of African-American participants become even more apparent. Of the 113 African-American participants, only 33 were male, while 80 were female. These sample sizes are not at all great when trying to examine the intersectionality of race and gender. Another limitation

involves the lack of other variables that may be more important than the created measures in terms of supporting the notion that race is a proxy variable.

The main study was unable to find support that race is a proxy variable for the perceived parental expectations, perceived friend expectations, nor valence of education. These measures were unable to support the notion, that simply means that race can still be a proxy variable for variables that have not yet been controlled for. However, the main study has shown that with the perceived expectation measures and the valence of education measure, race has become less of an important factor or variable, but again we must keep in mind that it would appear that the most important variables have not been measured yet. The main study also showed that the main measures were not as important as I initially believed.

Future Directions

Upon further analyses of the thesis data set, I was able to find some interesting effects that could make for interesting follow up future studies. One potential future direction study involves self-expectations. Self-expectations, which were the beliefs a person has about their own academic abilities, appear to be a very important component of a person's academic success. Using the data from the main study, Self-expectations were found to have had a much stronger correlation with grades than the correlation between conscientiousness and grades. In addition, after conducting a hierarchical regression analyses, time and time again Self-expectations account for unique variance above and beyond perceived parental expectations, perceived friend expectations, High school GPA, conscientiousness, valence of education, and even race. Implications from the analyses seem to illustrate the importance of Self-expectations.

Another future direction study involves examining gender differences. The main study was not interested in examining gender effects as it was examining race effects. Not only would gender differences be worth investigating, but the intersection of race and gender would be as well. Researchers have documented interesting findings about the intersection between race and gender, where members have identities in more than one major group. (Riegle-Crumb, 2006; Warikoo and Carter, 2009) With a larger sample size for African American males and females to go along with the sample sizes of White students I could begin to investigate these academic differences at a more sublevel than just differences between the genders or differences between the races. Upon some further follow up analyzes there does appear to possibly be some moderator effects involving gender. However, further analyzes and research will need to be conducted to fully examine these effects. Finally, other variables worth investigating in a future study include: gender, income levels, and the quality of the education of the participants in order for us to really determine what variables could be the real cause of the subgroup differences, and which are proxy variables.

Conclusions

My study had three main purposes, the first was to determine whether perceived parental and friend support, self- expectations would correlate positively with a student's course grade. The second main purpose was to determine whether a positive relationship between a student's valence of education and their final course grade. Finally, the third main purpose of my study was to see whether my perceived parental and friend expectations, and valance of education measure would help alleviate the effects of race on course grades. My results partially supported my proposed hypotheses. The perceived mother, father, and friend expectations, as well as the self-expectation measures were all

fully supported and all correlated positively with final course grades. While my hypotheses on race being used as proxy was partially supported.

Overall, this study adds to the scientific literature by raising questions regarding the impact that an individual's perception has on their ability to perform academically. Perceptions appear to be almost as important as a person's conscientiousness when performing academically. In addition, how much a person values education also appeared to be key in performance and doing well in a course. Finally, while the perceived expectation measures did not alleviate fully the effects on race being a proxy, race was weakened when those variables are controlled. This suggests that with the right variables present, future researchers may be able to account for race and eliminate its use as a proxy variable, as the present study was not able to address this issue.

