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Socio-Ecological Moderating Factors in the Grit-Academic Achievement Relationship

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SOCIO-ECOLOGICAL MODERATING FACTORS IN THE GRIT-ACADEMIC ACHIEVEMENT RELATIONSHIP

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ABSTRACT

There has been a recent focus in research on a concept that centers on an individual's ability to be persistent in the pursuit of their goals. This concept, referred to as *grit*, is an addition to the conversation about noncognitive measures that show promise to positively affect student academic performance. However, with the salient focus on the individual qualities that contribute to student success, it is important to avoid looking at these student qualities in isolation from the socio-ecological milieu (Ysseldyke, Lekwa, Klingbeil, & Cormier, 2012). Situating individual student qualities within Bronfenbrenner's socio-ecological framework can be particularly helpful when seeking ways to avoid a narrowed perspective and increase cultural competence in socio-emotional interventions. This could be achieved by exploring the connection between race and academic achievement through an individual's racial identity and the highly influential microsystem layer of adolescent peer influence. Critical Race Theory (CRT) situates this research within the need for educational research that elucidates student racial identity and its impact on academic performance. CRT posits that the racial achievement gap is fueled by a lack of understanding of race and the systemic factors that contribute to the gap (Taylor, 2006).

The present paper seeks to highlight the layered factors that can potentially help to shore this gap. Regression analysis was used to predict the moderating quality of racial identity factors, operationalized by the Multidimensional Inventory of Black Identity (MIBI), on the connection between grit and academic performance. Intraclass correlational analysis was used to analyze the connection between of peer dyads and racial identity and hierarchical linear modeling was

used to determine the moderating qualities of grit and racial identity, within the dyadic structure, on individual academic performance. Results did not indicate that the racial identity components moderate the grit-academic achievement connection, however, the racial identity quality of a shared minority experience showed predictive quality on academic performance. Results also indicate that significant variance in academic performance was accounted for by the dyadic peer structure. Results did not show that the significant dyadic dependence served as a moderating factor between grit and academic performance.

CHAPTER I

INTRODUCTION

There has been a recent focus in educational research on a concept that centers on an individual's ability to be persistent in the pursuit of their goals. This concept, referred to as *grit*, is an addition to the conversation about noncognitive measures that show promise in potentially shedding light on ways to bolster student academic performance (Tough, 2012; West, Kraft, Finn, Martin, & Duckworth, 2016). With the current educational landscape being heavily focused on accountability, testing, as well as social emotional learning standards, educational researchers are re-examining the definition of student competencies, and including grit in the conversation (Christensen & Knezek, 2014; Hochanadel & Finamore, 2015; West et al., 2016). However, with the ever-more salient focus on the individual qualities that contribute to student success, it becomes critical to avoid looking at these student qualities in isolation from the socio-ecological milieu.

Background

University of Pennsylvania's Angela Duckworth has explored the connection between grit and success, defining grit as "perseverance and passion for long-term goals" (Duckworth, Peterson, Matthews, & Kelly, 2007, p. 1087). Duckworth has looked at the grit-success relationship across a wide variety of groups including military cadets, spelling bee participants, and adolescent public school students. She found that grit has a substantial impact on a variety of successes and is a better predictor of student success than student IQ. Duckworth (2016) puts

forth that grit is made of four components–interest, practice, purpose, and hope. It is important to note that the nature of grit sets the construct apart from the term *resilience*. Resilience focuses more on traits that are "harnessed when adversity is present" (Ungar, 2011, p. 1). Grit looks not only at how an individual handles challenges but also how deliberate and consistent he or she is at working toward their goals.

Many schools, particularly charter schools such as the KIPP Network, have included grit as a component to their school curricula and in their evaluation of student progress. Using Duckworth's research on grit and Seligman's work on character strengths and virtues, KIPP's co-founders, David Levin and Michael Feinberg, included a character-strengths model that integrates grit in the KIPP network curriculum and assessments (Tough, 2011). There are KIPP report cards that include a grit metric defined as "finishing what one starts; completing something despite obstacles; a combination of persistence and resilience" and "finishes whatever he or she begins, tries very hard even after experiencing failure [and] works independently with focus" (KIPP report card, n.d.).

The recent re-examination of student competencies and emphasis on non-cognitive assessment has not gone without criticism, however. The term "noncognitive" has been criticized as being too broad to be useful and implies that there are "features of human behavior that are devoid of cognition" (Duckworth & Yeager, 2015). Although the term "noncognitive" is problematic, the utility of a measure that supplements testing outcomes related to IQ, aptitude and previously acquired skills is clear. Alternative terminology for "noncognitive" skills includes social and emotional learning (SEL) competencies, character skills, and character education. In 2008, the Character Education Partnership (CEP) divided character into two categories: core

ethical values and performance values (CEP, 2008). In essence, grit would be categorized as a performance value.

Further refining the concept of grit as a social emotional learning competency places the construct in the direct line of sight of school communities and educational policyholders who recently passed legislation mandating the implementation of social emotional learning standards in educational curricula. The Every Student Succeeds Act (ESSA), signed into law in December of 2015, highlights the importance of nonacademic factors as indicators of student success and encourages schools to foster effective learning environments and to help students develop relationship-building skills, among other goals. At the state level, several states have passed laws mandating the incorporation of SEL standards into state-level learning standards. Illinois was the first state to adopt SEL standards as a result of the Children's Mental Health Act of 2003. These 10 standards were developed alongside "goals, age-appropriate benchmarks, and performance descriptors" that help students build emotional self-awareness, empathy, and positive peer interactions and encourage responsible decision making and problem solving skills. (ISBE webpage, n.d.).

The intersection between state and federal legislation of SEL, accountability in schools, and the grit concept highlights the recent controversial notion that student grit could be evaluated and added to the compendium of tests in a school culture that some view as producing stressed teachers and students who are over-tested (Fleege, Charlesworth, Burts, & Hart, 1992; Sacks, 2000). Although some school systems have adopted the concept of grit as a success construct, critics of the use of the grit construct in assessments and in definitions of student success point out that much of the research tied to resilience and other related constructs such as grit is focused

on the individual instead of the systems-level ecological context in which the individual develops (Shaw, Taylor, McLean, & Swartout, 2016).

Of further consideration should be the divide between the federal and state legislation that focuses on SEL standards and the more socio-ecological positioned idea of school climate but that do not directly suggest how specific socio-ecological factors could moderate student's social emotional improvement. The issue, therefore, becomes, not only how do we position grit as a construct that can yield useful insight into potential student success but also how do we encourage the maintenance, or in some cases, the growth of grit when we know students do not exist in vacuum devoid of social interaction? To do this, moderators to the grit-to-academic success relationship must be identified. This pulls the onus away from the adolescent student to determine how to build and keep grit during integral and complex identity-forming years, and adds the more realistic, ecologically valid approach to look at environmental factors that can support the existence of grit.

Statement of the Problem

Several social scientists focusing on racial identity research have found that race serves as a protective factor or buffer for African Americans that influences behavior and psychosocial outcomes (Caldwell, Kohn-Wood, Schmeelk-Cone, Chavous, & Zimmerman, 2004; Cross, 1995). The present study combines Bronfenbrenner's socio-ecological framework, Duckworth's research on grit and the Critical Race Theory (CRT) assertion that racism is systemically pervasive and has continual, negative effects on the lives of individuals. This study attempts to provide insight on the socio-ecological factors that moderate grit. This intersection reflects a gap in the knowledge about how socio-ecological factors, such as racial

identity components, influence adolescent student grit. This also reflects an opportunity to further understand the underpinnings of grit outside the individual's own ability to develop and harness it as a point of leverage in goal attainment.

Exploring racial identity as a socio-ecological moderator in the grit-to-academic success relationship requires defining the key constructs that comprise racial identity. Racial identity has been conceptualized as a multidimensional construct that emerges through distinct developmental stages during adolescence. Much of the research on ethnic identity revolves around the process of development but there are models of ethnic identity such as Sellers' Multidimensional Model of Racial Identity (MMRI) that relate to the content of the multiple dimensions of ethnic identity.

The MMRI is designed to "articulate heterogeneity in the significance that African Americans place on race in defining themselves as well as in their definitions of what it means to be Black" (Scottham, Cooke, Sellers, & Ford, 2010, p. 23). A multidimensional approach provides a more nuanced approach to the content of ethnic identity; taking individual differences on the content of racial identity attitudes into account. The MIBI, developed by Sellers, Smith, Shelton, Rowley, and Chavous (1998) includes four dimensions: *salience, centrality, ideology* and *regard*. Taking this dimensional perspective on racial identity and applying it to the manner in which grit functions in relation to academic success, can help to develop a more nuanced view of how the dimensional components of racial identity interact to create race as a grit-to-academic success moderator.

Using a socio-ecological framework to further examine moderators of grit, this study examines the heavy influencers in an adolescent's life: other adolescents. As such, the present

study seeks to not only examine an individual's racial identity components in relation to grit and success but also how those components among the individual's school-based friends influence his or her own racial identity and influence the potential moderating relationship that racial identity has on an individual's grit-to-success relationship. This study also seeks to uncover the "contagious" nature of grit, that is, explore the connectedness of peers' grittiness.

In addition, the MMRI's *regard* component furthers the socio-ecological examination of grit and its racial identity-based moderators by allowing for the inclusion of this macrosystem factor. Further, examining how public regard is shaped by peers and how this component interacts with the grit-to-academic success relationship begins to complicate the idea of grit as a person-centered construct and situates it as a construct that can be influenced by forces outside of the individual, that is, the public's perception of one's racial identity.

Purpose Statement

The purpose of the present study is use a quantitative approach to analyze moderators that connect grit to academic success. This will involve collecting multidimensional racial identity data, demographic data, as well as grit scores and grades from a group of African American high school participants.

Significance of the Study

Taking on a more socio-ecological view of grit and exploring the system-level factors that moderate this construct can shed light on the variables that can predict an individual's propensity to build and sustain the grit-to-success connection. This sociological view also provides a more socially based picture of how grit is influenced by racial identity and how racial identity is influenced by peer interaction. Determining these levels of influence can serve

as a source of insight to sustain grit in students by determining how racial identity can moderate grit. In addition, this study can further the research on race as a protective factor and center race in the intervention research to nurture students' socio-emotional needs.

In addition to broadening the research on grit and racial identity as a protective factor, the present study seeks to help schools gain insight on how to incorporate racial identity research into school-based intervention but to also help build student self-awareness related to racial identity as a protective factor for adolescents.

Hypotheses/Research Questions

The specific research questions that frame the current study are:

1) At the individual level, do racial identity components such as private regard, public regard, centrality and ideology moderate the relationship between grit and academic performance?
2) Do adolescent students with similar grit scores tend to be friends?
3) To what extent, if at all, do African American students' racial identity components connect to the racial identity components of their friends? That is, how alike or similar are racial identity components between peers mutually identified as friends?
4) Do similarities or differences between students' racial identity components moderate grit-academic success connection?
5) How can schools use socio-ecological information on racial identity, peer interactions, and grit to improve socio-emotional learning?

Research Design

The present study uses survey data collection methods in the high school setting and a school record review. This design aims to quantitatively explore, as dependent variables, grit and student success, operationalized here as grade point average, and the moderating qualities of racial identity components among individuals and peer groups. Peers will be defined here as self-identified friends through the use of participant nominations. Demographic data will also be collected and used to look for other potential moderating, independent variables in the relationship between grit and success.

Conceptual or Theoretical Framework

Using a social ecological and critical race theoretical framework and multilevel regression methods, the current study will seek to gather participants' perceptions related to grit as well as perceptions related to ethnic identity constructs.

Summary

Recent findings illuminate the positive relationship between grit and achievement. Identity research also highlights a relationship between ethnic identity constructs and achievement. There is also an area of research that establishes a connection between situational cues related to group identity and performance (i.e., stereotype threat). Adding to the literature on situational stereotype threat, are there within-student factors related to identity that moderate the relationship between grit and academic achievement? Are there protective identity factors that strengthen the relationship between grit and achievement? Cultural competency is a major tenet in school psychology and in school reform, more broadly. Can we add to the discussion of

cultural competency by creating a more nuanced account of the meaning of culture vis-á-vis identity constructs and their impact on achievement?

The present study seeks to explore the concept of grit as a predictor of academic success and the role that both individual-centered and systems-level factors play in the connection between grit and academic performance. Specifically, the study aims to address the propensity for constructs related to one's ethnic identity to serve as moderators in the relationship between grit and academic performance. These identity constructs include one's private regard of their ethnic identity, how central one's ethnic identity is to their self-concept and their ethnic identity ideology.

This study also addresses the potential effect that ecological factors have on the connection between grit and academic performance. These ecological factors include peer evaluations of grit, peer perceptions of race/ethnicity as well as the salient community-level element of one's views of how the general public regards their race or ethnicity.

CHAPTER II

LITERATURE REVIEW

The aim of this review of literature is to present the historical foundations of racial identity research and its applications to student achievement. Using Bronfenbrenner's social ecological framework and the lens of CRT, the literature begins to elucidate the connection between one's racial identity components, that of their friends in the school setting, and the role of grit in these social connections. This literature review also presents the development of the broadly used methods to measure student achievement and highlights the emerging strand of noncognitive metrics linked to student outcomes. The main points of this review also highlight the dearth in the research on grit-to-academic performance relationship related to social identity theory and social ecological factors that moderate the relationship.

Ecology of Human Development and Racial Identity

Urie Bronfenbrenner's work (1977) on ecology of human development emphasizes the use of naturalistic settings to assess human development. This acknowledgement of the importance of the naturalistic setting highlights the importance of the context in which human beings develop. Bronfenbrenner puts forth that the "understanding of human development demands going beyond the direct observation of behavior…[and] requires examination of multi-person systems of interaction not limited to a single setting" (p. 514). Bronfenbrenner proposed a naturalistic approach that converges with the more experimental approach to human development research. This approach leads to Bronfenbrenner's delineation of specific layers

that comprise the context in which individuals exist and develop. At the center of this concentric conceptualization of human development is the individual. This developmental process is a "progressive, mutual accommodation throughout the life span" where the individual interacts with the "changing immediate environment in which it lives, as this process is affected by relations obtaining within and between these immediate settings, as well as the larger social contexts…" (p. 514).

Outside, but indelibly connected to, the individual are the *microsystem, mesosystem, exosystem,* and *macrosystem* layers as well as the *chronosystem*, or time layers, as connectors across these ecological layers. The microsystem level is the "immediate setting containing [the] person...such as home, school, workplace, etc.…" and, at the time of Bronfenbrenner's (1977) writing, were not well integrated into the psychological research when researchers focused more on a behaviorist model of "process (e.g., modes of interaction, reinforcement schedules, response rates) rather than content (e.g., the nature and purpose of the task)" (pp. 514-515). The mesosystem is a layer that acknowledges the interconnections between the major settings that impact an individual's life such as interactions between school, peers, family, workplace, and church. Bronfenbrenner describes the mesosystem as "a system of microsystems" (p. 515) and highlights the way in which the mesosystem reflects a cumulative effect of the individual acting and interacting across several settings.

The exosystem layer includes major institutional social structures such as the work world, the neighborhood, mass media, government agencies, communication and transport facilities, and informal social networks. The exosystem describes these social structures as affecting the individual and influencing his or her immediate setting but not containing the individual. An

example of neighborhood in the modern view of the exosystem framework may not be one's immediate neighborhood that is in geographical proximity to the individual's home but, instead, is the broader geographical area that could be described as a particular area of one's city or as defined by urban, suburban, or rural terminology.

The macrosystem level is a broader level that carries cultural and subcultural information and sets patterns, customs, norms, and social rules. Described by Bronfenbrenner (1977) as blueprints, the macrosystem is structural and also ideological as it provides "meaning and motivation onto particular agencies, social networks, roles, activities and their interrelations" (p. 315). Finally, the chronosystem layer of Bronfenbrenner's model was developed after the original model was created and reflects a socio-historical pattern of events over time. Figure 1 illustrates the layers Bronfenbrenner's social ecology theory.

Interestingly, Bronfenbrenner (1977) developed this nuanced view of how various contextual factors impact the individual but also presented research that placed the inadequacies of individual students, specifically African American students, within a pathologized view of African American "character and way of life" (p. 910) including a lack of motivation, issues related to paternal absence, prenatal factors, and dysfunction. It is important to note, however, that Bronfenbrenner does acknowledge the broader historical basis for this as he emphasizes the effect of legacy of slavery on the development of the African American student.

Bronfenbrenner (1977), ironically, also hints at the idea of grit as he discusses the findings of Deutsch, which "indicate that the failure in persistence reflects not only an inability to concentrate but also a lack of motivation and an attitude of futility in the face of difficulty" (p. 911). What Bronfenbrenner does not mention in this discussion are the protective factors

related to minority group status, specifically for African Americans, and the grit-related component of goal setting.

Determining the relationship between grit, academic performance and the potential moderating value of racial identity factors must involve more concrete definitions of racial identity components and an understanding of the emergence of racial identity measurement.

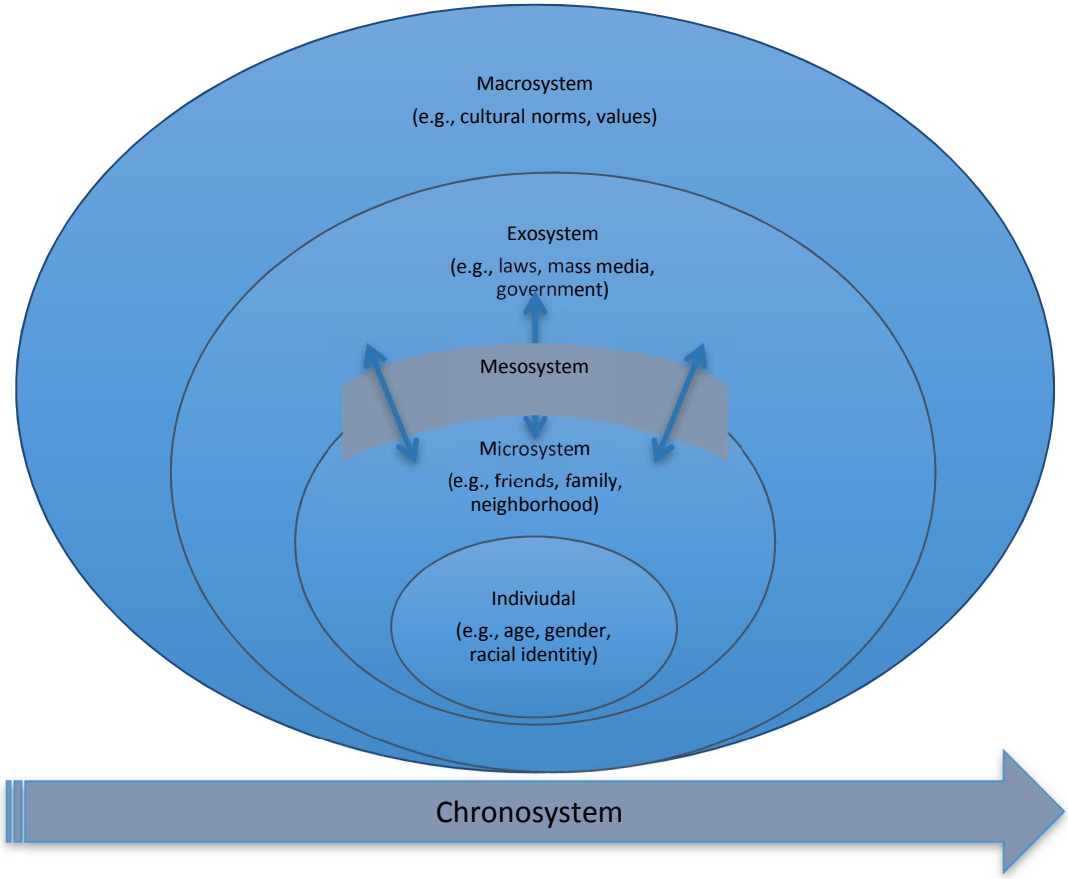


Figure 1. Illustration of Bronfenbrenner's Social Ecology Theory

Racial Identity Development

Race is commonly defined as "cultural characteristics of a particular group, that is, the norms, values, attitudes, and behaviors that are typical of an ethnic group and that stem from a

common culture of origin transmitted across generations" (Phinney, 1996, p. 920). Therefore, race is based on a common culture of origin that individuals share with other ethnic group members and is a dynamic construct in a practical sense, in that some may choose to identify strongly with their ethnic group while, for others, ethnicity is so salient that they typically do not perceive a choice in their identification.