V. REFERENCES

- Bandura, A. (1986). The explanatory and predictive scope of self-efficacy theory. *Journal of social and clinical psychology, 4*(3), 359-373.
- Barrett, G. V., & Depinet, R. L. (1991). A reconsideration of testing for competence rather than for intelligence. *American Psychologist, 46*(10), 1012.
- Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: a meta-analysis. *Personnel psychology, 44*(1), 1-26.
- Barrick, M. R., & Mount, M. K. & Judge, T. A. (2001). Personality and performance at the beginning of the new Millennium: What do we know and where do we go next? *International Journal of Selection and Assessment, 9*, 9-31. (11)
- Boxer, P., Goldstein, S. E., DeLorenzo, T., Savoy, S., & Mercado, I. (2011). Educational aspiration–expectation discrepancies: Relation to socioeconomic and academic risk-related factors. *Journal of adolescence, 34*(4), 609-617.
- Chemers, M. M., Hu, L. T., & Garcia, B. F. (2001). Academic self-efficacy and first year college student performance and adjustment. *Journal of Educational psychology, 93*(1), 55.
- Cleary, T. A. (1968). Test bias: Prediction of grades of Negro and White students in integrated colleges. *Journal of Educational Measurement, 5*, 115–124.
- Diefendorff, J. M., & Chandler, M. M. (2011). Motivating employees.
- Duckworth, A. L., & Quinn, P. D. (2009). Development and validation of the Short Grit Scale (GRIT–S). *Journal of personality assessment, 91*(2), 166-174.

- Fortier, M. S., Vallerand, R. J., & Guay, F. (1995). Academic motivation and school performance: Toward a structural model. *Contemporary educational psychology, 20*(3), 257-274.
- Gonzales, N. A., Cauce, A. M., Friedman, R. J., & Mason, C. A. (1996). Family, peer, and neighborhood influences on academic achievement among African-American adolescents: One-year prospective effects. *American journal of community psychology, 24*(3), 365-387.
- Hansen, J. L. C., & Campbell, D. P. (1985). Manual for the strong interest inventory. Palo Alto, CA: Consulting Psychologists Press. Hawks, B. K., & Muha, D. (1991). Facilitating the career development of minorities: Doing it differently this time. *The Career Development Quarterly, 39*(3), 251-260.
- Hawley, E., Larson, L. M., & Daniels, J. A. (1996). Predictors of educational aspirations among adolescent gifted students of color. *Journal of Career Development, 23*(2), 97-109.
- Heggstad, E. D., & Kanfer, R. (2005). The predictive validity of self-efficacy in training performance: little more than past performance. *Journal of Experimental Psychology: Applied, 11*(2), 84.
- Hollenbeck, J. R., & Klein, H. J. (1987). Goal commitment and the goal-setting process: Problems, prospects, and proposals for future research. *Journal of Applied Psychology, 72*(2), 212.
- Hoxby, C. M., & Weingarth, G. (2005). *Taking race out of the equation: School reassignment and the structure of peer effects*. Working paper.

- LaVeist, T. A. (1994). Beyond dummy variables and sample selection: what health services researchers ought to know about race as a variable. *Health services research, 29*(1), 1.
- Lawler, E. E., & Suttle, J. L. (1973). Expectancy theory and job behavior. *Organizational behavior and human performance, 9*(3), 482-503.
- Lent, R. W., Brown, S. D., & Larkin, K. C. (1984). Relation of self-efficacy expectations to academic achievement and persistence. *Journal of counseling psychology, 31*(3), 356.
- Mattern, K. D., & Patterson, B. F. (2013). Test of slope and intercept bias in college admissions: A response to Aguinis, Culpepper, and Pierce (2010) *Journal of Applied Psychology, 98*(1), 134-147.
- McCrae, R. R., & Costa, P. T. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of personality and social psychology, 52*(1), 81.
- Miller, C.E., Barrett, G.V., & Doverspike, D (1998). A Case study versus Science. Comments on Steinberg & Williams. *APA, 53*(5), 566-577.
- Mitchell, T. R. and Daniels, D. 2003. Motivation. *Handbook of Psychology. Two:10:223–254.*
- Mooney, S. P., Sherman, M. F., & Lo Presto, C. T. (1991). Academic Locus of Control, Self-Esteem, and Perceived Distance from Home as Predictors of College Adjustment. *Journal Of Counseling & Development, 69*(5), 445.
- Mounts, N. S., & Steinberg, L. (1995). An ecological analysis of peer influence on adolescent grade point average and drug use. *Developmental Psychology, 31*(6), 915.

- Neisser, U., Boodoo, G., Bouchard Jr, T. J., Boykin, A. W., Brody, N., Ceci, S. J., ... & Urbina, S. (1996). Intelligence: Knowns and unknowns. *American psychologist*, *51*(2), 77.
- Nofle, E. E., & Robins, R. W. (2007). Personality predictors of academic outcomes: big five correlates of GPA and SAT scores. *Journal of personality and social psychology*, *93*(1), 116.
- O'Connor, M. C., & Paunonen, S. V. (2007). Big Five personality predictors of post-secondary academic performance. *Personality and Individual differences*, *43*(5), 971-990.
- Poropat, A. E. (2009). A meta-analysis of the five-factor model of personality and academic performance. *Psychological bulletin*, *135*(2), 322.
- Radloff, L. S. (1977). The CES-D scale a self-report depression scale for research in the general population. *Applied psychological measurement*, *1*(3), 385-401.
- Riegle-Crumb, C. (2006). The path through math: Course sequences and academic performance at the intersection of race-ethnicity and gender. *American journal of education (Chicago, Ill.)*, *113*(1), 101.
- Riggs, M. L., Warka, J., Babasa, B., Betancourt, R., & Hooker, S. (1994). Development and validation of self-efficacy and outcome expectancy scales for job-related applications. *Educational and psychological measurement*, *54*(3), 793-802.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, *55*(1), 68.

- Sackett, P. R., Hardison, C. M., & Cullen, M. J. (2004). On interpreting stereotype threat as accounting for African American-White differences on cognitive tests. *American Psychologist*, *59*(1), 7.
- Sackett, P. R., Kuncel, N. R., Arneson, J. J., Cooper, S. R., & Waters, S. D. (2009). Does socioeconomic status explain the relationship between admissions tests and post-secondary academic performance? *Psychological bulletin*, *135*(1), 1
- Schulman, K. A., Rubenstein, L. E., Chesley, F. D., & Eisenberg, J. M. (1995). The roles of race and socioeconomic factors in health services research. *Health Services Research*, *30*(1 Pt 2), 179.
- Segen, J. C. *The Dictionary of Modern Medicine*. Park Ridge, NJ: The Parthenon Publishing Group, 1992.
- Steele-Johnson, D., & Leas, K. (2013). Importance of race, gender, and personality in predicting academic performance. *Journal of Applied Social Psychology*, *43*(8), 1736-1744.
- Steele-Johnson, D., Narayan, A., & Steinke, J. (2013). Academic attitudes and their antecedents. *Journal of Applied Social Psychology*, *43*(3), 498-506.
- Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*; *Journal of Personality and Social Psychology*, *69*(5), 797.
- Steinberg, L., Dornbusch, S. M., & Brown, B. B. (1992). Ethnic differences in adolescent achievement: An ecological perspective. *American psychologist*, *47*(6), 723.

- Stoet, G., & Geary, D. C. (2012). Can stereotype threat explain the gender gap in mathematics performance and achievement?. *Review of General Psychology, 16*(1), 93.
- Taylor, E. J. Dorland's Illustrated Medical Dictionary. 27th ed. Philadelphia: W.S. Sanders Company, 1988.
- Trice, A.D. (1985). An academic locus of control scale for college students. *Perceptual and Motor Skills, 61*(3f), 1043-1046.
- Van Eerde, W., & Thierry, H. (1996). Vroom's expectancy models and work-related criteria: A meta-analysis. *Journal of applied psychology, 81*(5), 575.
- Vroom, V. H. (1964). *Work and motivation*. New York, Wiley [1964].
- Vroom, V. H. (1968). *Work and motivation*. New York, Wiley [1968].
- Wang, V. O., & Sue, S. (2005). In the eye of the storm: race and genomics in research and practice. *American Psychologist, 60*(1), 37.
- Warikoo, N., & Carter, P. (2009). Cultural explanations for racial and ethnic stratification in academic achievement: A call for a new and improved theory. *Review of Educational Research, 79*(1), 366-394.
- Wentzel, K. R. (1998). Social relationships and motivation in middle school: The role of parents, teachers, and peers. *Journal of educational Psychology, 90*(2), 202.
- Wentzel, K. R., & Caldwell, K. (1997). Friendships, peer acceptance, and group membership: relations to academic achievement in middle school. *Child development, 68*(6), 1198-1209.
- Winker, M. A. (2004). Measuring race and ethnicity: why and how? *Jama, 292*(13), 1612-1614.