For over a century, social psychology theories have attempted to assess the connection between individual behavior and group affiliation, typically focusing on how an individual functions within a group and conceptualizing the group as something external to the individual. However, in the last few decades, researchers have presented theories that shifted the focus from externalizing group affiliations to thinking of them as factors that contribute to an individual's psychological functioning (Brewer, 1991; Miller & Prentice, 1994; Turner, Hogg, Oakes, Reicher & Wetherell, 1987).

As mentioned, human identity and self-concepts are based on an inherently social existence based on a categorization process. As noted by Allport (1954) in *The Nature of Prejudice,* the human mind must think with the aid of categories and once we form them, they are the basis for normal prejudgment. This categorized thought not only applies to places and things we encounter, but also to our reflections about our own selves and about others. Individuals place themselves and others into social categorizations according to what is familiar and, in turn, what is familiar becomes the basis for in-group identification and that which is different is the basis for out-group categorizations.

We formulate in-groups when members of a group "all use the term *we* with the same essential significance" (Allport, 1954, p.31). This essential significance Allport spoke of is the

basis for the modern-day notions of group identification. According to self-categorization theory, we categorize ourselves and other individuals into social categories, forming a "cognitive grouping of the self as identical to some class of stimuli in contrast to some other class of stimuli" (Turner & Onorato, 1999, p. 21). In this self-categorization process, the similarities we share with other in-group members and the differences between our in-group and out-group are accentuated. These in-group and out-group distinctions become important in the development of racial identity theoretical framework.

Foundational Perspectives on Racial Identity Development

Identity Formation Theory

Identity Formation Theory was developed by Erik Erickson and operationalized by Marcia in 1966. It is comprised of four stages: *diffusion* where the individual is not engaged in identity exploration or commitment, *Foreclosure* where the individual has accepted an identity without personal exploration typically due to parental values, *moratorium* where the individual has explored their identity but has not committed to a formed concept of their identity. The fourth stage is an *achieved identity* where the individual has made a post-exploration firm commitment. These stages are not necessarily developmental although many studies suggest participants perceive a moving toward advanced level of ethnic identity (Phinney, 1989).

Self-Categorization Theory and Social Identity Theory

Tajfel's social identity theory (1978) and Turner et al.'s self-categorization theory (1987) have played integral roles in leading social psychologists to closely observe the functions of group affiliation in connection with the needs of the self. Social identity theory further argued that since social identities involve integrating evaluations of the group into one's self-concept,

then there is a need for a group to provide positive self-evaluation in reference to the social identity (Turner & Onorato, 1999). Tajfel (1981) posits that social group membership is "that part of an individual's self-concept which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership" (p. 255).

When humans used the term *we* to signify that they are connected to a group, three components are at work in determining that individual's group membership. The first component is a cognitive component, in which individuals have a sense of awareness that they are members of a group (Tajfel, 1982). The second and third component are evaluative in which membership "awareness is related to some value connotations," and an emotional one in which individuals have an emotional investment in the awareness and evaluation of group membership (p. 2). Thus, group membership holds personal meaning to an individual as it is connected to our cognitive, emotional and value structures and effects how we categorize ourselves (i.e., intragroup comparison) and others (i.e., intergroup comparison).

Social identity theory also posits that there are basic discontinuous levels in an individual's levels of self-representation (Turner & Onorato, 1999). These differing levels of self-representation are characterized by an individual's *social identity* and *personal identity.* Social identities are categorizations of the self that we derive from the knowledge and values associated with group membership (Tajfel, 1982). Personal identities, on the other hand, are based on characteristics that differentiate one individual from others within a group or a given social context (Brewer 1991; Phinney 1996; Tajfel, 1982).

Social identity theory further argued that since social identities involve integrating evaluations of the group into one's self-concept, then there is a need for a group to provide positive self-evaluation in reference to the social identity (Turner & Onorato, 1999). Thus, individuals not only look to their unique personal identity to gain positive evaluations, termed *personal self-esteem*, but also toward their group memberships to provide positive evaluations (Luhtanen & Crocker, 1992; Turner & Onorato, 1999). The positive evaluation that forms out of group membership evaluation has been termed *collective self-esteem* (Luhtanen & Crocker, 1992). Consequently, the positive evaluations derived from the idiosyncratic evaluation of the individual self along with the collective self-esteem contribute to the forming of "an overall sense of self-worth, or positivity of the self-concept as a whole" (p. 304).

Tajfel (1978) also explores the complexity of identification with different social identity groups due to conflicts in attitudes, values and behaviors. According to Tajfel (1981), minority group membership criteria has little to do with numbers as it is mostly associated with the social position produced out of certain similarities and social disadvantages that a group of people have in comparison to more dominant segments of society.

Nigresence Model

The idea of Nigresence or the "process of becoming black", emerges from racial identity research dating back to the 19th century (Cross, 1978). As it has been applied to ethnic identity formation in African Americans, this model hinges upon focused self-reflection, as well as worldview and behavioral change leading to internalization of one's black identity. Charles Thomas put forth the idea of "negromachy" which is described as a mental illness in some African American individuals due to confusion of self-worth and shows a dependency on white

society for definition of self (Thomas, 1970). Thomas described attributes of this illness as "compliance, subservience, repressed rage, and an oversensitivity to racial issues" (p. 14).

Thomas (1970) also supports a more segregated and exclusive approach to African American individuals defining their ethnic identity by suggesting a temporary suspension of contact with other racial groups to establish a positive, self-determined racial identity. Thomas' discussion of racial identity development sat in contrast to the prevailing racial identity development conceptualizations as it took on a more positive outlook on the emerging African American identity instead of a more deficit-driven model of ethnic identity development.

In comparison to the Thomas model (1970), Cross (1978) developed a more comprehensive take on nigresence version of with the "Negro-to Black Conversion Experience" model. Cross notes that Thomas discusses the attitudes associated with identity development and the differences between the stages of the development but fails to connect these integral components and does not connect them into a cohesive model. Cross pulls for Thomas' theory by applying the concept of nigresence to five distinct and descriptive stages of development: Pre-encounter, Encounter, Immersion-Emersion, Internalization and Internalization-commitment. The *pre-encounter stage* involves the existence of an old identity or frame of reference rooted in a Euro-American worldview. Cross notes that this stage includes commonalties across class boundaries for African Americans as both poor and middle class African Americans can "act and behave in a manner that degrade Blackness" (p. 17). The *encounter* stage involves an event that deracinates the individual; uprooting them from the existing, ethnic majority-based frame of reference. This event facilitates a vulnerability that leads to novel interpretations of one's identity and socio-cultural conditions. This stage relies on a social element of feedback signaling that the

old identity is not appropriate and the new identity becomes appealing. By the end of this stage, the individual has committed to the idea of "becoming black and the individual embarks on a highly motivated process to move toward internalization. The *Immersion-Emersion stage is* prior to internalization, where there is a period of transition where the individual struggles to remove the old perspective from their self-concept while moving closer to internalizing a black identity. This third stage involves glorification of African heritage, "blacker-than-thou" attitudes, unrealistic expectations of the efficacy of black power, and a "tendency to denigrate white people and white culture" (p. 17). This stage also includes an emergence from an emotion- and ego-driven stage of psychological defensiveness toward a more cognitively open stage where critical analysis related to blackness can become the prevailing approach.

The *internalization* stage is the fourth stage and hinges upon the individual resolving conflicts between the old and new worldviews and becoming confident in one's view of blackness. Individuals in this balanced stage tend not to harbor anti-white feelings and use African Americans as their primary reference group; espousing a more pluralistic nonracist perspective. *Internalization-commitment* is the final stage and is similar to the fourth stage but includes a push for involvement a larger, more communal progression of black identity. This stage is important for identity change to have lasting political significance, as the individual is involved in problems shared by the larger black community.

The Thomas and Cross models both include five stages but the Thomas (1970) model begins at a point where change has started and does not include the Pre-encounter and Encounter stage that Thomas includes. The Cross (1978) model also acknowledges one transition stage (e.g., immersion-emersion) whereas Thomas' model is comprised of stages that denote transition

leading to the final stage of internalization-commitment. In addition, Cross' empirical evaluation of his model highlighted the content validity of his model's constructs as study participants' stereotypic images of blackness (e.g., "the Negro", "Black Militant", "the mellow Black") and their descriptions of the process of emerging black identity were consistent and overlapped with the Cross model descriptions (p. 27).

Black Racial Identity Development

Phinney (1990*)* furthers the conceptualization of black racial identity development by challenging that negative attitudes toward one's own group are an essential part of an emerging black identity. Phinney also puts forth that an encounter stage, as discussed in the Cross model, is not necessary for black identity to emerge. Phinney, on the other hand, sees the exploration stage as predicated on increased awareness of the important issues that impact African Americans and a need to understand them (Phinney, 1989). Phinney also contributed to the conceptualization of the black identity development by conducting a qualitative study of the experiences of ethnic group minority study participants. This study included African American, Asian, and Hispanic participants. The study participants were tenth grade students who were asked questions based on Marcia's ego identity research on exploration, attitudes and commitment to of ethnic identity. These students were given a self-concept and adjustment scale.

Phinney (1989) found that over half of the participants were at the diffusion/foreclosure stage, less than 25% were at the moratorium stage and 20% reached an achieved identity stage. Phinney did not find any significant difference between the stages in which African American participants were in and the stages of other non-African American participants. Through interviews, Phinney identified issues that were uniquely important to resolving ethnic identity in

each ethnic group. African American, female participants were found to struggle with white standards of beauty and African American male participants struggled with job discrimination and attempting to distinguish themselves from negative images of African American adolescents.

Multidimensional Model of Racial Identity

Examining the existing research on identity development, Sellers' et al developed a measure, the Multidimensional Model of Racial Identity (MMRI), to better define African Americans' beliefs related to the significance of their race, specifically, in how this interplays with self-definition as well as the qualitative meanings associated with membership to one's racial group (Sellers et al., 1997). Sellers and his colleagues created the MMRI framework to measure these identity concepts by reconciling inconsistences in previous African American racial identity research. They posit that racial identity research previous to the MMRI, albeit prolific, is equivocal due to a focus on asserting the importance of racial identity and less of a focus on the nature of the role of racial identity for African Americans. The MMRI reflects an integration of African American racial identity research and identity theory research, which assumes identities are hierarchically ordered, based on their relevance to aspects that are salient to one's identity (Stryker & Serpe, 1982, 1994). Identity theory research also assumes that individuals make choices based on these relevant identity components. Identity theory research typically focused on definable identities with identifiable behaviors and attitudes such as occupations or religion. Sellers et al. (1997) acknowledge the diversity in the African American experience precludes defining membership to a racial group by a set of behaviors and attitudes and, instead, uses a grounded theory, phenomenological approach with the MMRI to determine what represents this identity for the individual who identifies as an African American. This

representation is not conceptualized as only a static one as it is based on the idea that the degree to which the importance of race on self-concept has "situationally specific and cross-situationally stable components…" (Scottham, Sellers & Nguyen, 2008).

The MMRI is comprised of four dimensions: identity salience, centrality, ideology, and regard. *Salience* measures how relevant one's race is to their self-concept while *centrality* refers to the extent to which a person defines him or herself with respect to race. Salience is a unique dimension, in that, it does vary across contexts and does not lend itself to measurement because of its contextually dynamic nature. *Regard* refers to how an individual evaluates aspects associated with being African American and the extent to which an individual feels that others view African Americans. The *ideology* dimension represents "the individual's beliefs, opinions and attitudes with respect to the way she or he feels that the members of the race should act" (Sellers et al., 1998, p.27). These beliefs, opinions and attitudes were found to align with four ideological philosophies that were found to be prevalent among African Americans. The first is a *nationalist philosophy* which emphasizes the uniqueness of being African American and being in control of one's own group destiny with minimal out-group input (Sellers et al., 1998). The second is an *oppressed minority* philosophy, which emphasizes the similarities between oppression of African Americans and that of other groups. The third philosophy is an *assimilation philosophy* characterized "by an emphasis on the similarities between African Americans and the rest of American society" (p. 28). The final ideological philosophy of the MIBI's *Ideology* subscale is a *humanist philosophy* that emphasizes the similarities among all humans.

Emerging out of the MMRI dimensional framework, Sellers et al. (1998) created the Multidimensional Inventory of Black Identity (MIBI) to operationalize the three cross-situationally stable dimensions of the MMRI framework (i.e., centrality, regard, and ideology).

Racial Identity Development in Adolescence

In the foundational literature on identity development, Erickson pinpoints adolescence as a time where ego identity formation is achieved as a result of a period of exploration and experimentation that leads to a decision or a commitment in various areas, such as occupation, religion, and political orientation (Erickson, 1968). Identity investigation and development becomes a key goal of adolescence as the individual integrates multiple dimensions of their life such as religious beliefs, vocational goals, and social identities.

Phinney (1989) notes that there is a childhood shift from learning one's ethnic label to learning significance of group membership during adolescence (p. 35). This learning process involves a period when individuals commit to "possible achievements and the comprehensible ideals of an existing or developing civilization" (Erickson, 1970, p. 156). This period is a hallmark of adolescent identity development and occurs within social contexts, such as schools, that influences said development. Adolescence is a formative developmental period when youth develop and integrate private and public regard (Hughes, Way, & Rivas-Drake, 2011).

MIBI-Teen

Although the MIBI reflects a well-nuanced approach to operationalizing the nature of racial identity, there are unique facets to its development during adolescence. Scottham et al. (2008) integrate these unique factors with the development of the MIBI-Teen. At the basis of MIBI-Teen, Scottham et al. put forth that the relevant social experiences for adolescents differ

from those of college students. Specifically, college students experience a novel context in which their racial awareness is a part of autonomy building away from home. Adolescents, on the other hand, are developing autonomy under their parents' supervision with family existing as the prime racial socialization agent with peers playing an increasingly important role (Coard & Sellers, 2005; Hughes et al., 2006).

Scottham et al. (2008) also assert that the reading and conceptual comprehension ability differs, such that adolescents are likely unfamiliar with terms in the MIBI such as "Afrocentric values," "political and economic goals," and "injustice and indignities." Considering these two major differences in the referent sample used to construct and validate the MIBI, Scottham and his colleagues developed a measure that is consistent with adolescent experiences with reading comprehension and based on the foundational factor structure of the MMRI framework. The MIBI-Teen, derived from the MIBI, assesses three, cross-situational, stable dimensions of MMRI (i.e., centrality, regard and ideology) (Scottham et al., 2008). It is a developmentally appropriate measure of racial identity that takes into consideration adolescent attention span, developmental stage, comprehension of the constructs and that the constructs are consistent with adolescent experiences. This instrument does not include the salience construct that is included in the MIBI because salience is likely to change as a function of context. The resulting MIBI-Teen reflects a valid racial identity framework for adolescents with consistency across gender and grade level (Scottham et al., 2008).

Critical race theorists posit that the racial achievement gap is fueled by a lack of understanding of race and the systemic factors that contribute to the gap. Edward Taylor (2006) discussed the lack of "convincing and useful systems of exposing racialized customs and

practices in U.S. education in order to eliminate racial differentials in testing outcomes" (p. 72). CRT, based on critical legal scholarship, seeks to produce meaningful racial reform by recognizing the permanence of racism and that it is a normal aspect of daily life instead of a rare occurrence. Another essential cornerstone of CRT is counter-storytelling as a method to challenge the validity of the accepted narratives particularly those held by the majority group (Delgado & Stefancic, 2012). CRT founders posit that storytelling, particularly in CRT's original sphere of law, serves as the determinative backdrop by which society—and courtroom juries—makes judgments. Whether in the court of law or in the classroom, challenging the popularly accepted narratives related to race and grit makes room for change in perspectives related to minority agency, access to resource, and inclusion. CRT with its focus on counter-narrative and the permanence and pervasiveness of racism can elucidate issues in education related to minority school connectedness, perception of student grit, and minority adolescent development. Using CRT as a lens through which to view potential education reform revolves around acknowledging the experiences of students of color that have been influenced by the pervasive nature of racism; uncovering the explicit and implicit ways in which racism permeates the educational systems on multiple layers. CRT then situates this research within the need for educational research that elucidates student racial identity and its impact on academic performance.

The role of social factors in identity development has been made clear in the historical literature, particularly in Tajfel's and Turner research on social identity and self-categorization, as well as the growing body of work on race in the educational setting. Delving further in the structure of settings that influence identity formation, the interconnectedness of education and racial identity has been demonstrated in a long-standing thread of research on the risk and

protective factors of race in the academic setting (Chavous et al., 2003; DeCuir-Gunby, 2009; Fordham & Ogbu, 1986; Neblett, 2006; Neblett, Rivas-Drake, & Umaña-Taylor, 2012; Steele, 1997; Ward, 1990). Neblett (2006) specifically discuss the protective nature of racial identity as it relates to the bolstering of the self-concept in ethnic minority youth and self-perceptions of competence and adequacy. They go on to discuss the effect of positive racial identity perceptions and cultural components such as familial identification and cohesion on coping skills in the face of racial discrimination.