- Wood, D., Kurtz-Costes, B., & Copping, K. E. (2011). Gender differences in motivational pathways to college for middle class African American youths. *Developmental psychology, 47*(4), 961.
- Wood, R. E., & Locke, E. A. (1987). The relation of self-efficacy and grade goals to academic performance. *Educational and psychological measurement, 47*(4), 1013-1024.

Appendix A: Perceived Parental Expectation Items (Pilot Study)

Instructions: Answer the following statements using the scale from Strongly Disagree to Strongly Agree.

Perceived Mother Expectations

1. My mother expects me to graduate college
2. My mother expects me to do well in college
3. Education is very important to my mother
4. My education is very important to my mother
5. My mother has too many expectations for me
6. My mother encourages me to study for classes
7. How far in school do you think your mother expects you to go?
 - a. Some college-graduate school
8. My mother does not expect me to finish college
9. My mother has unrealistically positive expectations about my education
10. If I do not do well in school my mother will be disappointed in me
11. My mother is indifferent about my education and academic success
12. I believe my mother wants me to succeed
13. My mother believes in my ability to succeed academically
14. My mother has low expectations about my academic success
15. My mother does not expect me to succeed academically.

Perceived Father Expectations

1. My father expects me to graduate college
2. My father expects me to do well in college
3. Education is very important to my father
4. My education is very important to my father
5. My father has too many expectations for me
6. My father encourages me to study for classes
7. How far in school do you think your father expects you to go?
 - a. Some college-graduate school
8. My father does not expect me to finish college
9. My father has unrealistically positive expectations about my education
10. If I do not do well in school my father will be disappointed in me
11. My father is indifferent about my education and academic success
12. I believe my father wants me to succeed
13. My father believes in my ability to succeed academically
14. My father has low expectations about my academic success
15. My father does not expect me to succeed academically.

Appendix B: Perceived Friend Expectation Items (Pilot Study)

Instructions: Answer the following statements using the scale from Strongly Disagree to Strongly Agree.

1. My friends expect me to graduate college
2. My friends expect me to do well in college
3. Education is very important to my friends
4. My education is very important to my friends
5. My friends have too many expectations for me
6. My friends encourage me to study for classes
7. How far in school do you think your friends expect you to go?
 - a. Some college-graduate school
8. My friends do not expect me to finish college
9. My friends have unrealistically positive expectations about my education
10. If I do not do well in school my friends will be disappointed in me
11. My friends are indifferent about my education and academic success
12. I believe my friends want me to succeed
13. My friends believe in my ability to succeed academically
14. My friends have low expectations about my academic success
15. My friends do not expect me to succeed academically.

Appendix C: Valence of Education Items (Pilot)

Instructions: Answer the following statements using the scale from Strongly Disagree to Strongly Agree.

1. I am going to college only because it is expected of me
2. Just graduating college is more important to me than making good grades
3. Making good grades is very important to me
4. I am going to college because I think a college education will help me better prepare for the career I have chosen
5. I am going to college so I can get a better job
6. There are more important things than graduating from college
7. My education is my highest priority
8. I enjoy learning and am glad I chose to go to college
9. I am glad I chose to go to college
10. Currently I feel like going to college is a waste of time
11. I am highly motivated to do well in school
12. I am highly motivated to do well in school because it will lead to a better career
13. College education is important to success
14. Others have taught me the value of education
15. Education is the key to a better life
16. You can have a good career without having a college education
17. Most people I admire have college degree
18. Earning a college degree is my most important life goal.
19. Getting a college degree doesn't mean I will get a good job
20. Getting a college degree increases my chances at succeeding in life.

21. Going to college will pay off in the future
22. I know I must first go to college in order to live the life I want
23. Getting an education is the only way I know to better my life
24. I am glad I chose to go to college
25. College opens up future opportunities
26. It is important to choose to go to college
27. A college degree opens up future opportunities
28. People with college degrees have brighter future.
29. Choosing o go to college was a wise decision
30. I chose to go to college because I know it will help me in the long run
31. I chose to go to college because it will help me reach my dreams
32. I chose to go to college because I recognize the importance of getting an
education
33. I recognize the importance of getting an education
34. A successful career is an attractive outcome of getting an education.
35. An education is one of the most important things to obtain

Appendix D: Self-Expectation Items

Instructions: Answer the following statements using the scale from Strongly Disagree to Strongly Agree.

1. I expect to graduate college
2. I expect to do well in college
3. Education is very important to me
4. My education is very important to me
5. I do not expect to finish college
6. I have unrealistically positive expectations about my education
7. If I do not do well in school I will be disappointed in me
8. I am indifferent about my education and academic success
9. I believe in my ability to succeed academically
10. I have low expectations about my academic success
11. I do not expect to succeed academically.

Appendix E: Perceived Parent Expectation Items (Main Study)

Instructions: Answer the following statements using the scale from Strongly Disagree to Strongly Agree.

Perceived Mother Expectations

1. My mother expects me to graduate college
2. My mother expects me to do well in college
3. Education is very important to my mother
4. My education is very important to my mother
5. My mother has too many expectations for me
6. My mother encourages me to study for classes
7. How far in school do you think your mother expects you to go?
 - a. Some college-graduate school
8. My mother does not expect me to finish college
9. My mother has unrealistically positive expectations about my education
10. If I do not do well in school my mother will be disappointed in me
11. My mother is indifferent about my education and academic success
12. I believe my mother wants me to succeed
13. My mother believes in my ability to succeed academically
14. My mother has low expectations about my academic success
15. My mother does not expect me to succeed academically.

Perceived Father Expectations

1. My father expects me to graduate college
2. My father expects me to do well in college

3. Education is very important to my father
4. My education is very important to my father
5. My father has too many expectations for me
6. My father encourages me to study for classes
7. How far in school do you think your father expects you to go?
 - a. Some college-graduate school
8. My father does not expect me to finish college
9. My father has unrealistically positive expectations about my education
10. If I do not do well in school my father will be disappointed in me
11. My father is indifferent about my education and academic success
12. I believe my father wants me to succeed
13. My father believes in my ability to succeed academically
14. My father has low expectations about my academic success
15. My father does not expect me to succeed academically.

Appendix F: Friend Expectation Items (Main Study)

Instructions: Answer the following statements using the scale from Strongly Disagree to Strongly Agree.

1. My friends expect me to graduate college
2. My friends expect me to do well in college
3. Education is very important to my friends
4. My education is very important to my friends
5. My friends have too many expectations for me
6. My friends encourage me to study for classes
7. How far in school do you think your friends expect you to go?
 - a. Some college-graduate school
8. My friends do not expect me to finish college
9. My friends have unrealistically positive expectations about my education
10. If I do not do well in school my friends will be disappointed in me
11. My friends are indifferent about my education and academic success
12. I believe my friends want me to succeed
13. My friends believe in my ability to succeed academically
14. My friends have low expectations about my academic success
15. My friends do not expect me to succeed academically.

Appendix G: Valence of Education Items (Main Study)

Instructions: Answer the following statements using the scale from Strongly Disagree to Strongly Agree.

1. I am going to college only because it is expected of me
2. Just graduating college is more important to me than making good grades
3. Making good grades is very important to me
4. I am going to college because I think a college education will help me better prepare for the career I have chosen
5. I am going to college so I can get a better job
6. There are more important things than graduating from college
7. My education is my highest priority
8. I enjoy learning and am glad I chose to go to college
9. I am glad I chose to go to college
10. Currently I feel like going to college is a waste of time
11. I am highly motivated to do well in school
12. I am highly motivated to do well in school because it will lead to a better career
13. College education is important to success
14. Others have taught me the value of education
15. Education is the key to a better life
16. You can have a good career without having a college education
17. Most people I admire have college degree
18. Earning a college degree is my most important life goal.
19. Getting a college degree doesn't mean I will get a good job
20. Getting a college degree increases my chances at succeeding in life.