Racial identity has long been recognized as a factor in performance in academic settings. Although there has been debate regarding the evidence for a consistent relationship between identity and achievement, the majority of the research found a relationship, albeit positive and negative (Cokley & McClain, 2011). Students who perceived a more positive public ethnic regard, for example, were more engaged and higher achieving than counterparts with more negative public regard (Rivas-Drake, 2011). Private regard has also been identified as a promotive factor, or a "predictor of better outcomes across all levels of risk," in several minority groups (p. 295).

Racial identity has been established as an important moderating factor for psychological adjustment and well-being. It also hinges upon the idea that racial identity, for adolescents, is heavily influenced by the context in which adolescents spend a large portion of their day—schools. The influence that the school context has on racial identity goes beyond the time that adolescents spend in the school environment, however. It has been well-established that adolescent racial identity is influenced by familial (Phinney, 1989) and other non-school factors but is also heavily influenced by social interactions with peers (Douglass, Mirpuri, & Yip, 2016)

as well as the school discipline practices, and the rhetorical narratives within the school curriculum related to the racial histories, the current racial climate, and the manner in which the school incorporates, into the curriculum, positive, historical contributions of ethnic groups (Johnson & Whitcomb, 2016).

Stereotype threat, coined by Steele and Aronson in 1995, is a concept that hones in on the effect of racial identity on academic performance. It is a self-evaluative threat based on the social-psychological difficulty that arises out of negative stereotypes. The research on stereotype threat demonstrates that situational cues related to stereotypes effect physical and intellectual performance (Steele & Arouson, 1995; Steele, 2010). Specifically, Steele and Arouson (1995) found that adult African American participants who were expecting to complete an ability-based diagnostic test showed greater cognitive activation of stereotypes about African Americans and their concerns for their own ability, and tended to avoid racially stereotypic preference and tended to make advance excuses for their performance. The stereotype threat research has had a profound impact on the understanding of the interplay between race, social perceptions, and education.

Farrington et al. (2012) note the importance of contextual factors that influence academic success as they put forth that "interpersonal, instructional, and environmental factors affect students' social behavior and academic performance, including: …(a) peer and adult norms that convey high expectations and support for academic success…" (p. 50). Douglass et al. (2016) found that the importance of race on adolescents' identity (i.e., centrality) depends on group factors in the social context as they studied high school students in schools with racially similar friends and peers compared to those who are racially dissimilar. Their findings demonstrate that

the importance of racial identity for high school-aged adolescents was strongest for adolescents with a lower amount of racially similar peers in school than adolescents with a high proportion of same race peers. This effect was even stronger when looking at same race versus racially dissimilar friends. This study points to an important concept regarding the difference in the more distal context of peers in a setting compared to the more proximal context of self-selected friendships in the same setting. This concept is not entirely novel given Bronfenbrenner's research on proximal context having a stronger impact than more distal contexts (Bronfenbrenner, 1979).

Academic Achievement, High Stakes Testing and Non-Cognitive Factors Success

Measuring academic achievement has been a contentious concept in the context of NCLB mandates. Economic and socio-political factors have led to a re-calibration of what is at stake when one does not receive an education (Farrington et al., 2012). As such, policymakers increased academic rigor through more rigorous high school graduation requirements, advanced placement coursework, and an increase in academic standards. To ensure that schools are held accountable for student achievement toward these more rigorous standards, accountability measures were legislated in measures including the No Child Left behind Act of 2001. This act required that states administer standardized tests to provide data on student performance as well as school-level performance. The Common Core Standards are an education initiative adopted by forty-two states that reflect academic standards in math and English language arts/literacy and serve to standardize student skills for college and career preparation (Common Core Standards Initiative, 2016). To better understand the educational context in which students are expected to thrive, it is important to understand the impact of this high-stakes educational environment.

Accountability and Large-Scale Assessments

The standards-based educational reform began in the latter part of the 1980s with the growing concerns of U.S. schools, publications regarding the need for education reform and subsequent federal educational policies (Braden & Tayrose, 2008). This was largely spurred by the *A Nation at Risk* report, released in 1983 by President Ronald Reagan's National Commission on Excellence in Education. This commission was composed of members from various sectors including education, business, and government. The Secretary of Education at that time, Terrel Bell, established this commission with the goal of assessing the American education system and the quality of teaching and learning (ACM Communication, 1983). One key foundational component of this report was its comparison of America's industrial and intellectual progress to that of other nations such as Japan, Germany, and Korea. Indicators of the risky position in which America stood included low literacy rates, decreased high school achievement rates, and a marked decline in aptitude testing outcomes (ACM Communication, 1983). The report also discussed a pervasive frustration among students, parents and school staff in the "dimming of personal expectation and the fear of losing a shared vision for America" (p. 4). The commission's findings in the Nation at Risk report were divided into curriculum-related issues, ability and performance expectations, how students spend their educational time, and teacher shortages and preparation quality (ACM Communication, 1983). The curriculum used at the time of the investigation was compared to the curriculum used in the mid-1960s.

The commission found that the school curricula had been generalized, and schools that do offer more extensive choice do not have students complete these more advanced level offerings. The commission also found that student expectations had centered on minimum competencies

implemented as maximum competencies that reduced educational standards. The commission also noted that the amount of homework amount had decreased and that textbooks were not meeting standards. In terms of the time distribution, the commission's report put forth that Americans spend much less time completing school work and that classroom time was not spent effectively which included a lack of time spent on study skills (ACM Communication, 1983). The state of teaching as a profession was also criticized for including individuals who were, themselves, low performing high school and college students. The teacher preparation programs were also critiqued for not producing qualified teachers and also for using curricula that did not including enough subject matter training.

The commission recommended a strengthening of high school graduation requirements and specific guidelines on the outcomes for instruction in English, math, science, social studies, computer science, and foreign language. They also recommended the administration of nationwide standardized tests to assess student readiness and to determine if remedial or accelerated work is needed to facilitate student progress. *A Nation at Risk* also highlighted a burgeoning solidification of the connection between educational standards and policy mandates at the state and federal level (Lauen & Gaddis, 2012). It also led to the educational reform emphasis on standards-based reform and testing as an accountability method (Silbaugh, 2011).

Accountability testing in the United States allows policymakers to use large-scale assessment to "discover which schools and districts are fulfilling their responsibilities and which are falling short" (Wiliam, 2010). High-stakes are defined as testing that has consequences directly attached to individual stakeholders including students and teachers (Farrington et al., 2012). Examples of consequences include grade promotion and retention as well as performance

pay for teachers (Braden & Tayrose, 2008). High stakes assessment has had negative effects such as teacher attrition and greater pressure on teachers of disadvantaged students to improve scores by focusing on teaching to test content (William, 2010).

The National Association of School Psychologists highlighted issues with large-scale assessments, which include norm-referenced or criterion-referenced assessments, include the use of a single data point (i.e., test score) to make promotion and retention decisions as well as graduation decisions (NASP Fact Sheet, 2002). Interpretation-related factors that interfere with accuracy are centered upon, for example, who is included in the assessment population, how are schools accounting for population changes due to student mobility, students excluded due to disability, and students with limited English proficiency (NASP Guidelines, 2002).

In the 1970s, most states used standardized, norm-referenced tests made to assess the minimum competencies including literacy (Wiliam, 2010). Norm-referenced tests are designed to assess a student's mastery of content standards. However, concern emerged in the 1980s and 1990s that standardized tests were not assessing all of the important aspects of school achievement. Combined with the critiques highlighted in the *A Nation at Risk* report concerning the need to raise standards beyond basic competencies in order to compete with a more advanced global workforce, legislation began to raise school proficiency standards. With this critique, legislation such as No Child Left Behind (NCLB) of 2002 was passed which required states to report performance relative to proficiency standards rather than reporting student performance relative to a norm (e.g., percentiles) (Braden & Tayrose, 2008). High-stakes testing also emerged from the NCLB, which mandated states to set academic subject matter standards and administer yearly tests of students' progress (Shriberg, 2007). NCLB standards were based on cohort

performance instead of individual student performance; using the proportion of students who reached state-based proficiency standards every year with the goal of 100% by 2014 (Wiliam, 2010).

In sum, the No Child Left Behind Act (NCLB) was a response to perceptions that America's education system was fledging and producing an ill-prepared workforce (Gay, 2007). Gay discusses the major contradiction in NCLB's procedural standardization and standardization of its measures, that is, the manner in which all students are expected to demonstrate their skill level in the same way and time as their peers. This contradicts well-established learning theories that acknowledge the diversity in the learning process including how students demonstrate knowledge in different ways. Gay also criticized standardized testing as existing as more of a mechanism to separate students who are deemed 'intellectually fit' from the socially underserving, than about providing genuine high-quality, egalitarian education for all students.

NCLB also intended to shore the achievement gap between racial and economic demographic groups with sub-group accountability standards for racial and ethnic minorities, students with limited English proficiency, students with disabilities, and economically disadvantaged students. Prior to the standards-based reform movement in the 1980s and 1990s, special education and students with limited English proficiencies to be excluded from school assessments (Lauen & Gaddis, 2012). NCLB introduced the Adequate Yearly Progress (AYP) metric, which schools were considered not to have met if a subgroup failed to meet performance targets. If a school was a Title I school, that is, received federal funding, and also failed to meet AYP for two consecutive years, the school faced sanctions (Lauen & Gaddis, 2012). Darling-Hammond (2007) discusses the surface-level NCLB intentions related to student-wide test score

improvement, school choice for parents, and higher expectations for teachers. One of the unintended consequences of NCLB, as Darling-Hammond summarizes, was that NCLB mandated progress did not include equitable educational opportunities and that the underfunded bill lead to the identification of inequities without funding to address them. Further, there was what Darling-Hammond called a "diversity penalty" which is the unintended NCLB consequence that put schools at a disadvantage as they tried to meet the various subtype standards mandated by NCLB.

The amplification of the inequities in the education system and other consequences that resulted from NCLB affected under-resourced, low-income schools that were composed primarily of minorities as these schools struggled to meet the subtype standards without adequate funding or an infusion of resources. Without adequate funding to fix these inequities, these schools were also staffed with less highly qualified teachers who failed to meet the NCLB evaluative teacher standards. More qualified teachers began to leave under resourced schools to work in higher performing schools; leaving less qualified teachers at the lower performing schools (Darling-Hammond, 2007).

NCLB unequally impacted minority schools but also began to impact non-minority schools as they also failed to meet the goal of 100% of students meeting state-based proficiency standards. The critiques of NCLB and the continual negative consequences lead to lessening of the NCLB standards through federal actions, such as, allowing a number of states more flexibility in designing their own plans to boost student achievement, their own progress monitoring methods, and goals to decrease the achievement gap (Slack, 2012).

Many education researchers also began to argue that with the push toward college and career preparation and high-stakes accountability testing must come a push for student competencies related to social interaction and how students manage their emotional state. In keeping with this notion, the Every Student Succeeds Act (ESSA), signed into law in 2015, includes language that focuses on nonacademic factors and broadens the definition of student success to include nonacademic indicators for success (CASEL, 2018). ESSA also includes recommendations connected to the social context that supports student safety and health including "safe, healthy, supportive, drug free environments that support student academic achievement" (ESSA, 2015).

Use of Noncognitive Tools and Social Emotional Learning

The educational, paradigmatic focus over the last 15 years on noncognitive factors has been undergirded by the idea that social emotional learning, or SEL, can improve student outcomes (Gordon & Bridglall, 2006; Farrington et al., 2012). Although the idea of emotional intelligence and the role of social skills and behavior self-management is not new the field of education, the role of noncognitive factors such as SEL has been uniquely mandated at the state and federal level.

In a key literature review on adolescent learning, Farrington et al. (2012) define noncognitive factors as aspects in the learning process that exist separately from content knowledge and academic skills and cannot be measured by cognitive tests or academic assessments. These factors impact academic performance but are not related to building and exhibiting mastery of the content. These factors include behaviors, skills, attitudes, and strategies connected to a student's process of learning and requiring that we look beyond "individual-level

skills to consider the ways students interact with the educational context within which they are situated and the effects of these interactions on student's attitudes, motivation, and performance" (Farrington et al., 2012, p. 3).

These factors have received attention for their role in student success as states began to mandate the implementation of SEL standards. Social skills and social interaction have a bi-directional relationship where enhanced social interaction helps to build social skills and social skills contribute to productive interactions. In keeping with Bandura's seminal social learning theory (1963, 1977), this helps learning, as students learn from their social context. At their essence, social skills can be considered as academic enablers in school environments (Farrington et al., 2012). Bandura's (1977) social learning theory posits that individuals learn through modeling, that is, observing a person perform a behavior, through hearing behavioral descriptions, and those symbolic modeling through character demonstration.

Farrington et al. (2012) provides a clear definition of noncognitive factors and asserts that social investments in noncognitive factors would reduce education disparities; creating supportive contexts that provide consistent and unambiguous messages about minority students' belonging, capability, and value in classrooms and schools. They also assert:

> …there is little to no rigorous evidence that efforts to increase standards and require higher- level coursework—in and of themselves—are likely to lead many more students to complete high school and attain college degrees. (p. 3)

However, the term "noncognitive" has been criticized for being too broad to be useful and inaccurately implies that there are "features of human behavior that are devoid of cognition" (Duckworth & Yeager, 2015). Although the term "noncognitive" is problematic, there is utility

in a measure, such as grit, that supplements testing outcomes related to IQ, aptitude and previously acquired skills is clear (Duckworth & Yeager, 2015).

Defining Grit as an Academic Performance Predictor

The concept of grit emerged from an amalgamation of research on learning, personality traits, and expert skill building. Duckworth's foundational work on the construct of grit has its underpinnings from the work of psychologist William James who separated the idea of human ability from the means by which individuals apply their abilities (Duckworth et al, 2007; James, 1907). What we are left with, however, is comparatively little research on how some humans use a small portion of their within-person resources while other high-achieving individuals are able to harness these resources (sometimes in the face of adversity) to push beyond their boundaries (Duckworth et al., 2007).

At first glance, one could purport that the ability to push beyond boundaries is highly correlated with intelligence. This correlation has been shown to be true as intelligence quotient (IQ) is predictive of success outcomes including GPA, income, job performance outcomes (Kuncel, Hezlett, & Ones, 2004). However, Terman and Oden's (1947) longitudinal study of gifted children determined that achievement differences in participants with IQs in the gifted range could not be explained by the differences in IQ. The achievement differences were better explained by noncognitive factors like perseverance, self-confidence and integration toward goals. Terman and Oden along with others began to interrogate the notion that achievement has a direct and monotonic link to intelligence leading to research helping to build a more comprehensive picture of the build blocks of success.

Personality Trait Research

Personality research added to conceptualizations of success, particularly through the advent of the Big Five model of personality traits developed by Goldberg in the 1980s. With its basis firm in Cattell's work in the 1940s among the work of others, Goldberg and colleagues developed a five-factor model that worked to predict patterns of human behaviors framed by the traits of *openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism*. Openness to experience is characterized by an individual liking novel experiences and includes imaginative and insightful traits. Extraversion is related to assertiveness, energetic behavior, and engaging in the interactions with others and the outside world (Goldberg 1981; John, Naumann, & Soto, 2008). Agreeableness is related to a tendency to seek social cooperation and is related to traits such as friendliness and cooperation. Neuroticism is related to emotional instability and the tendency to experience negative emotions (Goldberg 1981; John et al., 2008). Conscientiousness is related to reliability, organization and thoroughness. The trait of *conscientiousness* would eventually connect strongly to the development of the grit construct (Duckworth & Yeager, 2015). Goldberg (1981) connected adjectives such as" responsible," "scrupulous," "persevering," and "tidy" to individuals high on the conscientious scale which connect to the definition of grit, specifically in the idea of perseverance. In 2005, Duckworth and Seligman, suggested that academic performance depends in large part on students' self-control or conscientiousness, concluding that 'a major reason for students falling short of their intellectual potential [is] their failure to exercise self-discipline' (p. 944). Duckworth et al. (2007) defines grit as "perseverance and passion for long-term goals…that entails working strenuously toward

challenges, maintaining effort and interest over years despite failure, adversity, and plateaus in progress" (p. 1088).

In short, grit is comprised of interest, practice, purpose, and hope (Duckworth, 2016). It involves long-term commitment, positive response to failure or adversity, having consistent interests, or focused passions over a long time (Perkins-Gough, 2013). Duckworth et al. (2007) do point out, however, that although grit "overlaps with achievement aspects of conscientiousness, [it] differs in its emphasis on long-term stamina rather than short-term intensity" (p.1089). It is also important to set the construct of grit aside from the concept of resilience. They differ in a critical way as resilient individuals have been defined as "stress resistant" and functioning well or successfully after facing with life stresses (sic) (Harvey & Delfabbro, 2004; Luthar, 1991). Therefore, resilience is framed as a dynamic, adaptive process in response to stressful life events and grit is a more stable (although not immutable) personality trait that involves interest, goal maintenance and effort in the presence and absence of atypical adverse life events. Also, different from the construct of grit, much of the resilience literature has been focused on participant samples of at-risk children with findings extrapolated to adult populations (Luthar, Doernberger & Zigler, 1993).

Duckworth et al. (2007) also found that grit has a positive relationship to academic achievement and serves as better indicator for GPA and graduation rates compared to IQ. From a collection of studies with various participant samples, Duckworth et al. produced a 12-item grit scale with two subscales: *consistency of interests* and *perseverance of effort*. One of the first studies was a cross-sectional study to develop and validate a self-report measure of grit with a diverse sample of registered users from a University of Pennsylvania noncommercial public

website that provides free information on psychological research and self-report measures. Duckworth found that more educated adults were higher on grit than less educated adults of equal age. Through a series of additional studies, Duckworth confirmed grit as a predictor of achievement for undergraduate students, Spelling Bee participants, and West Point cadets. In the WestPoint cadet study, Duckworth found that the participants' outcome on the grit scale better predicted completion of the academy's difficult summer training program than existing assessments (Duckworth et al., 2007).

One of the most critical observations that lead to the grit construct emerged from research on successful professionals across a variety of fields. Studies on successful participant samples supported the existence of the noncognitive factors and their connection to success but there stood another critical piece. This piece was introduced by Andres Ericsson, a cognitive psychologist exploring the acquisition of expertise, termed as *deliberate practice*. Deliberate practice has appeared in popular media as the idea that ten thousand hours of practice is needed before developing an expertise (Ericsson & Pool, 2015). It not only involves logging in hours of practice toward a goal, it also entails strategic goal-setting; creating smaller goals to support larger ones (Duckworth & Yeager, 2015). Deliberate practice on these component skills was found to predict success in Duckworth's research on National Spelling Bee participants. Participants were more likely to advance if they participated in solitary, unassisted deliberate practice versus reading or spelling for fun or getting quizzed.