21. Going to college will pay off in the future
22. I know I must first go to college in order to live the life I want
23. Getting an education is the only way I know to better my life
24. I am glad I chose to go to college
25. College opens up future opportunities
26. It is important to choose to go to college
27. A college degree opens up future opportunities
28. People with college degrees have brighter future.
29. Choosing to go to college was a wise decision
30. I chose to go to college because I know it will help me in the long run
31. I chose to go to college because it will help me reach my dreams
32. I chose to go to college because I recognize the importance of getting an education
33. I recognize the importance of getting an education
34. A successful career is an attractive outcome of getting an education.
35. An education is one of the most important things to obtain

Appendix H: Participant Demographic Information

Instructions: Please provide the following information.

Age: _____

Classification:

Senior ___ Junior ___ Sophomore ___ Freshman ___

Major (please specify): _____

First Generation College Student Y/N

G.P.A.:

High School GPA: _____

ACT score: _____

If this is not your first semester:

College GPA: _____

If this is your first semester:

Expected or Midterm G.P.A. _____

Gender

Male ___ Female ___

Race

African-American ____ Asian-American ____ Hispanic ____

Native-American ____ White ____ other (please specify): _____

Socioeconomic Status Info:

Father's yearly Income \$ _____

Mother's Yearly Income \$ _____

Average # of hours you work during the week # _____

Number of hours worked by parents _____

Number of Relatives living at home _____

Age of parent's car _____

Living at home during college (Y) (N)

Appendix I: Big Five-Factor Items

Instructions: Answer the following statements about yourself using the scale from Strongly Disagree to Strongly Agree.

Extraversion:

1. Feel comfortable around people
2. Make friends easily
3. Am skilled in handling social situations
4. Am the life of the party
5. Know how to captivate people
6. Have little to say
7. Keep in the background
8. Would describe my experiences as dull
9. Don't like to draw attention to myself
10. Don't talk a lot

Agreeableness:

1. Have a good word for everyone
2. Believe that others have good intentions
3. Respect others
4. Accept people as they are
5. Make people feel at ease
6. Have a sharp tongue
7. Cut others to pieces
8. Suspect hidden motives in others
9. Get back at others

10. Insult people

Conscientiousness:

1. Am always prepared
2. Pay attention to details
3. Get chores done right away
4. Carry out my plans
5. Make plans and stick to them
6. Waste my time
7. Find it difficult to get down to work
8. Do just enough work to get by
9. Don't see things through
10. Shirk my duties
11. Don't quit a task before it is finished
12. Am a goal-oriented person
13. Finish things despite obstacles in the way
14. Am a hard worker
15. Don't get sidetracked when I work
16. Don't finish what I start
17. Give up easily
18. Do not tend to stick with what I decide to do

Openness:

1. Believe in the importance of art
2. Have a vivid imagination
3. Tend to vote for liberal political candidates
4. Carry the conversation to a higher level
5. Enjoy hearing new ideas
6. Am not interested in abstract ideas
7. Do not like art
8. Avoid philosophical discussions
9. Do not enjoy going to art museums
10. Tend to vote for conservative political candidates

Neuroticism:

1. Often feel blue
2. Dislike myself
3. Am often down in the dumps
4. Have frequent mood swings
5. Panic easily
6. Rarely get irritated
7. Seldom feel blue
8. Feel comfortable with myself
9. Am not easily bothered by things
10. Am very pleased with myself

Appendix J: Parent Demographic Items

Instructions: Answer the following statements using the scale from Strongly Disagree to Strongly Agree.