Deliberate practice also involves repetition with reflection and refinement, concentration as well as immediate and informative feedback. In the educational environment, this feedback comes from teachers making corrections on behavioral and academic performance. Previous

research on achievement including Duckworth's work, along with the current study, argues that the feedback from one's immediate context, or microsystem, influences the ability to succeed stemming from messages received from society and, more proximally, from their friends and peers in the school setting.

Social Underpinnings of Grit

One of the social aspects related to grit can be found in the manner by which feedback plays a role in deliberate practice in terms of the ability to refine one's work toward a goal based on external reactions. One's social world also plays a part in the construct of grit in its purpose component, or the "intention to contribute to the well-being of others" (Duckworth, 2016, p. 143). In addition, Duckworth discusses the "social multiplier effect" described as "each person's grit enhancing the grit in others" (p. 263). Duckworth also notes that the cultural mechanisms of grit allows for individuals to model grit for others.

Grit Criticisms

There are limitations and criticisms related to the construct of grit as with many indicators related to personality traits and those related to achievement. Duckworth addresses, for instance, the flaws inherent self-report measure. Particularly, the reflection on past behavior and its connection to future behavior. This is similar to the historical debate of personality existing and the questioning of the existence of a construct that reflects individual difference versus personality assessment merely measuring consistency of situations (Mischel, 1968).

Grit has also been criticized for its overemphasis on individual and less focus on social constructs and systemic issues**.** Critiques have called for grit research to focus on systems-level ecological context and consider the disparity in environments in which many minority students

must attempt to thrive and demonstrate grit to progress (Herold, 2015). Shaw et al. (2016) critiques the resilience research in the same manner by which the grit research has been critiqued, which is that a systems-level perspective must be added to the analysis of grit. The authors emphasize the importance of the *sociocultural ecology* on access to resources in the resilience literature (Ungar, 2011).

Current Study: Multidimensional Ethnic Identity, Grit and Academic Performance

The developing and dynamic focus on student achievement has fostered continual research that seeks to illuminate the factors that influence academic performance. Identity research has put forth a clear relationship between identity and achievement. However, social inequality and its resultant perceptions affect the performance of students of color as evinced by the well-established area of stereotype threat research that established a connection between situational cues related to group identity and performance. Pulling from Bronfenbrenner's (1977, 1979) research on social ecology and the influence that social context has, particularly the distal microsystem context of schools, it becomes critical that the systems level piece be included in the analysis of student achievement. Knowing that grit shows promising ability to predict achievement and acknowledging the influence of race within social contexts as producers of student risk or protective factors (especially for those of color) builds a case for the examination of the potential moderating relationship between these variables.

In addition, the criticism that the applications of grit research do not account for systemic factors that influence the experiences of disenfranchised students also builds the ground for research that looks at ways in which social factors could be explored to better understand the

factors that influence our potentially marginalized students including racial minorities. Radiating out from, but including, the individual's racial identity perceptions and ideological beliefs, the current study looks at the relationship between grit and achievement and the role that critical components in an adolescents' life (i.e., their friends) influence their potential to be gritty. With cultural competency as a major tenet in the field of school psychology and educational reform, more broadly, it is critical that we explore ways in which race, peers and academic performance intersect. In addition, given the negative consequences of NCLB on schools composed primarily of racial minorities, this research seeks to determine how racial identity can moderate the relationship between grit and academic success, with race potentially serving as a protective factor. Figure 2 displays the interconnectedness of the individual variables (i.e., demographics, GPA, grit score, conscientiousness score, and MIBI Teen scores), microsystem level variables (i.e., peer comparison of grit score, conscientiousness score and MIBI Teen scores), and the exosystem variable of public regard from the MIBI Teen.

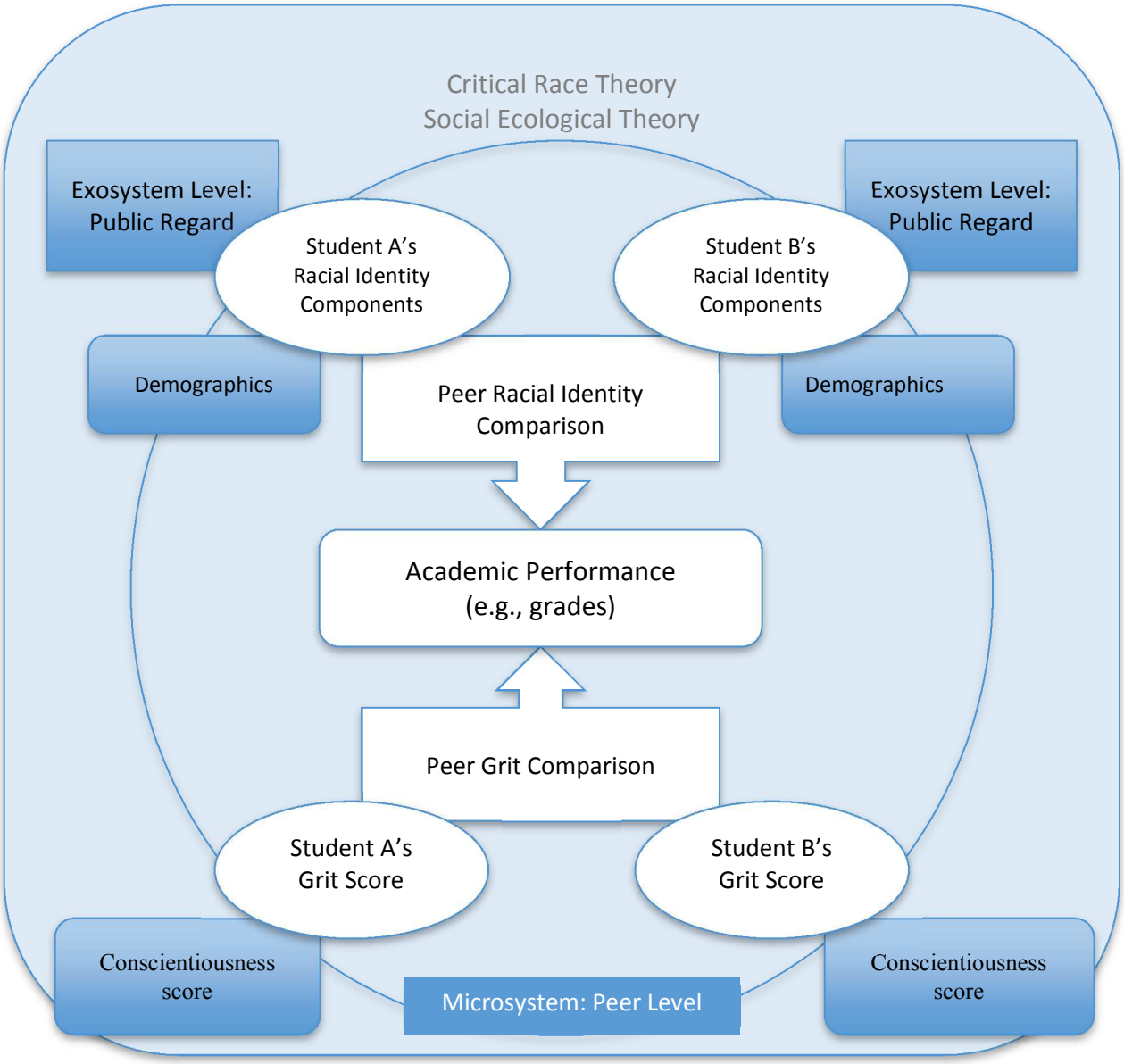


Figure 2. Proposed CRT and Social Ecological Model

CHAPTER III

METHODS

Participants

The research contact at a suburban high school in the Chicagoland area was asked to identify African American adolescent students, ages 14 to 18, who would be best suited for this voluntary research participation. Exclusionary criteria that precluded participation would be students whose cognitive functioning would limit their comprehension of the study participation process (e.g., students with low reading comprehension skills or diminished cognitive functioning), students whose parents opt-out, and students with low English reading or speaking proficiency. The participant pool was selected to include proportionate numbers of students who identify as female and male. Attempts were made for the sample composition to represent equally distributed ages and grade levels. Using the statistical calculator G*Power, to achieve at .80 level, with an effect size of .5, 45 participants were needed in each of the MIBI moderator categories (Faul, Erdfelder, Buchner, & Lang, 2009).

Procedure

The research design used in this study involved a quantitative research procedure using survey data collection. A school record review was requested to gather sampled students' demographics and grade point average (GPA) but this request was denied by the school's administration. Instead, the survey included an item for participants select their current grades (e.g., Mostly As., Bs, Cs, Ds, or Fs).

This design aimed to quantitatively explore, as dependent variables, grit and student success, and the moderating qualities of racial identity components among individuals and peer groups. In the peer-based analysis portion of the quantitative analysis, friend dyads were created based on student nominations of three self-reported close friends who also attend the school.

During the survey data collection period, a survey was made available through a web-based survey platform for two weeks. Students whose parents did not opt-out of the survey participation and who provide assent were given access the survey items. Upon clicking the survey's hyperlink, participants were directed to a page detailing the purpose of the study, an estimate of the survey's length, their rights as a participant, the voluntary nature of the study, and contact information of the primary investigator. After completing their review of this page, participants will be asked to advance from this page and continue to the first survey item.

After local research approval and the university institutional review board approval were granted, potential study participants were recruited through contact with a school administration and staff members. An announcement explaining the research study and directions regarding opt-out procedures were given to the school and used at the discretion of the school's administration per school's guidelines. Students whose parents did not opt out of the study were given details conveying when the survey data collection would take place during the school day. Attempts were made to minimize the interruption of academic instructional time.

Instruments

The instruments for the present study included Duckworth et al.'s (2007) 8-item Grit-S scale, Scottham et al.'s (2008) MIBI-Teen scale, and the conscientiousness scale from the Big Five Inventory.

Grit Measures

The original grit scale (Grit-O; see Appendix A) has 12 items rated on a 5-item scale. The Grit-O measure assesses trait-level perseverance and passion for long-term goals. The Grit-S scale was developed as a brief version of Grit-O and is composed of 8 items rated on a 5-item scale ranging from *very much like me* to *not at all like me*. The subscales on the Grit-S scale are *Consistency of Interest* and *Perseverance of Effort*. The Grit-S measure is scored by summing all items to derive a total score. On a sample of adolescent spelling bee finalists (mean age=13.20 years, SD=1.23), Duckworth et al. (2007) investigated the two-factor structure of the Grit-S measure and reported the Cronbach alpha coefficients for the four-item Consistency of Interest subscale as .76, for the four-item Perseverance of Effort subscale as .65, and for the overall grit scale as .80.

Racial Identity Measure

The MIBI-Teen (MIBI-T; see Appendix B) measure is composed of 21 items rated on a 5-point Likert scale (i.e., *strongly disagree* to *strongly agree*). The MIBI-T is composed of the Centrality subscale, four Ideology subscales and two Regard subscales. The Regard subscales are *private regard* and *public regard*. The Ideology subscales are *nationalism, humanism, assimilation,* and *oppressed minority*. Each subscale consists of three items each. The MIBI-T is scored by are averaging scores across each subscale's three items to compute a subscale composite score. The internal consistency, as measured by Cronbach's alpha coefficients on a sample of 489 African American adolescents (mean age=13.7, SD=1.20), are as follows Centrality subscale α =. 55, Private Regard subscale α=. 76, Public Regard subscale α=. 66, Nationalism subscale α=. 70, Humanist subscale α=. 50, Assimilationist subscale= .70,

Oppressed Minority subscale α= .57 (Scottham et al., 2008). The grade breakdown of the validation sample was as follows: 33%, 7th grade; 33%, 8th grade; 18%, 9th grade; and 16%, 10th grade. Female students made up 60% of the validation sample (n=289).

Conscientiousness Measure

The Big Five Inventory (BFI) is a five-factor 44-item self-report measure that uses a 5-point Likert scale to assess personality traits. The BFI subscales and their internal reliabilities on a sample of 829 adults are conscientiousness (α=. 82), extraversion (α=. 86), neuroticism (α=. 87), agreeableness (α=. 79), and openness to experience were and (α=. 83) (John et al., 2008). The Conscientiousness scale describes, "socially prescribed impulse control that facilitates task- and goal–directed behavior" (p. 138). The conscientiousness subscale has been included to establish the predictive validity for the construct of grit separate from conscientiousness due to the grit construct's close association with conscientiousness (Duckworth, 2016).

Demographic and Criterion Data

Demographic data, including participant age, grade level, gender, and eligibility for free or reduced lunch (i.e., a variable to reflect participant social-economic status) was also collected in the survey instrument. The categorical variable, grades, was used as the academic performance criterion variable.

Data Analyses

Data Set Preparation

Prior to conducting data analyses, data were reviewed and seven cases with missing data were excluded from the analysis. For the seven cases, survey records indicate that the respondents entered the survey but did not enter a response for the first question and proceeded

to exit the survey and/or Internet browser. In addition nine cases were excluded from the analysis due to incomplete survey data. Respondents needed to have responded to all grade and grit questions to be considered a completed case. After removing the seven incomplete case records and nine case records with no survey data, there were a total of 50 completed cases. The final data set consisted of 50 cases with completed survey items in the Grit, MIBI, Conscientiousness, and Demographics section of the survey

Missing Variable Data

A review of the descriptive output of the raw dataset determined that there were also missing data in the grit portion of the survey. The survey items, *I am diligent* and *I finish what I began* were missing for all 50 participants. Data from the conscientiousness questions were imputed into the missing grit variables. Specifically, data from two conscientiousness survey items *perseveres until the task is finished* and *does a thorough job* were used to replace the missing values for *I finish what I began* and *I am diligent*, respectively.

Reverse Coding and Recoding of Dependent Variable

For the purposes of this research, academic performance is defined as a self-reported categorical variable, grade. Since the purpose of the majority of the survey questions was to gather respondent perceptions on key constructs, Likert-type scales were used to gather interval data. These data reflected levels of agreement with scale labels placed on each response option. Reverse coding was conducted on the variable, which was presented in the survey with a negative valence. The original grade data was captured in the *grade* variable and the recoded data was entered as the *grades* variable (see Table 1). The *grades* response options were grouped

based on As and Bs indicating above average achievement and grades of Cs and lower indicating average to below average achievement.

Table 1. Grade Reverse and Recoding

Original variable *grade*	Reverse coded *grades*	Recoded binary variable grades
1-Mostly As	1-Mostly Fs	
2-Mostly Bs	2-Mostly Ds	0
3-Mostly Cs	3-Mostly Cs	
4-Mostly Ds	4-Mostly Bs	1
5-Mostly Fs	5-Mostly As	

In the quantitative phase, study 1 included regression analyses to determine the predictive value of specific independent variables on grades as an academic performance outcome. Study 2 sought to determine if friends matched in dyads have correlated grit scores as well as correlated MIBI scores. The purpose of Study 3 was to determine if dyadic differences moderate the relationship between grit and academic performance.

Preliminary Analysis

To check for multicolinearity among the independent variables, intercorrelations between MIBI subscale scores, grit, grit components of perseverance and consistency of effort, conscientiousness, and grades were determined. A series of hierarchical regression models were created to determine the incremental validity of the two components of grit (i.e., perseverance and consistency of effort), overall grit, and conscientiousness in predicting academic outcomes. These analyses replicate Credé, Tynan, and Harms' (2016) recent analysis of the incremental

amounts of variance in academic performance uniquely accounted for by overall grit score, grit component scores, and by conscientiousness. Credé et al. found that the facet of perseverance had the most incremental validity when controlling for conscientiousness and consistency. The predictor variable accounting for the most unique variance in this sample's grades were included in the final regression model. Including the grit components and overall score in the process of defining the independent predictor provides a more refined definition of grit for the final model as recommended in Credé et al.'s meta-synthesis. The final predictor was used in Study 3 to determine the moderating value of dyadic differences in MIBI profiles on the relationship between the grit variable and academic performance.

Power Analysis

A power analysis using the F-test statistic was used to determine the appropriate sample size to reject the null hypothesis that there is not a change in R^2 due to the interaction term. The estimated effect size of .3 will be used based on a literature review of correlational analysis using grit as the predictor and academic performance as the outcome (Duckworth & Quinn, 2009). A *p* value of .05, an estimated effect size of .3 or greater, and estimated power level of .80 were used to determine the sample size projections to estimate the moderation effect.

Final Regression Model

Prior to completing this regression analysis, the MIBI profile scores were coded into the appropriate number of variables based on the number of MIBI profiles minus one. Demographic variables including age, gender, grade level and free or reduced lunch eligibility were stepped into the regression model to control for their potential influence on the criterion variable. After this initial set of demographic data were stepped into the model, the second step included grit

score (i.e., overall grit or a component of grit) as the predictor variable and MIBI profile data as the moderator variable. If the conscientiousness score had high incremental validity from the previous analysis, it would have been controlled for in the second step of the model. This, however, was not needed due to the conscientiousness variables exclusion from the model due to its significant correlation with overall grit. The third step included the interaction terms of grit score x each MIBI profile coded variables and controlling for demographics and conscientiousness score, if needed. The F-test for significance of the change in R^2 with a *p* value of .05 and an effect size of .5 or greater were used to determine the moderation effect of an individual's racial identity profile on the relationship between grit and academic performance.

Dyadic Analyses

For Study 2, students nominated a list of three best friends. Friend dyads were created from reciprocal nominations. Grit and MIBI score similarity were compared among dyads of friends using the difference between outcome scores within the dyad. Since conscientiousness scores in Study 1 did not significantly increase the amount of unique variance in grades, it was excluded from the dyad analysis. The proposed dyad was considered indistinguishable, that is, there were not systematic aspects of either dyad member that influenced their dyad selection. Intraclass correlations (ICCs) were calculated between the students in each dyad to estimate the within-dyad significant grit and MIBI differences. There was an assumption of nonindependence within the dyads based on demographic variables, that is, the dyad member's dependent variable values are assumed to influence one another due to their mutual identification as friends. Higher, significant ICCs indicated that there was a linear relationship between the dyad member's scores and that more variance in grades is accounted for within the dyad than outside the dyad structure.

Study 3 entailed determining if significant dyad differences in MIBI subscale scores can moderate the relationship between grit and academic performance. Hierarchical logistic regression was used with overall grit score (or component grit score based on the validity analysis) as the predictor and grades as the dependent variable. The change in R^2 was calculated to determine the amount of unique dependent variable variance accounted for in each model. The F test was used to determine R^2, that is, the change in grade variance accounted for by addition of dyadic dependent variables and if it is significant at $p<.05$.

CHAPTER IV

RESULTS

The following results describe the procedures used to answer the research questions associated with the present study. Research question one set out to determine, at the individual level, do racial identity components moderate the relationship between grit and academic performance? The question was addressed in Study 1. Research question two, addressed in Study 2, determined if there are similarities in scores on the grit scale and racial identity components within mutually identified friend dyads. The final research question, addressed in Study 3, sought to determine if these similarities (or differences) between friends moderate grit-to-academic performance connection.

Study 1

Correlation Matrices

As a foundational step, a correlation matrix was produced to determine the variables that show a moderate-to-high relationship to academic performance and should subsequently be included as moderators in the model. Tables 2, 3 and 4 contain correlation matrices separated by the three different sections of the survey (i.e., grit variables, conscientiousness, and MIBI) and the dependent variable grades. Table in Appendix B displays the correlations between the conscientiousness variables, MIBI variables, and grit variables.

Table 2. Correlations: Grit Variables and Grades

	New ideas and projects distract	Obsessed with idea and lost interest	Set goals and change	Difficulty keeping focus past few months	Interest consistency subscale score	Bounce back	Hard worker	Finish what I begin	Diligent	Perseverance of effort subscale score	Overall grit	Grades
New ideas and projects distract	1.00	.65**	0.12	0.23	.68**	0.07	0.20	0.04	0.06	0.08	.44**	-0.09
Obsessed with idea and lost interest	.65**	1.00	0.20	.26*	.74**	0.13	0.19	0.06	0.12	0.13	.51**	0.04
Set goals and change	0.12	0.20	1.00	.38**	.63**	0.10	.294*	0.07	0.08	0.14	.44**	-0.01
Difficulty keeping focus past few months	0.23	.26*	.38**	1.00	.66**	0.11	.504**	0.10	0.23	.29*	.57**	0.22
Interest consistency subscale score	.68**	.74**	.63**	.66**	1.00	0.10	.41**	0.05	0.14	0.21	.74**	0.06
Bounce back	0.07	0.13	0.10	0.11	0.10	1.00	.26*	.39**	0.21	.65**	.46**	0.09
Hard worker	0.20	0.19	.29*	.50**	.41**	.26*	1.00	.40**	.43**	.72**	.72**	.53**
Finish what I begin	0.04	0.06	0.07	0.10	0.05	.39**	.41**	1.00	.37**	.74**	.51**	0.13
Diligent	0.06	0.12	0.08	0.23	0.14	0.21	.43**	.37**	1.00	.68**	.50**	0.18
Perseverance of effort subscale score	0.08	0.13	0.14	.29*	0.21	.65**	.72**	.74**	.68**	1.00	.79**	.38**
Overall grit	.44**	.51**	.44**	.57**	.74**	.46**	.72**	.51**	.50**	.79**	1.00	.36*
Grades	-0.09	0.04	-0.01	0.22	0.06	0.09	.53**	0.13	0.18	.38**	.36*	1.00

Note. **p < 0.01 level, *p < 0.05 level

Table 3. Correlations: Conscientiousness Variables and Grades

	Thorough job	Careless	Reliable worker	Disorganized	Lazy	Perseveres until finished	Efficient	Plans and follows through	Easily distracted	Total Score	Grades
Grades	0.18	-0.05	.434**	-0.24	-0.09	0.15	0.20	0.18	-0.19	0.08	1.00
Thorough job	1.00	.271*	.628**	.285*	0.22	.332*	.496**	.384**	.280*	.668**	0.18
Careless	.271*	1.00	0.15	.344**	.457**	0.10	0.03	0.03	.318*	.472**	-0.05
Reliable worker	.628**	0.15	1.00	0.14	0.18	.395**	.606**	.447**	0.13	.633**	.434**
Disorganized	.285*	.344**	0.14	1.00	.632**	0.15	0.14	0.08	.589**	.609**	-0.24
Lazy	0.22	.457**	0.18	.632**	1.00	0.21	0.00	-0.07	.639**	.605**	-0.09
Perseveres until finished	.332*	0.10	.395**	0.15	0.21	1.00	.529**	0.19	0.23	.534**	0.15
Efficient	.496**	0.03	.606**	0.14	0.00	.529**	1.00	.548**	0.08	.560**	0.20
Plans and follows through	.384**	0.03	.447**	0.08	-0.07	0.19	.548**	1.00	0.05	.398**	0.18
Easily distracted	.280*	.318*	0.13	.589**	.639**	0.23	0.08	0.05	1.00	.606**	-0.19
Total Score	.668**	.472**	.633**	.609**	.605**	.534**	.560**	.398**	.606**	1.00	0.08

**p< 0.01 level, *p< 0.05 level

Table 4. Correlations: MIBI Variables and Grades

			Centrality			
		Grades	Closeness	Sense of belonging	Self-description as Black	Centrality Score
Centrality	Closeness	0.17	1.00	.478**	0.24	.763**
	Sense of belonging	0.14	.478**	1.00	0.19	.744**
	Self-description as Black	0.00	0.24	0.19	1.00	.654**
	Centrality Score	0.15	.763**	.744**	.654**	1.00
Private Regard	Happy to be Black	0.07	.354**	.353**	.465**	.529**
	Proud to be Black	0.22	.370**	.417**	.296*	.483**
	Feel good about being Black	0.14	.419**	.421**	.456**	.581**
	Private Regard Score	0.18	.436**	.452**	.461**	.617**
Public Regard	Blacks as smart as others	-0.03	0.10	0.04	0.13	0.08
	Blacks as good as others	-0.04	0.26	.269*	0.06	0.22
	Blacks made important contributions	0.11	.329*	0.26	0.05	0.25
	Public Regard Score	0.00	0.26	0.21	0.07	0.21

			Centrality				
			Grades	Closeness	Sense of belonging	Self-description as Black	Centrality Score
Ideology	Nationalist	Children surrounded by Black art	0.23	.389**	.465**	0.04	.370**
		Buy from Black businesses	0.20	.314*	.421**	0.10	.338*
		Support Black entertainment	0.25	.265*	.366**	0.05	.273*
		Overall Nationalist Ideology Score	.286*	.377**	.492**	0.05	.386**
	Humanist	Individual more important than Blackness	0.27	.271*	.406**	0.10	.324*
		More individual than Black	0.14	.353**	.312*	-0.01	0.26
		Consider race when deciding movie to see	.361**	0.15	.396**	-0.04	0.19
		Overall Humanist Ideology Score	.350*	.303*	.448**	-0.02	.305*
	Assimilationist	Blacks go to White Schools	-0.10	-0.11	0.14	0.20	0.06
		Not acting Black around White people	-0.13	-0.10	.296*	-0.06	0.01
		Act more like White people to be successful	-0.08	0.18	0.11	0.12	0.13
		Overall Assimilationist Ideology Score	-0.16	-0.08	0.22	0.07	0.06
	Oppressed Minority	All minorities together against discrimination	0.25	.428**	.416**	0.20	.451**
		Other people experience similar discrimination	.323*	.395**	.382**	0.15	.394**
		Blacks should spend more time on similarities to other minorities	0.23	.565**	.364**	0.11	.440**
		Overall Oppressed Minority Ideology Score	.349*	.554**	.458**	0.16	.517**

		Private Regard			
		Happy to be Black	Proud to be Black	Feel good about being Black	Private Regard Score
Centrality	Closeness	.354**	.370**	.419**	.436**
	Sense of belonging	.353**	.417**	.421**	.452**
	Self-description as Black	.465**	.296*	.456**	.461**
	Centrality Score	.529**	.483**	.581**	.617**
Private Regard	Happy to be Black	1.00	.702**	.620**	.905**
	Proud to be Black	.702**	1.00	.459**	.840**
	Feel good about being Black	.620**	.459**	1.00	.809**
	Private Regard Score	.905**	.840**	.809**	1.00
Public Regard	Blacks as smart as others	0.20	.298*	0.14	0.23
	Blacks as good as others	0.20	.323*	.363**	.331*
	Blacks made important contributions	0.06	0.19	0.15	0.14
	Public Regard Score	0.19	.352**	.271*	.307*

		Private Regard			
		Happy to be Black	Proud to be Black	Feel good about being Black	Private Regard Score
Nationalist	Children surrounded by Black art	.28*	.31*	.28*	.32*
	Buy from Black businesses	.35**	.47**	.33*	.43**
	Support Black entertainment	0.19	.48**	0.22	.33*
	Overall Nationalist Ideology Score	.32*	.50**	.33*	.44**
Humanist	Individual more important than Blackness	.35**	.44**	.32*	.42**
	More individual than Black	0.23	0.23	0.23	0.25
	Consider race when deciding movie to see	.27*	.37**	0.26	.34*
	Overall Humanist Ideology Score	.34*	.42**	.32*	.41**
Assimilationist	Blacks go to White Schools	-0.07	-0.12	0.00	-0.10
	Not acting Black around White people	0.20	0.13	-0.07	0.08
	Act more like White people to be successful	0.07	0.05	-0.04	0.01
	Overall Assimilationist Ideology Score	0.05	-0.03	-0.10	-0.05
Oppressed Minority	All minorities together against discrimination	.47**	.59**	.40**	.56**
	Other people experience similar discrimination	.33*	.42**	0.24	.37**
	Blacks should spend more time on similarities to other minorities	.49**	.35**	.39**	.47**
	Overall Oppressed Minority Ideology Score	.52**	.56**	.41**	.57**
	Grades	0.07	0.22	0.14	0.18

		Public Regard			
		Blacks as smart as others	Blacks as good as others	Blacks made important contributions	Public Regard Score
Centrality	Closeness	0.10	0.26	.329*	0.26
	Sense of belonging	0.04	.269*	0.26	0.21
	Self-description as Black	0.13	0.06	0.05	0.07
	Centrality Score	0.08	0.22	0.25	0.21
Private Regard	Happy to be Black	0.20	0.20	0.06	0.19
	Proud to be Black	.298*	.323*	0.19	.352**
	Feel good about being Black	0.14	.363**	0.15	.271*
	Private Regard Score	0.23	.331*	0.14	.307*
Public Regard	Blacks as smart as others	1.00	.337*	.358**	.760**
	Blacks as good as others	.337*	1.00	.440**	.786**
	Blacks made important contributions	.358**	.440**	1.00	.718**
	Public Regard Score	.760**	.786**	.718**	1.00

		Public Regard			
		Blacks as smart as others	Blacks as good as others	Blacks made important contributions	Public Regard Score
Nationalist	Children surrounded by Black art	-0.04	0.06	0.01	-0.03
	Buy from Black businesses	-0.14	.264*	0.25	0.11
	Support Black entertainment	0.16	0.21	0.14	0.20
	Overall Nationalist Ideology Score	-0.03	0.20	0.15	0.10
Humanist	Individual more important than Blackness	0.21	0.16	0.26	0.24
	More individual than Black	.279*	0.16	.476**	.347**
	Consider race when deciding movie to see	0.11	0.19	0.10	0.15
	Humanist Ideology Score	0.22	0.18	.334*	.291*
Assimilationist	Blacks go to White Schools	0.13	0.14	0.11	0.13
	Not acting Black around White people	0.22	0.09	0.13	0.16
	Act more like White people to be successful	0.14	0.05	0.22	0.12
	Overall Assimilationist Ideology Score	0.19	0.09	0.18	0.16
Oppressed Minority	All minorities together against discrimination	0.23	.299*	.415**	.376**
	Other people experience similar discrimination	.315*	0.18	.339*	.333*
	Blacks should spend more time on similarities to other minorities	0.23	0.17	0.16	0.22
	Overall Oppressed Minority Ideology Score	.293*	0.25	.361**	.368**
	Grades	-0.03	-0.04	0.11	0.00

		Ideology							
		Nationalist				Humanist			
		Children surrounded by Black art	Buy from Black businesses	Support Black entertainment	Overall Nationalist Ideology Score	Individual more important than Blackness	More individual than Black	Consider race when deciding movie to see	Overall Humanist Ideology Score
Centrality	Closeness	.389**	.314*	.265*	.377**	.271*	.353**	0.15	.303*
	Sense of belonging	.465**	.421**	.366**	.492**	.406**	.312*	.396**	.448**
	Self-description as Black	0.04	0.10	0.05	0.05	0.10	-0.01	-0.04	-0.02
	Centrality Score	.370**	.338*	.273*	.386**	.324*	0.26	0.19	.305*
Private Regard	Happy to be Black	.278*	.346**	0.19	.320*	.350**	0.23	.267*	.341*
	Proud to be Black	.306*	.465**	.479**	.504**	.439**	0.23	.371**	.424**
	Feel good about being Black	.285*	.327*	0.22	.325*	.316*	0.23	0.26	.319*
	Private Regard Score	.324*	.429**	.333*	.435**	.420**	0.25	.338*	.414**
Public Regard	Blacks as smart as others	-0.04	-0.14	0.16	-0.03	0.21	.279*	0.11	0.22
	Blacks as good as others	0.06	.264*	0.21	0.20	0.16	0.16	0.19	0.18
	Blacks made important contributions	0.01	0.25	0.14	0.15	0.26	.476**	0.10	.334*
	Public Regard Score	-0.03	0.11	0.20	0.10	0.24	.347**	0.15	.291*

		Ideology							
		Assimilationist				Oppressed Minority			
		Blacks go to White Schools	Not acting Black around White people	Act more like White people to be successful	Overall Assimilationist Ideology Score	All minorities together against discrimination	Others experience similar discrimination	Blacks should spend more time on similarities to other minorities	Overall Oppressed Minority Ideology Score
Centrality	Closeness	-0.11	-0.10	0.18	-0.08	.428**	.395**	.565**	.554**
	Sense of belonging	0.14	.296*	0.11	0.22	.416**	.382**	.364**	.458**
	Self-description as Black	0.20	-0.06	0.12	0.07	0.20	0.15	0.11	0.16
	Centrality Score	0.06	0.01	0.13	0.06	.451**	.394**	.440**	.517**
Private Regard	Happy to be Black	-0.07	0.20	0.07	0.05	.467**	.326*	.490**	.517**
	Proud to be Black	-0.12	0.13	0.05	-0.03	.594**	.422**	.346**	.555**
	Feel good about being Black	0.00	-0.07	-0.04	-0.10	.396**	0.24	.392**	.407**
	Private Regard Score	-0.10	0.08	0.01	-0.05	.558**	.373**	.468**	.572**
Public Regard	Blacks as smart as others	0.13	0.22	0.14	0.19	0.23	.315*	0.23	.293*
	Blacks as good as others	0.14	0.09	0.05	0.09	.299*	0.18	0.17	0.25
	Blacks made important contributions	0.11	0.13	0.22	0.18	.415**	.339*	0.16	.361**
	Public Regard Score	0.13	0.16	0.12	0.16	.376**	.333*	0.22	.368**

		Nationalist				Humanist			
		Children surrounded by Black art	Buy from Black businesses	Support Black entertainment	Overall Nationalist Ideology Score	Individual more important than Blackness	More individual than Black	Consider race when deciding movie to see	Overall Humanist Ideology Score
Nationalist	Children surrounded by Black art	1.00	.581**	.563**	.849**	0.23	0.23	.360**	.319*
	Buy from Black businesses	.581**	1.00	.450**	.825**	0.16	0.16	.287*	0.23
	Support Black entertainment	.563**	.450**	1.00	.804**	0.21	0.18	.379**	.302*
	Overall Nationalist Ideology Score	.849**	.825**	.804**	1.00	0.22	0.21	.399**	.330*
Humanist	Individuality more important than Blackness	0.23	0.16	0.21	0.22	1.00	.467**	.422**	.781**
	More individual than Black	0.23	0.16	0.18	0.21	.467**	1.00	.431**	.794**
	Consider race when deciding movie to see	.360**	.287*	.379**	.399**	.422**	.431**	1.00	.780**
	Overall Humanist Ideology Score	.319*	0.23	.302*	.330*	.781**	.794**	.780**	1.00
Assimilationist	Blacks go to White Schools	0.13	0.25	0.08	0.17	0.01	0.14	0.03	0.04
	Not acting Black around White people	0.17	0.08	0.11	0.12	.271*	0.26	0.22	.283*
	Act more like White people to be successful	0.19	0.17	0.12	0.17	0.16	0.16	0.02	0.11
	Overall Assimilationist Ideology Score	0.18	0.20	0.10	0.18	0.16	0.23	0.08	0.17
Oppressed Minority	Minorities together against discrimination	.402**	.370**	.330*	.432**	.440**	.398**	.520**	.559**
	Other people experience similar discrimination	.285*	0.25	.525**	.416**	0.25	.443**	.403**	.450**
	Spend more time on minority similarities	.346**	0.09	0.21	0.24	.485**	.472**	.405**	.559**
	Overall Oppressed Minority Ideology Score	.404**	.269*	.415**	.428**	.470**	.519**	.532**	.637**
	Grades	0.23	0.20	0.25	.286*	0.27	0.14	.361**	.350*

		Assimilationist				Oppressed Minority			
		Blacks go to White Schools	Not acting Black around White people	Act more like White people to be successful	Assimilationist Ideology Score	All minorities together against discrimination	Other people experience similar discrimination	Blacks should spend more time on similarities to other minorities	Overall Oppressed Minority Ideology Score
Nationalist	Children surrounded by Black art	0.13	0.17	0.19	0.18	.402**	.285*	.346**	.404**
	Buy from Black businesses	0.25	0.08	0.17	0.20	.370**	0.25	0.09	.269*
	Support Black entertainment	0.08	0.11	0.12	0.10	.330*	.525**	0.21	.415**
	Nationalist Ideology Score	0.17	0.12	0.17	0.18	.432**	.416**	0.24	.428**
Humanist	Individuality more important than Blackness	0.01	.271*	0.16	0.16	.440**	0.25	.485**	.470**
	More individual than Black	0.14	0.26	0.16	0.23	.398**	.443**	.472**	.519**
	Consider race when deciding movie to see	0.03	0.22	0.02	0.08	.520**	.403**	.405**	.532**
	Humanist Ideology Score	0.04	.283*	0.11	0.17	.559**	.450**	.559**	.637**
Assimilationist	Blacks go to White Schools	1.00	.317*	0.07	.701**	-0.10	0.02	-0.02	-0.08
	Not acting Black around White people	.317*	1.00	.341*	.772**	0.13	0.23	0.18	0.19
	Act more like White people to be successful	0.07	.341*	1.00	.592**	0.06	0.15	0.03	0.06
	Assimilationist Ideology Score	.701**	.772**	.592**	1.00	-0.02	0.14	0.04	0.04
Oppressed Minority	All minorities together against discrimination	-0.10	0.13	0.06	-0.02	1.00	.548**	.536**	.861**
	Other people experience similar discrimination	0.02	0.23	0.15	0.14	.548**	1.00	.411**	.786**
	Blacks should spend more time on minority similarities	-0.02	0.18	0.03	0.04	.536**	.411**	1.00	.786**
	Overall Oppressed Minority Ideology Score	-0.08	0.19	0.06	0.04	.861**	.786**	.786**	1.00
	Grades	-0.10	-0.13	-0.08	-0.16	0.25	.323*	0.23	.349*

The independent variables that were moderately to highly correlated with grades and did not have high multicolinearity (i.e., r greater than .06 or less than -.06) were considered for inclusion in regression model (see Table 5).