Mother Demographic Items:

1. In the past my mother has talked to me about going to college
2. My mother has discussed the importance of going to college
3. I feel supported by my mother
4. Back in high school my mother often discussed me going to college
5. While growing up, my mother was there to help me with school/homework
6. In the past my mother often stressed the importance of going to college
7. My mother is not supportive of my decision to go to college
8. Without the support of my mother I do not think I could make it through college
9. I update my mother on my progress/grades in college
10. Back in high school my mother primarily discussed me going to college
11. While growing up my mother primarily helped me with school/homework

Father Demographic Items:

1. In the past my father has talked to me about going to college
2. My father has discussed the importance of going to college
3. I feel supported by my father
4. Back in high school my father often discussed me going to college
5. While growing up, my father was there to help me with school/homework
6. In the past my father often stressed the importance of going to college
7. My father is not supportive of my decision to go to college

8. Without the support of my father I do not think I could make it through college
9. I update my father on my progress/grades in college
10. Back in high school my father primarily discussed me going to college
11. While growing up my father primarily helped me with school/homework

Both Parents Demographic Items:

1. Back in high school both of my parents equally discussed me going to college
2. Neither of my parents discussed me going to college
3. While growing up, both parents equally helped me with school/homework
4. Neither of my parents helped me with school/homework

Appendix K: Friend Demographic Items

Instructions: Answer the following statements using the scale from Strongly Disagree to Strongly Agree.

1. My friends look like me
2. I usually hang around people who look like me
3. I usually hang around people who are of a different ethnicity than me
4. The majority of my friends belong to a race that is different than my own
5. Back in high school my friends often discussed going to college
6. Back in high school my friends never really discussed going to college
7. My friends from high school are attending college
8. I feel supported by my friends
9. Without the support of my friends I do not think I could make it through college

Appendix L: Socioeconomic Status Items

Instructions: Please answer the frequency in which any of these have happened to your family when you were growing up, using the scale from Never to All the Time

1. Family evicted from home
2. Running water not functioning
3. Heating system not functioning
4. Electric not functioning
5. No food in house
6. Home locks not functioning
7. Utilities shut off for non-payment
8. Lived in the same home for more than 4 consecutive years
9. Leaking roof
10. Broken windows
11. Rodents
12. Non-functioning heaters
13. Nonfunctioning stoves
14. Peeling paint
15. Exposed wiring
16. Unsafe or unclean
17. Rats
18. Roaches
19. Windows covered with metal bars
20. Windows boarded up

21. Windows broken
22. Accepted charity for food
23. Received welfare

Instructions: Have any of the following happened to your family when you were growing up? (Check all that apply)

1. Purchased brand new home
2. Added on to home
3. Regular cleaning lady or maid service
4. Home chef
5. Granite countertops
6. Had my own desk
7. Had a tutor
8. Had horses
9. Had a nanny
10. Grandparents lived in same city or town

Instructions: Please answer the frequency in which any of these have happened to your family when you were growing up, using the scale from Never to All the Time

1. Spent time with grandparents
2. Mother depressed
3. Father depressed
4. Father absent
5. Mother absent
6. Father wasn't interested in me
7. Mother wasn't interested in me
8. Parents said education is key to future
9. Mother too stressed to care for me
10. Father too stressed to care for me
11. Went to counseling
12. Homeless
13. Parents rented our home
14. Parents owned our home
15. Moved
16. I feel lonely
17. European vacation
18. Vacationed in a foreign country
19. Have four or more bedrooms in my home
20. Family bought a brand new car
21. Bought a new car for me

22. Had my own car

23. Took ACT or SAT prep classes

Appendix M: Duckworth's GRIT Items

Instructions: Answer the following statements about yourself using the scale from Strongly Disagree to Strongly Agree.

1. I have overcome setbacks to conquer an important challenge.
2. New ideas and projects sometimes distract me from previous ones.*
3. My interests change from year to year.*
4. Setbacks don't discourage me.
5. I have been obsessed with a certain idea or project for a short time but later lost interest.*
6. I am a hard worker.
7. I often set a goal but later choose to pursue a different one.*
8. I have difficulty maintaining my focus on projects that take more than a few months to complete.*
9. I finish whatever I begin.
10. I have achieved a goal that took years of work.
11. I become interested in new pursuits every few months.*
12. I am diligent.