Table 5. Correlation Matrix for Predictors

	MIBI Nationalist	MIBI Humanist	Reliable worker (Conscientiousness scale	Hard worker (grit scale)	Overall grit	Grades
MIBI Nationalist	1	.33*	.48**	.40**	.43**	.29*
MIBI Humanist	.33*	1	.45**	.46**	.38**	.35*
Reliable worker (Conscientiousness scale)	.48**	.45**	1	.57**	.64**	.43**
Hard worker (grit scale)	.40**	.46**	.57**	1	.72**	.53**
Overall grit	.43**	.38**	.64**	.72**	1	.36*
Grades	.29*	.35*	.43**	.53**	.36*	1

**p <.10, **p<.05*

Given the high and significant correlation between reliable worker (from the conscientiousness scale), the hard worker grit item and overall grit, the reliable worker variable and hard worker were not included in the model. Overall grit as an index score has stronger validity than the item-level (and subscale) scores included in the measure. Therefore, it was given priority in the selection of predictors for the model. The final predictors for the model were overall grit, and the MIBI nationalist and humanist ideology variables with the dependent variable of grades. Review of the demographic variables' correlation to the grade performance (see Table 6) indicated a moderate but significant correlation between grade level and grades ($r = .54$, $p < .01$).

Table 6. Correlations: Grades and Demographic Variables

	Grades	Grade level	Enrolled as freshman	Age	Gender	F/R lunch
Grades	1.00	.539**	0.24	0.16	0.07	0.06
Grade level	.539**	1.00	0.20	.520**	.413**	0.01
Enrolled as freshman	0.24	0.20	1.00	0.02	0.07	-0.13
Age	0.16	.520**	0.02	1.00	.283*	-0.19
Gender	0.07	.413**	0.07	.283*	1.00	0.25
F/R lunch	0.06	0.01	-0.13	-0.19	0.25	1.00

**p <.10, **p<.05*

Note. F/R Lunch=Free or Reduced Lunch

Regression Analysis

Table 7. Variables in the Equation

	B	SE	Wald	df	*p*	Exp(B)
MIBI nationalist	-4.15	4.42	.88	1	.35	.12
MIBI humanist	.64	6.64	.01	1	.92	1.90
Overall grit	5.21	18.90	.8	1	.78	183.41
LN (MIBI nationalist) by MIBI nationalist	2.62	2.33	1.26	1	.26	13.70
LN (MIBI nationalist) by MIBI nationalist	.04	2.98	.00	1	.99	1.04
Overall grit by LN (Overall grit)	-1.77	8.87	.04	1	.84	.17
Constant	-8.32	28.00	.09	1	.77	.00

Model Assumptions

As an initial step, interaction between each predictor and the log of itself was reviewed to check the model assumptions of logit linearity. This review was done to confirm that each of the continuous predictors is linearly related to the log of the grades variable. Table 7 indicates significance values that are greater than .05 for each interaction between the predictor Ln (predictor) therefore indicating that the assumption of linearity of the logit has been met for each predictor (i.e., MIBI nationalist ideology, MIBI humanist ideology, and overall grit). Multicollinearity among the predictor variables was also reviewed using the collinearity diagnostics from a linear regression analysis (see Table 8). The VIFs, or Variance Inflation Factors, indicate the increase in the variance of the predictor if the coefficient was uncorrelated with the other predictors in the model. The VIFs just over 1.00 indicate a low level correlational affect among the predictors (see Table 8). The eigenvalues across models 2 through 4 are of similar magnitude indicating that the model parameter estimates were not be affected by small changes in the predictors or outcome. The data in the final dimension has a condition index of 21.28, which is moderately larger than the indices of the first, second, and third dimension. This may indicate some multicolinearity issues. Upon reviewing eigenvalue 4, there appears to be less interdependency between the predictor variables since there are no variables that share high proportions on the same small eigenvalue (see Table 9).

Table 8. Model 1 Coefficients

	Collinearity Statistics	
	Tolerance	VIF
Overall Grit	.92	1.08
MIBI Humanist	.97	1.03
MIBI Nationalist	.90	1.11

Note. Dependent variable: *Binary grades*

Table 9. Model 1 Collinearity Diagnostics

			Variance Proportions			
Dimension	Eigenvalue	Condition Index	(Constant)	Overall grit	MIBIHUM	MIBI
1	3.87	1.00	.00	.00	.00	.00
2	.08	6.95	.01	.01	.12	.93
3	.04	9.84	.05	.11	.82	.05
4	.01	21.28	.93	.88	.06	.01

Note. Dependent variable: *grades*

Model Results

A binary logistic regression analysis was conducted to create a predictive model of academic performance for 50 students using MIBI Nationalist ideology variable, MIBI humanist ideology variable, and overall grit as predictors as well as the interactions between overall grit x MIBI humanist ideology and overall grit x MIBI nationalist ideology. Logistic regression diagnostics provide data related to cases for which the model fits poorly (i.e., standardized residuals) and cases that influence the model more than others (i.e., Cook's distance, leverage,

DFBeta values) (Field, 2013). A review of the diagnostic residual statistics indicated that the model fit and influence residuals for the majority of the cases were within the recommended parameters.

A test of the Block 2 model against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between the two categories of academic performance (Model chi square = 13.101, $p < .01$ with $df = 2$). There was a significant difference between the previous model, containing only overall grit, and the current model that included MIBI nationalist ideology. The Hosmer and Lemeshow Test suggests that the model is a good fit with $p=.453$ ($p>.05$), however, this test of fit it is highly dependent on sample size.

Nagelkerke's R^2 of .32 indicated a moderate relationship between prediction and grouping. The Block 2 prediction success overall was equal to 68% (50% for the Mostly Cs and Below group and 78.1% for the Mostly As and Bs group) (see Table 10). This was an increase from the 64% prediction success of the base model.

Table 10. Classification Table

	Predicted		
	Grades		Percentage Correct
	Mostly Cs or Below	Mostly As or Mostly Bs	
Mostly Cs or below	9	9	50.0
Mostly As or Mostly Bs	7	25	78.1
Overall Percentage			68.0

Two variables, MIBI nationalist ideology and overall grit made a significant contribution to prediction (p = .01). The MIBI humanist ideology variable (p=. 09 when added at Block 3) was not at or above moderately significant as a predictor nor were the interactions between *overall grit* and the two MIBI ideology variables significant. The Exp(β), or odds ratio, value (see Table 11) indicates that when the MIBI nationalist variable is raised by one unit, the odds ratio is 2.42 times as large and therefore students are 2.42 more times likely to be in the Mostly As and Bs group as the MIBI nationalist variable unit increases by one. The overall grit odds ratio value is 4.37, which indicates that students are 4.37 more times likely to be in the Mostly As and Bs group as the overall grit unit increases by one.

Table 11. Regression Table

	β	S.E.	p	Odds ratio	90% C.I for Odds ratio	
					Lower	Upper
Overall grit	1.48	.83	.07	4.37	1.12	17.01
MIBI Nationalist	.88	.37	.02	2.42	1.32	4.42
Constant	-6.72	2.86	.02	.001		

Note. Nagelkerke's R^2=.32. Model x^2 (2)=13.101, p<.01.

Study 2

Dyad Matching

Participants were asked to nominate up to four friends based on the survey item "For research purposes, please think of other students at your school with whom you like to hang out. You can nominate up to four of your peers. Please list students' names starting with the peer with whom you most like to hang out in the first blank." Students were initially matched into a friend

dyad when each student nominated one another in the first friend nomination position on the survey item. For the remaining participants who were not matched in the initial process, participants were matched with a remaining, non-matched participants that listed them in any of the friend nomination fields. Priority was still given to the order in which the friend was nominated. Nine dyadic pairings were established based on the matching procedure. As recommended by Kenny, Kashy and Cook (2006) for dyadic analysis, the peer-matched data set was transposed into a pairwise structure. In a pairwise dataset, each dyad shares an identification number. Each individual data record includes the individual's outcome score, predictor scores and the dyad partner's predictor score.

Dyadic Dependence

To determine the amount of dependence in the predictor variables due to the friend dyads, the intraclass correlation (ICC) was calculated. ICC is a correlation that provides the amount of dyadic dependence in a variable (Kashy & Kenny, 2000). It is a measure of effect size that is the magnitude of difference among groups in a sample or population and is less affected by small sample sizes. It can also be interpreted as the proportion of variance in grades that is due to a dyadic structure (Cillessen, Jiang, West, & Laszkowski, 2005). The ICC was determined for the MIBI variables and the overall grit variable. A positive ICC indicates a positive dependence or influence between dyad members (i.e., both dyad members are likely to score high on the variable). However, a negative ICC indicates a negative dependence or influence between dyad members, or a lack of similarity between dyad members. If the ICC is equal to zero, there is a lack of interdependence evidence related to the dyadic grouping.

A two-way random effects model was used due to the likelihood of random effects, that is, sample variability, from both participants within each dyad. Also, the average measures ICC was used as each participant's score on the independent variables was independently assessed. There were three instances of ICC reliability falling in the moderate range or higher (see Table 13). Koo and Li (2016) indicate ICCs between less than .5 (or greater than -.5) as poor reliability, .5 and .75 (or -.5 and .75) as moderate reliability, .75-.9 (or -.75 to -.9) as good reliability, and greater than .9 (or lower than -.9) as excellent. Table 12 shows the ICCs that indicate greater than or equal to moderate interdependence.

Table 12. Intraclass Correlations within Dyads

					Ideology			
	Private regard	Public regard	Centrality	Nationalist	Humanist	Assimilation	Optimism	Grit
Private regard	0.37	0.09	-0.32	0.21	-0.42	0.43	0.01	0.09
Public regard	0.07	-0.15	0.53*	0.28	-0.12	0.28	0.26	0.32
Centrality	0.27	0.49*	0.07	0.09	0.20	0.07	0.01	0.12
Ideology: Nationalist	0.33	0.17	0.08	0.52*	0.61**	0.19	0.32	0.31
Ideology: Humanist	0.40	-0.09	0.17	0.64**	0.24	0.22	0.34	0.12
Ideology: Assimilation	0.32	0.31	-0.07	0.07	0.21	-0.12	0.03	0.11
Ideology: Optimism	0.02	0.32	0.06	0.27	0.40	0.09	0.41	0.19
Ideology: Grit	0.17	0.05	0.16	0.34	0.14	0.30	-0.15	0.28

*p <.10, **p <.05; k=9

The four moderate ICC significant effect sizes indicate that the within dyad similarity on the two selected variables accounted for more variance than between dyad variance. Specifically, the relationship between *public regard* and *centrality* (ICC=. 53, p=.06), the *nationalist ideology* of both dyad partners (.52, p=.07), the *nationalist ideology* of one partner and the *humanist*

ideology of the other (ICC=.61, p=.03), and the *humanist ideology* and the *national ideology* (ICC=.64, p=.02) indicate moderate interdependence on these variable within the dyads.

Study 3

The final study proposed to determine if similarities or differences (i.e., variance) between students' racial identity components moderate grit-academic success connection. The predictor variable with the highest incremental validity from Study 1 was MIBI nationalist ideology and was used as both, an individual or level 1, predictor variable and as a dyad, or level 2, predictor variable in the hierarchical linear model for Study 3. Interactions between MIBI and grit data were not found to be significant in Study 2 and were, therefore, not included in the regression equation for Study 3. The F test for significance of the change in R^2 with a *p* value of .05 and an effect size of .5 or greater will be used to determine the moderation effect of an individual's racial identity scores on the relationship between grit and academic performance.

Model 1

An initial maximum-likelihood estimation linear mixed model was run on dyad_id as the grouping variable and grades as the dependent variable. Maximum likelihood estimates maximize the chance of finding sample data akin to what was found in the current study (Field, 2013). This model was constructed as a baseline model to provide the proportion of the total variation in the dependent variable at the dyad level. This model contains no covariates but it includes the intercept dyad_id as well as grades as the dependent variable. An unstructured covariance matrix was used as there was no evidence that the variances in the model would be equal as equal variances would imply that one value would apply to all variances. This sets

grades as random by each dyad_id. The formulas for this baseline hierarchical model is as follows:

$$Grades_{ij} = \beta_{oj} + e_{ij}$$

$$\beta_{oj} = Y_{00} + u_{oj}$$

The final, single equation for the null model, by substituting the second formula for β_{oj} in the first equation is

$$Y_{ij} = Y_{00} + u_{oj} + e_{ij}$$

The estimate for Y_{00} is the mean grade for each dyad and u_{oj} is the variance of the grade mean for each dyad around the overall mean grade score (University of Texas-Austin, 2012).

Table 13. Model 1 Type III Test of Fixed Effects

Parameter	Numerator df	Denominator df	*F*
Intercept	1	9	170.03*

*p <.10, **p <.05

Table 14. Model 1 Hierarchical Model Results Estimate of Fixed Effects

Parameter	Estimate	SE	*p*	90% CI
Intercept	3.83	. 29	.000	3.29 – 4.37

Estimates of Covariance Parameters

Parameter	Estimate	SE	*p*	90% CI
Residual	.72	.34	.034	.33-1.57
Intercept (dyad_ID)	.42	.40	.303	.08-2.05

The mean estimate for the intercept, grades, is 3.83 (see Table 14). According to the parameter estimates in the null model, there is more variance in grades was accounted for by the dyads (.72) than between the dyads (.42) (University of Texas-Austin, 2012). The null model divides the variance into the lowest-level error and the variance of the highest-level errors. With these data, the intraclass coefficient can be calculated to indicate the proportion of variance in grades accounted for by the dyad structure. The ICC is calculated by dividing the variance estimate of the intercept (uoj) by the variance estimate of the residual combined with the variance estimate of the intercept (eij + uoj).

The ICC for Model 1 is as follows:

$$\rho = \frac{\sigma^2_{u0j}}{\sigma^2_{u0j} + \sigma^2_{eij}} = \frac{.42}{.42 + .72} = \frac{.42}{1.14} = .368$$

This indicates that approximately 37% of the total variation in *grades* can be accounted for by the dyad structure, that is, which dyad each student is in. This provides evidence to create a model that is multi-level, that is includes both the student-level and the dyad-level dyad independent variables.

Model 2

A subsequent model was created that included overall grit and MIBI nationalist ideology for the intercepts. The dependent variable of grades remains consistent across all models. These independent variables were treated as fixed covariates, that is, the y-intercept and slopes for each dyad are the same in Model 2. The intercept is modeled as the mean grades across the all dyads (Y_{00}) plus the effect of the average score on *overall grit (*Y_{01}) and MIBI nationalist ideology

(γ_{02}) plus a random error (u_{oj}). The final equation for Model 2 can be expressed as: $Y_{ij=}\ \gamma_{00} + \gamma_{01}$ (grit_oj)$_{+}\ \gamma_{02\,(}$mibination$_{j)+}\ u_{oj} + e_{ij}$

Model 2 provides estimates for the fixed independent variables. For every unit increase in the student's overall grit score, there is a 1.5 increase in their reported grade (see Table 15).

Table 15. Model 2 Type III Test of Fixed Effects

Parameter	Numerator df	Denominator df	F	*p*
Intercept	1	9	.697	.415
Overall grit	1	18	8.993	.008
MIBI Nationalist Ideology	1	18	.000	.991

Table 16. Model 2 Hierarchical Model Results Estimate of Fixed Effects

Parameter	Estimate	*SE*	*p*	90% CI
Intercept	-1.285	2.5	.42	-3.96 – 1.38
Overall grit	1.5706	.52	.01	.66 – 2.48
MIBI Nationalist Ideology	-.00237	.21	.99	-.37 - .37

Estimates of Covariance Parameters

Parameter	Estimate	*SE*	*p*	90% CI
Residual	.6996	.23	.00	.40-1.21

Model 2 was compared to the Model 1 (i.e., the null model) to determine if the inclusion of the varying intercepts and slopes yielded a better model fit. The difference in the models can be assessed by reviewing the chi-square distribution with the degrees of freedom; indicating the

difference in the number of parameters for the compared models. The change in -2 Log Likelihood from Model 1 to Model 2 (X^2_{Change} = 44.654 – 44.292=. 362, df $_{change}$ =1) does not meet the critical value threshold of significance for a chi-square distribution, which is 3.84 ($p < .05$) and 6.63 ($p < .01$) (Field, 2013). This indicates that the model that includes the independent variables does not produce a better fit than the null model.

In sum, the dyadic relationship accounted for a significant amount of variance in the reported grades ($\rho = .36$). However, the relationship between grades, overall grit, and MIBI nationalist ideology did not show significant variance in intercepts across the study participants:

VAR (u_{oj}) = .70, $X^2(1)=.36$, $p>.05$).

CHAPTER V

DISCUSSION

This chapter summarizes the findings of this research and seeks to situate them in the current literature related to grit and to merge racial identity development with its ecological influences. As discussed, a salient critique of the grit research is its lack of ecological grounding. That is, much of the foundational grit literature does not account for the socio-ecological milieu in which adolescents develop their self-concept and strategies to have goals and to persist toward goal attainment (Duckworth, 2016). Acknowledging, from a CRT perspective, that minority children develop within systems wrought with pervasive and permanent racism, it becomes vital to consider the ways in which racial identity can be used to promote social emotional wellness. This is supported by the myriad research that asserts race can serve a promotive and protective factor across many levels of risk. To further place racial identity development within a more realistic framework, the ecology of identity development should be included as a theoretical framework. In this research, the ecological layer of interest was that of adolescent peer dyads. Education research traditionally uses the individual student has the unit of analysis, however, it has become more clear that dyadic analysis can get at the reciprocal and transactional nature of adolescent school experiences with peers.

Study 1 was designed to provide insight into the racial identity components that may moderate the connection between grit and academic performance. The results of Study 1 indicate that scores on the MIBI Ideology-Nationalism subscale has moderating properties in the

connection between grit and academic performance. The odds ratio indicates that with a one-unit increase in the MIBI nationalism subscale score, students are 2.4 more times likely to be in the Mostly As and Bs group. This may point to evidence that endorsing an ideology that African Americans have a shared experience based on racial identity is connected to better academic performance. This finding may support the racial identity research finding of cultural orientation's promotive and protective effects, seen here as a predictive factor in positive academic performance (Neblett et al., 2012). This finding is important as we consider solutions to shore the achievement gap and decrease the disparities in educational progress that disproportionately debilitate marginalized students. There is potential for these findings to serve as evidence supporting racial identity as a protective factor for students and translating that evidence to bolster social emotional well-being, specifically for students of color.

In Study 1, however, overall grit showed a correlational relationship to grades but did not show a strongly predictive effect on academic performance. The predictive effect of grit on grades was not significant ($p=.07$), which may have been affected by the restricted sample size of the study. An increase in sample size could also allow for less range restriction, which is a restriction on the values of the variables in a sample. Decreasing range restriction can increase the power of a study, and help to avoid an artificial reduction of the sample correlations (Schmidt, 2010). This then decreases the chance of a Type II error, that is, a rejection of the null hypothesis when it should not be.

Although, this is finding may be influenced by the sample size in this study, it can also point to the difficulty in extrapolating the findings related to grit and its effect on academic performance with the current study's sample.

The purpose of Study 2 was to explore dyadic nature of racial identity and grit within friend pairs, that is, the similarities and differences in grades accounted for within friend dyads. The results of this study yielded four moderate ICC significant effect sizes among the MIBI ideology subscale scores. This points to a connection between friendship and racial identity components and the possible tendency for students to build friendships with students who share their racial identity ideology. This is evidenced by the significant within-dyad dependence shown within dyad members' MIBI nationalist ideology.

There is also evidence that the dyad structure with one student having endorsed a nationalist ideology and the other student endorsing a humanist ideology account for more variance in the grades than the grade variance accounted for between non-paired individuals. In addition, there was within dyad member similarity in one dyad member's public regard score and the other member's centrality score. These significant effect sizes may highlight the importance of dyadic influence in identity development. However, given the threats to validity as mentioned in Study 1, it is likely that the power of these study outcomes has been compromised. However, these results could point to the importance of both homogeneous (e.g., significant within-dyad MIBI nationalist ideology) and heterogeneous factors within dyads (e.g., within-dyad MIBI nationalist and humanist ideologies). That is, the dyadic findings such as homogenous pairings who both endorsed a MIBI-nationalist ideology highlights the idea of shared experiences based on race connecting students and undergirding adolescent friendships. The more ideological heterogeneous pairings such as the humanist-nationalist dyads and public regard-centrality dyads may indicate an underlying connection between the MIBI racial identity components instead of ideological differences. In theory, the humanist-nationalist dyad may highlight the relational

interchange between adolescents that endorse the idea that all humans have commonalities (i.e., MIBI-humanist) and ideas about how all African Americans should think in act (i.e., MIBI-nationalist). These should not be assumed to be in contradiction to one another but can, instead, be considered as reflective of individual experiences or the socio-ecological, layered connection between a broader human perspective and a perspective more focused on one's racial group. The public regard-centrality dyad pairing may point to the connection between an adolescent who endorses a high African American public regard and an adolescent who holds their African American identity as central to their self-concept. This pairing may highlight the complimentary idea that a friend who perceives the public as having a positive view of African Americans would connect with an adolescent who holds their own African American identity as central to who they are.

Study 3 sought to merge the ideas from Study 1 and Study 2 by exploring racial identity, grit, and academic performance from an ecological perspective. This study looked at the potential moderating qualities of the similarities and dissimilarities in friend dyads on the MIBI racial identity components. Specifically, this analysis explored if these within-dyad qualities can moderate grades. The outcomes indicated that the dyadic relationship was meaningful, as this relationship accounted for a significant amount of variance in the reported grades. However, the relationship between grades, overall grit, and MIBI nationalist ideology did not show significant variance between the study participants. Similar to the findings in Study 1 and Study 2, the external validity and power in Study 3 is likely compromised and the standard error likely increased given the limited sample size.

Summary

The presented research can help to develop a more socio-ecological view of grit and begin to address the critiques of grit related to viewing student performance in isolation of multi-layered social factors affecting students' lives. Exploring factors at the individual-level can shed light on the variables that can predict an individual's propensity to build and sustain the grit-to-academic success connection. Adding the dyad as the unit of analysis, acknowledges the influence of peer connections on the development of racial identity during adolescence. This ecological view provides a more realistic, socially based picture of how grit is influenced by racial identity and how racial identity is influenced by peer interaction.

Determining these levels of influence can serve as a source of insight to help bolster grit in students by determining how racial identity can moderate grit. In addition, this study can further the research on race as a protective factor and center specific racial identity components in the intervention research to nurture students' socio-emotional needs. Increasing the pedagogical emphasis on race vis-a-vis racial identity components as a protective factor that can influence behavior and psychosocial outcomes (Chavous et al., 2003). This research can also facilitate the discussion related to identity formation, race, and the discussion of systemic factors. In addition to broadening the research on grit and racial identity as a protective factor, the present study seeks to help schools gain insight on how to incorporate racial identity research into school-based intervention but to also help build self-awareness related to racial identity as a protective factor for adolescents and how it may function in their peer relationships.

As CRT posits that racism and discrimination are pervasive and permanent, particularly in societal systems such as the education arena, it is important to recognize its continual impact

on minority students. Recognizing the ever-present and adversity-inducing nature of racism and the known protective impact of racial identity underscores the need for school-based interventions that include racial identity components.

Limitations

The results of this research may have limited generalizability due to the unique aspects of the sample. One specific aspect that could limit generalizability is that the sample was chosen from students who received the school's ROAR intervention for at-risk students. These students were identified as having higher than average disciplinary issues and academic concerns during the transition between 8th grade and their 9th grade year. These unique aspects of this sample could diminish the external validity of the study results. This aspect of the sample as unique and taken from a group of students, from one school with a shared similar experience in terms of their exposure to long-term intervention could also threaten the internal validity as it presents a higher likelihood of latent, correlated variables that could confound the findings. Moreover, the unique nature of the sample could affect internal reliabilities of the constructs within the instruments used to form the dependent variables used in this study.

Analyzing data from a unique sample of students affects validity but these effects can also be exacerbated by the limited sample size of the study. The limited sample size can lead to sampling error, which lowers the likelihood of extrapolating the inferences from the present sample correlations to a wider population that it is meant to represent (e.g., other African American adolescents) (Kelley & Maxwell, 2003).

The limited sample size increases the amount of standard error and produces wider than ideal confidence intervals. This also limits the power of the analysis and increases the likelihood

of a Type I error; leading to an inaccurate rejection of the null hypothesis. In Study 2, for example, this can manifest itself as significant variance in the dependent variable grades that would appear to be explained by the dyadic structure. With a limited sample size leading to more Type I error potential, one must carefully interpret the inferences of the present study.

Recommendations for Future Research

Sample Characteristics

The current research had a sample size of 50 individual students, which yielded nine dyad pairs. The proposed sample size was 45 participants from each MIBI category. Due to the below target sample size, cluster analysis did not occur and the sample size projections per MIBI category were not met. Instead, the MIBI response data were analyzed as continuous variables across all studies. Future research could conduct the cluster analysis to determine if a larger sample of participants fall into clusters as seen in other MIBI research (Blackmon & Thomas, 2015; Chavous et al., 2003). This would allow for a pattern-based approach that allows for the MIBI components to be treated as connected pieces of one's identity. In addition, future research could include internal reliability analysis for the MIBI, grit and conscientiousness scales to confirm that the degree to which sample distinctiveness leads to deviations in each instruments' expected internal consistency.

Dyadic and Socio-Ecological Research

Although adequate power was not maintained for this analysis, the use of a socio-ecological analytical approach can be used to further analyze the layered influences that affect minority adolescents. The current research points to the need for an increase in dyadic analysis, particularly in education research, as paired work is common practice in the classroom and in

social-interactional frameworks in general. Including the dyad as the unit of analysis can serve as a method to step away from the focus on the individual in isolation and account for the external layers of influence in a student's life. Socio-ecological modeling in education research can extend from the friend dyads as shown in the current research to patterns related to paired work assignments, tertiary school services with individual, one-on-one intervention between school staff and a student.

Also this research focused on the individual and the peer dyad as unit of analysis, the goal was to add to the field of education research by using in social ecological approach to academic performance analysis. This approach included peer dyads with the hope of future consideration of other influential layers. This could include the addition of parent racial identity components and their grit levels to determine the level of influence the family unit has on the individual student's grit and racial identity development. This influence can then be explored to compare student's qualities to those of his or her parents and to determine if these family-based qualities have an additive moderating influence on students' performance. Additionally, this analytical structure can possibly be applied to the classroom setting to explore teacher-student pairings and the constructs within these pairings that influence student, and perhaps, teacher performance. Additionally, as put forth by the current study, exploration of the multilayered context in which adolescence develop could also address some of the key criticisms of grit research related to its singular, individualistic focus (Herold, 2015; Shaw et al. 2016).

Additional Qualitative Research

Qualitative research exploring the participants' awareness of their own racial identity components and grit levels could create richer data. This could involve exploring the

participants' awareness of their own racial identity components and grit levels. These self-reflective perspectives on grit and racial identity and their impact on academic performance could serve as a foundation to interventions that include critical and participant-based perspectives on race, grit, and the socio-ecological layers that influence adolescents. Collecting rich qualitative data could serve as a foundation to interventions that include critical and participant-based perspectives on race, grit, and the socio-ecological layers that influence adolescents.

More specifically, qualitative data could be collected via focus groups to further explore the participant's perspectives on their own levels of grit, their racial identity development, how peers influence this development, and their perceptions of how public perceptions shape their experience as a racial minority student. Focus group data could then be analyzed for themes that will be compared to the outcomes found in the quantitative phases. Juxtaposing the potential predictive qualities that these socio-ecological factors have on grit's impact on academic success can provide insight into how social emotional learning programs can incorporate racial identity dimensions and peer group connections into interventions for noncognitive factors and academic success.

Conclusion

The present study was not able to answer the original research question related to the ecological moderators that influence the grit-academic performance relationship. However, there were post hoc questions that were answered. For example, the overall grit and grades were correlated in this study, which supports the research that indicates that there is a relationship between grit and academic success. Also, the reliability statistics indicate that the

operationalization of the family support and community support constructs was successful given the moderately high Cronbach's alpha on each on these matrices (i.e., *.806* and.*705*, respectively). This reliability analysis gives insight into the factors that can be considered as family and community ecological factors that may contribute to student success. Further analysis, such as regression, could provide additional insight on this area.

This research was designed to begin the analytical and theoretical process of shedding light on the possible ecological factors that could lie at the root of the grit-academic performance relationship. With this shift toward a more ecological perspective, it moves us away from a more singular focus on the individual student's noncognitive factor and allows us to analyze the surrounding factors that may have better chance at being improved at a systemic level. The possibility of systems-level shift could facilitate universal interventions rooted in identify vulnerabilities across multiple ecological settings and improving a student's likelihood for persistent progress toward their goals.

APPENDIX A

SURVEY

LOYOLA UNIVERSITY CHICAGO

Grit, Grades, Friends, and Identity

Introduction

Dissertation Project Title: Socio-Ecological Moderating Factors in the Grit-Academic Achievement Relationship
Researcher: Keeshawna Brooks
Faculty Sponsor: David Shriberg

You are being asked to take part in a research study being conducted by Keeshawna Brooks for dissertation research, under the supervision of David Shriberg, in the Department of School Psychology at Loyola University of Chicago. You are being asked to participate because you are an African American adolescent student currently enrolled in a high school in the Chicago area. Please read this form carefully and ask any questions you may have before deciding whether to participate in the study.

Purpose:
The purpose of this survey is to assess your perceptions of how individual factors and your peers impact your education. As a student, you can provide important perspectives on how these factors influence your life as a student. This survey is a part of a dissertation research project.

Procedures:
If you agree to be in this dissertation study, you will be asked to complete an online survey regarding your own racial identity and other characteristics. For research comparison purposes, you will also be asked to provide a list of three other African American students in the school that you identify as your friends. It is expected the survey will take approximately 15-20 minutes to complete.

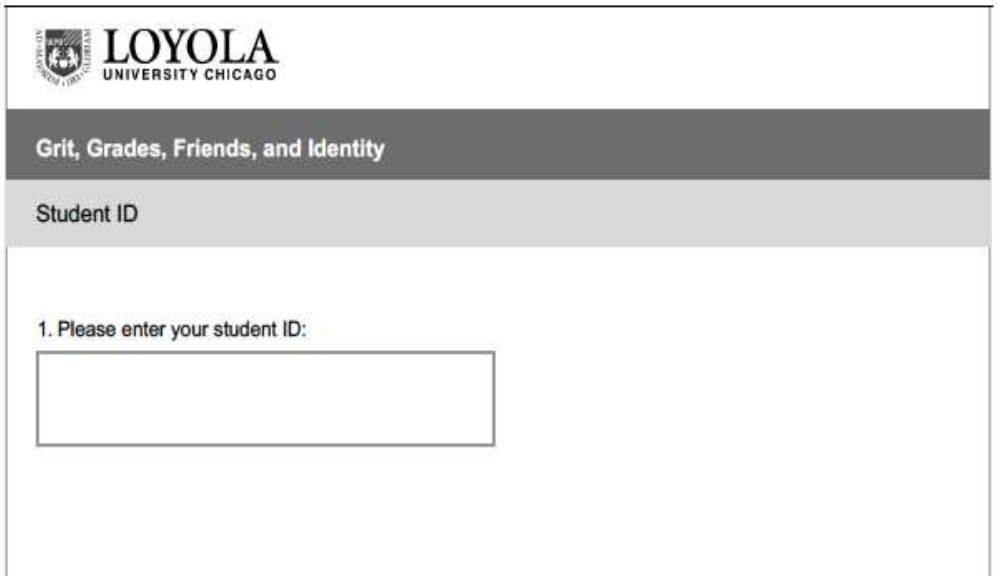
Risk/Benefits:
There are no foreseeable risks involved in participating in this research beyond those typically experienced in everyday life as a student. There are no direct benefits to you from participation but this research will provide insight into what you and your friends think about race, being gritty, and school performance.

Confidentiality:
All of your responses on the survey will remain anonymous and all of your responses will be securely stored electronically. Your personal identifying information is required for your participation in this survey.

Voluntary Participation:
Participation in this dissertation study is voluntary. If you do not want to be in this study, you do not have to participate. If you decide to participate, you are free not to answer any question or to withdraw from participation at any time without penalty.

Contacts and Questions:
If you have questions about this research project, please feel free to contact Keeshawna Brooks at kbrooks2@luc.edu or the faculty sponsor David Shriberg at dshriberg@luc.edu. If you have any questions concerning your rights as a research participant, you may contact the Loyola University Chicago Office of Research Services (IRB) at (773) 508-2689.

By clicking next, you are indicating that you agree to voluntarily participate in this survey.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Student ID
1. Please enter your student ID:

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Grit, Grades, Friends, and Identity

Multidimensional Inventory of Black Identity-Teen (MIBI-Teen)

2. Please respond to the following statements using theReally Disagree to Really Agree scale. There are no right or wrong answers.

	Really Disagree	Kind of Disagree	Neutral	Kind of Agree	Really Agree
I feel close to other Black people	○	○	○	○	○
I have a strong sense of belonging to other Black people.	○	○	○	○	○
If I were to describe myself to someone, one of the first things that I would say is that I'm Black.	○	○	○	○	○
I am happy that I am Black.	○	○	○	○	○
I am proud to be Black.	○	○	○	○	○
I feel good about Black people.	○	○	○	○	○
Most people think that Blacks are as smart as people of other races.	○	○	○	○	○
People think that Blacks are as good as people from other races.	○	○	○	○	○
People from other races think Blacks have made important contributions.	○	○	○	○	○
Black parents should surround their children with Black art and Black books.	○	○	○	○	○
Whenever possible, Blacks should buy from Black businesses.	○	○	○	○	○

	Really Disagree	Kind of Disagree	Neutral	Kind of Agree	Really Agree
Blacks should support Black entertainment by going to Black movies and watching Black TV shows.	○	○	○	○	○
Being an individual is more important than identifying yourself as Black.	○	○	○	○	○
Blacks should think of themselves as individuals, not as Blacks	○	○	○	○	○
Black people should not consider race when deciding what movies to go see.	○	○	○	○	○
It is important that Blacks go to White schools so that they can learn how to act around Whites.	○	○	○	○	○
I think it is important for Blacks not to act Black around White people.	○	○	○	○	○
Blacks should act more like Whites to be successful in this society.	○	○	○	○	○
People of all minority groups should stick together and fight discrimination.	○	○	○	○	○
There are other people who experience discrimination similar to Blacks.	○	○	○	○	○
Blacks should spend less time focusing on how we differ from other minority groups and more time focusing on how we are similar to people from other minority groups.	○	○	○	○	○

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Grit, Grades, Friends, and Identity

Big Five Conscientiousness-*How I am in general*

3. Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who does a thorough job? Please respond to the following statements using the Disagree Strongly to Agree Strongly scale. Again, there are no right or wrong answers.

I am someone who…

	Disagree Strongly	Disagree a Little	Neither agree nor disagree	Agree a Little	Agree Strongly
Does a thorough job	○	○	○	○	○
Can be somewhat careless	○	○	○	○	○
Is a reliable worker	○	○	○	○	○
Tends to be disorganized	○	○	○	○	○
Tends to be lazy	○	○	○	○	○
Perseveres until the task is finished	○	○	○	○	○
Does things efficiently	○	○	○	○	○
Makes plans and follows through with them	○	○	○	○	○
Is easily distracted	○	○	○	○	○

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Grit, Grades, Friends, and Identity

Grit-S

4. Please respond to the following eight items using the Not At All Like Me to Very Much Like Me scale
Please be as honest as you can–there are no right or wrong answers.