Duckworth, A.L., Peterson, C., Matthews, M.D., & Kelly, D.R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, 9, 1087-1101.

Appendix N: Depression Items

Instructions: Answer the following statements about yourself using the scale from Strongly Disagree to Strongly Agree.

1. I have a low opinion of myself
2. I feel desperate
3. I feel that my life lacks direction
4. I tend to feel very hopeless
5. I am sad most of the time
6. I generally focus on the negative side of things

Instructions: Answer the following statements about yourself based on the past couple of weeks, using the scale from Strongly Disagree to Strongly Agree.

In the past couple of weeks I...

1. Could not get going
2. Did not feel like eating, even though I should have been hungry
3. Enjoyed life
4. Felt depressed
5. Felt fearful
6. Felt happy
7. Felt hopeful about the future
8. Felt lonely

9. Felt sad
10. Felt that everything I did was an effort
11. Felt that I could not shake off the blues, even with help from my family or friends
12. Felt that I was just as good as other people
13. Felt that people disliked me
14. Had a poor appetite
15. Had crying spells
16. Had restless sleep
17. Had thoughts about death
18. Had trouble keeping my mind on what I was doing
19. Talked less than usual
20. Thought about killing myself
21. Thought that my life had been a failure
22. Was bothered by things that usually don't bother me
23. Was down in the dumps
24. Was told I wasn't acting like myself

Table 1

Descriptive Statistics and Intercorrelations for All Variables

	Mean	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Course Grade	3.16	1.18										
2. College GPA	2.48	0.96	0.83**									
3. HS GPA	3.13	0.61	0.48**	0.48**								
4. ACT Scores	20.96	4.15	0.53**	0.48**	0.56**							
5. Conscientiousness	3.55	0.51	0.22**	0.20**	0.18**	0.11**						
6. Perceived Father Expectations	4.33	0.61	0.22**	0.22**	0.22**	0.19**	0.36**					
7. Perceived Mother Expectations	4.44	0.59	0.17**	0.18**	0.20**	0.15**	0.42**	0.77**				
8. Perceived Friend Expectations	3.89	0.57	0.22**	0.23**	0.20**	0.15**	0.44**	0.56**	0.60**			
9. Self-Expectations	4.17	0.64	0.34**	0.32**	0.21**	0.11	0.57**	0.56*	0.61**	0.61**		
10. Valence of Education	4.04	0.58	0.21**	0.19**	0.14**	0.05	0.48**	0.51**	0.52**	0.56**	0.73**	

Note. * $p < .05$; ** $p < .01$.

Table 2
T-test result Table for Hypothesis 3

	<i>Mean</i>	<i>SD</i>	<i>N</i>	<i>t</i>	<i>df</i>
Caucasian	3.30	1.23	356	5.44*	457
African-American	2.62	1.08	103		

* $p < .01$

Table 3

Hierarchical Regression Table for Hypothesis 4

	β	R^2	ΔR^2
Step 1		0.283	0.283
HS GPA	0.437		
Conscientiousness	0.087		
Step 2		0.297	0.014
Perceived Father Ex.	-0.003		
Perceived Mother Ex.	0.006		
Perceived Friend Ex.	0.129*		
Step 3		0.310	0.014
Race	-0.120**		

Note. R^2 value is cumulative for all variables entered in each step.

* $p < .05$; ** $p < .01$.

Table 4

Hierarchical Regression Table for Hypothesis 5

	β	R^2	ΔR^2
Step 1		0.283	0.283
HS GPA	0.45		
Conscientiousness	0.06		
Step 2		0.297	0.014
Perceived Father Ex.	-0.02		
Perceived Mother Ex.	-0.03		
Perceived Friend Ex.	0.08		
Step 3		0.314	0.018
Valence of Education	0.16**		
Step 4		0.325	0.011
Race	-0.11*		

Note. R^2 value is cumulative for all variables entered in each step.

* $p < .05$; ** $p < .01$.