	Not Like Me At All	Not Much Like Me	Somewhat Like Me	Mostly Like Me	Very Much Like Me
New ideas and projects sometimes distract me from previous ones.	○	○	○	○	○
Setbacks (delays and obstacles) don't discourage me. I bounce back from disappointments faster than most people.	○	○	○	○	○
I have been obsessed with a certain idea or project for a short time but later lost interest.	○	○	○	○	○
I am a hard worker.	○	○	○	○	○
I often set a goal but later choose to pursue (follow) a different one.	○	○	○	○	○
I have difficulty maintaining (keeping) my focus on projects that take more than a few months to complete.	○	○	○	○	○

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Grit, Grades, Friends, and Identity

Friend Nominations

5. For research purposes, please think of other students at St. Ignatius with whom you like to hang out. You can nominate up to four of your peers. Please list students' names in descending order starting with the peer with whom you most like to hang out. Please list their first and last names and their grade level below:

Friend #1 Name & Grade:

Friend #2 Name & Grade:

Friend #3 Name & Grade:

Friend #4 Name & Grade:

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Grit, Grades, Friends, and Identity

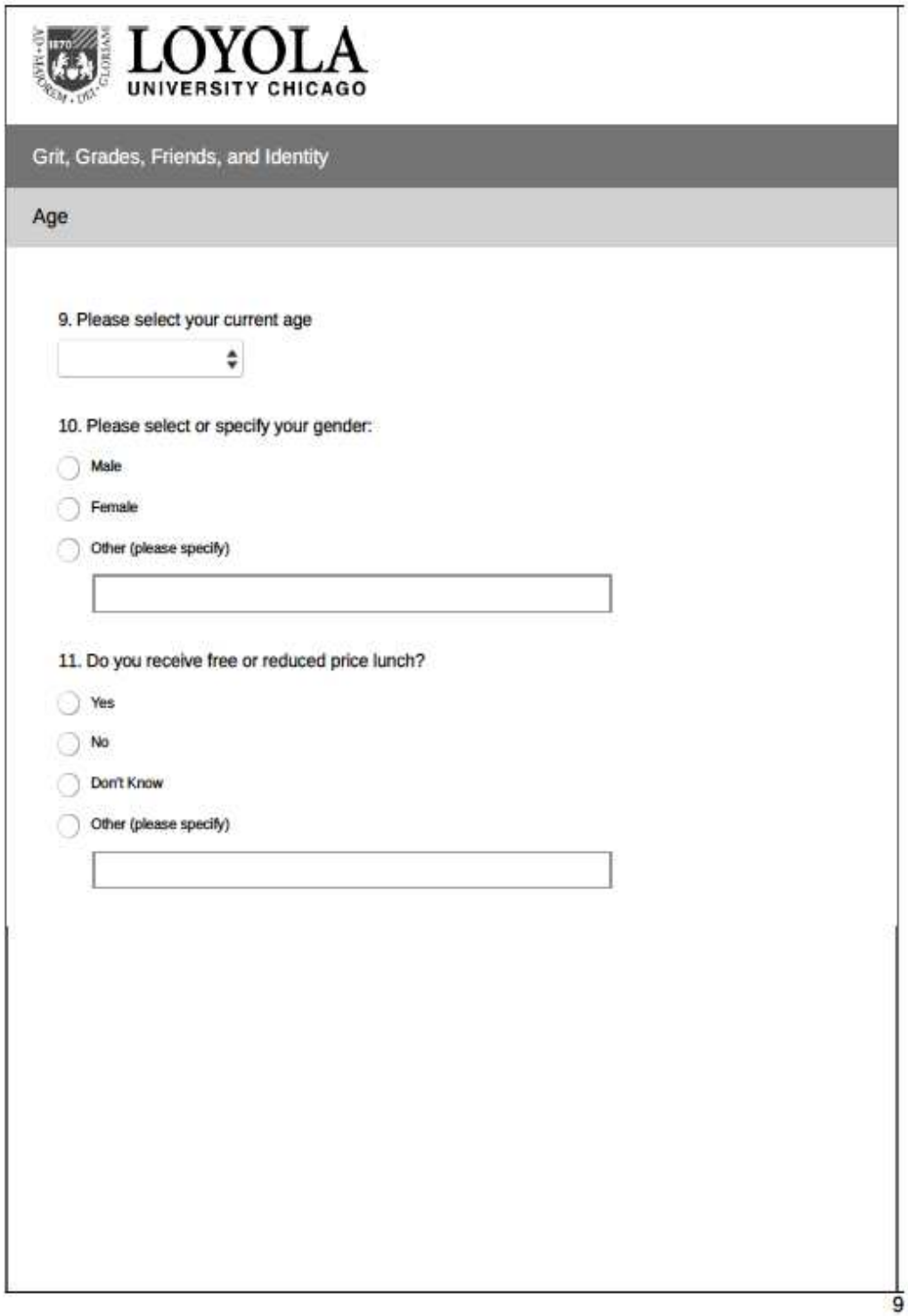
Demographics

6. Please select your current grade level:

- ○ 9th grade/Freshman
- ○ 10th grade/Sophomore
- ○ 11th grade/Junior
- ○ 12th grade/Senior
- ○ Other (please specify)

7. Did your start at St. Ignatius as a freshman?

- ○ Yes
- ○ No



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Grit, Grades, Friends, and Identity

Age

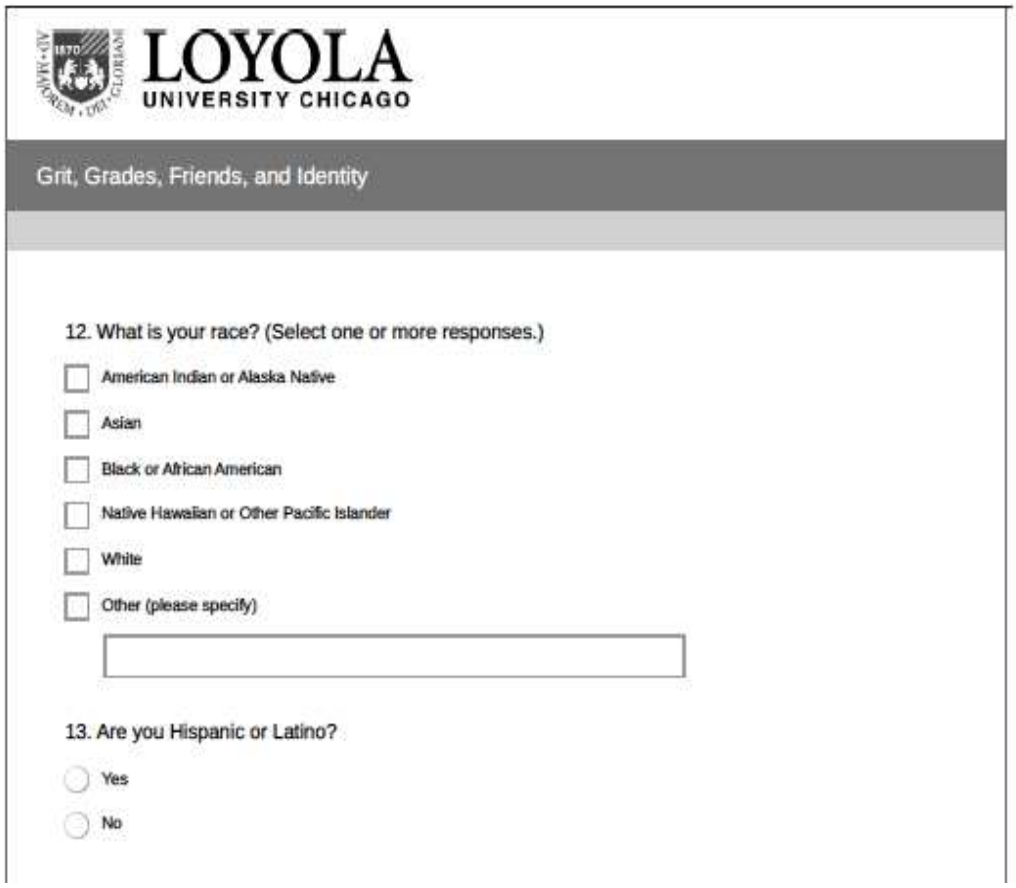
9. Please select your current age

10. Please select or specify your gender:

- Male
- Female
- Other (please specify)

11. Do you receive free or reduced price lunch?

- Yes
- No
- Don't Know
- Other (please specify)



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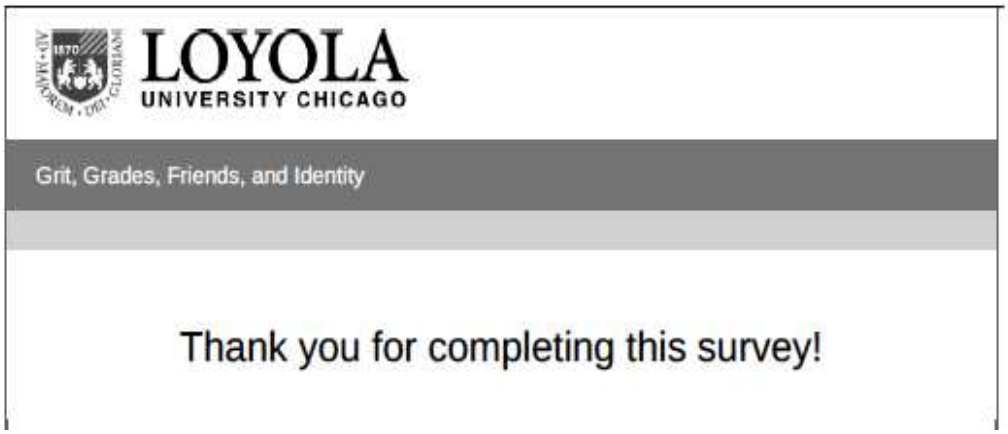
12. What is your race? (Select one or more responses.)

- [ ] American Indian or Alaska Native
- [ ] Asian
- [ ] Black or African American
- [ ] Native Hawaiian or Other Pacific Islander
- [ ] White
- [ ] Other (please specify)

13. Are you Hispanic or Latino?

- ( ) Yes
- ( ) No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Thank you for completing this survey!

APPENDIX B

CORRELATION TABLE

	Closeness	Sense of belonging	Self-description as Black	Centrality	Happy to be Black	Proud to be Black	Feel good about being Black	Private Regard	Blacks as smart as others	Blacks as good as others	Blacks made important contributions	Public Regard
Closeness	1	.478**	0.244	.763**	.354**	.370**	.419**	.436**	0.103	0.256	.329*	0.260
Sense of belonging	.478**	1	0.188	.744**	.353**	.417**	.421**	.452**	0.042	.269*	0.259	0.205
Self-description as Black	0.244	0.188	1	.654**	.465**	.296*	.456**	.461**	0.130	0.059	0.047	0.066
Centrality	.763**	.744**	.654**	1	.529**	.483**	.581**	.617**	0.079	0.220	0.254	0.208
Happy to be Black	.354**	.353**	.465**	.529**	1	.702**	.620**	.905**	0.204	0.203	0.055	0.194
Proud to be Black	.370**	.417**	.296*	.483**	.702**	1	.459**	.840**	.298*	.323*	0.193	.352**
Feel good about being Black	.419**	.421**	.456**	.581**	.620**	.459**	1	.809**	0.138	.363**	0.153	.271*
Private Regard	.436**	.452**	.461**	.617**	.905**	.840**	.809**	1	0.232	.331*	0.142	.307*
Blacks as smart as others	0.103	0.042	0.130	0.079	0.204	.298*	0.138	0.232	1	.337**	.358**	.760**
Blacks as good as others	0.256	.269*	0.059	0.220	0.203	.323*	.363**	.331*	.337**	1	.440**	.786**
Blacks made important contributions	.329*	0.259	0.047	0.254	0.055	0.193	0.153	0.142	.358**	.440**	1	.718**
Public Regard	0.260	0.205	0.066	0.208	0.194	.352**	.271*	.307*	.760**	.786**	.718**	1
Children surrounded by Black art	.389**	.465**	0.044	.370**	.278*	.306*	.285*	.324*	-0.035	0.059	0.014	-0.026
Buy from Black businesses	.314*	.421**	0.097	.336*	.346**	.465**	.327*	.429**	-0.135	.264*	0.250	0.107
Support Black entertainment	.265*	.366**	0.051	.273*	0.192	.479**	0.222	.333*	0.165	0.205	0.142	0.197
Overall Nationalist Ideology	.377**	.492**	0.054	.386**	.320*	.504**	.325*	.435**	-0.031	0.198	0.154	0.098
Individual more important than Blackness	.271*	.406**	0.100	.324*	.350**	.439**	.316*	.420**	0.211	0.160	0.260	0.242
More individual than Black	.353**	.312*	-0.006	0.257	0.232	0.229	0.228	0.253	.279*	0.157	.476**	.347**
Consider race when deciding movie to see	0.149	.396**	-0.045	0.187	.267*	.371**	0.253	.338*	0.113	0.186	0.103	0.148
Overall Humanist Ideology	.303*	.448**	-0.022	.305*	.341*	.424**	.319*	.414**	0.224	0.180	.334*	.291*
Blacks go to White Schools	-0.109	0.144	0.200	0.064	-0.068	-0.119	-0.003	-0.098	0.125	0.142	0.108	0.126
Not acting Black around White people	-0.096	.296*	-0.058	0.011	0.202	0.128	-0.068	0.080	0.219	0.094	0.131	0.157
Act more like White people to be successful	0.182	0.108	0.117	0.133	0.074	0.047	-0.040	0.008	0.144	0.045	0.216	0.123
Overall Assimilationist Ideology	-0.081	0.222	0.073	0.057	0.051	-0.025	-0.104	-0.051	0.186	0.086	0.175	0.159
All minorities together against discrimination	.428**	.416**	0.204	.451**	.467**	.594**	.396**	.558**	0.232	.299*	.415**	.376**
Other people experience similar discrimination	.395**	.382**	0.148	.394**	.326*	.422**	0.238	.373**	.315*	0.180	.339*	.333*
Blacks should spend more time on similarities to other minorities	.565**	.364**	0.109	.440**	.490**	.346**	.392**	.468**	0.231	0.175	0.160	0.223
Overall Oppressed Minority Ideology	.554**	.458**	0.161	.517**	.517**	.555**	.407**	.572**	.293*	0.245	.361**	.368**
Thorough job	.264*	.349**	0.051	.273*	0.167	.274*	0.120	0.205	0.022	0.228	0.160	0.148
Careless	0.172	0.258	0.040	0.174	.283*	.312*	0.205	.298*	0.037	0.091	0.084	0.055
Reliable worker	.299*	.326*	0.054	.298*	.281*	.326*	0.243	.331*	0.154	0.146	.414**	.272*
Disorganized	0.198	0.185	0.077	0.161	0.232	0.093	0.235	0.201	.289*	0.207	0.241	.290*
Lazy	0.262	.341*	0.143	.312*	.356**	.270*	0.167	.300*	0.179	0.145	0.244	0.208
Perseveres until finished	0.152	0.115	0.031	0.100	0.108	0.251	0.130	0.178	0.113	0.135	0.165	0.151
Efficient	.419**	.352**	0.056	.345**	0.252	.376**	.381**	.385**	0.076	0.259	0.241	0.228
Plans and follows through	.337*	.343**	0.144	.352**	0.255	.323*	.485**	.407**	0.241	.402**	.335*	.410**
Easily distracted	0.190	0.112	0.078	0.126	0.187	0.084	0.086	0.121	0.224	0.096	0.101	0.155
Total Conscientiousness Score	.352**	.360**	0.016	.332*	.339*	.368**	.305*	.397**	0.170	0.229	.291*	.295*

	Children surrounded by Black art	Buy from Black businesses	Support Black entertainment	**Overall Nationalist Ideology**	Individual more important than Blackness	More individual than Black	Consider race when deciding movie to see	**Overall Humanist Ideology**	Blacks go to White Schools	Not acting Black around White people	Act more like White people to be successful	**Overall Assimilationist Ideology**	All minorities together against discrimination	Other people experience similar discrimination
Closeness	.389**	.314*	.265*	.377**	.271*	.353**	0.149	.303*	-0.109	-0.096	0.182	-0.081	.428**	.395**
Sense of belonging	.465**	.421**	.366**	.492**	.406**	.312*	.396**	.448**	0.144	.296*	0.108	0.222	.416**	.382**
Self-description as Black	0.044	0.097	0.051	0.054	0.100	-0.006	-0.045	-0.022	0.200	-0.058	0.117	0.073	0.204	0.148
Centrality	.370**	.338*	.273*	.386**	.324*	0.257	0.187	.305*	0.064	0.011	0.133	0.057	.451**	.394**
Happy to be Black	.278*	.346**	0.192	.320*	.350**	0.232	.267*	.341*	-0.068	0.202	0.074	0.051	.467**	.326*
Proud to be Black	.306*	.465**	.479**	.504**	.439**	0.229	.371**	.424**	-0.119	0.128	0.047	-0.025	.594**	.422**
Feel good about being Black	.285*	.327*	0.222	.325*	.316*	0.228	0.263	.319*	-0.003	-0.068	-0.040	-0.104	.396**	0.238
Private Regard	.324*	.429**	.333*	.435**	.420**	0.253	.338*	.414**	-0.096	0.080	0.008	-0.051	.558**	.373**
Blacks as smart as others	-0.035	-0.135	0.165	-0.031	0.211	.279*	0.113	0.224	0.125	0.219	0.144	0.186	0.232	.315*
Blacks as good as others	0.059	.264*	0.205	0.198	0.160	0.157	0.186	0.180	0.142	0.094	0.045	0.086	.299*	0.180
Blacks made important contributions	0.014	0.250	0.142	0.154	0.260	.476**	0.103	.334*	0.108	0.131	0.216	0.175	.415**	.339*
Public Regard	-0.026	0.107	0.197	0.098	0.242	.347**	0.148	.291*	0.126	0.157	0.123	0.159	.376**	.333*
Children surrounded by Black art	1	.581**	.563**	.849**	0.227	0.227	.360**	.319*	0.128	0.168	0.189	0.183	.402**	.285*
Buy from Black businesses	.581**	1	.450**	.825**	0.157	0.164	.287*	0.227	0.252	0.084	0.170	0.200	.370**	0.252
Support Black entertainment	.563**	.450**	1	.804**	0.211	0.180	.379**	.302*	0.079	0.113	0.122	0.101	.330*	.525**
Overall Nationalist Ideology	.849**	.825**	.804**	1	0.223	0.211	.399**	.330*	0.166	0.121	0.170	0.177	.432**	.416**
Individual more important than Blackness	0.227	0.157	0.211	0.223	1	.467**	.422**	.781**	0.006	.271*	0.161	0.160	.440**	0.251
More individual than Black	0.227	0.164	0.180	0.211	.467**	1	.431**	.794**	0.144	0.256	0.158	0.226	.398**	.443**
Consider race when deciding movie to see	.360**	.287*	.379**	.399**	.422**	.431**	1	.780**	0.026	0.217	0.025	0.080	.520**	.403**
Overall Humanist Ideology	.319*	0.227	.302*	.330*	.781**	.794**	.780**	1	0.037	.283*	0.105	0.168	.559**	.450**
Blacks go to White Schools	0.128	0.252	0.079	0.166	0.006	0.144	0.026	0.037	1	.317*	0.071	.701**	-0.103	0.016
Not acting Black around White people	0.168	0.084	0.113	0.121	.271*	0.256	0.217	.283*	.317*	1	.341*	.772**	0.132	0.234
Act more like White people to be successful	0.189	0.170	0.122	0.170	0.161	0.158	0.025	0.105	0.071	.341*	1	.592**	0.063	0.147
Overall Assimilationist Ideology	0.183	0.200	0.101	0.177	0.160	0.226	0.080	0.168	.701**	.772**	.592**	1	-0.018	0.142
All minorities together against discrimination	.402**	.370**	.330*	.432**	.440**	.398**	.520**	.559**	-0.103	0.132	0.063	-0.018	1	.548**
Other people experience similar discrimination	.285*	0.252	.525**	.416**	0.251	.443**	.403**	.450**	0.016	0.234	0.147	0.142	.548**	1
Blacks should spend more time on similarities to other minorities	.346**	0.087	0.214	0.238	.485**	.472**	.405**	.559**	-0.015	0.184	0.028	0.043	.536**	.411**
Overall Oppressed Minority Ideology	.404**	.269*	.415**	.428**	.470**	.519**	.532**	.637**	-0.080	0.193	0.062	0.036	.861**	.786**
Thorough job	.381**	.395**	.436**	.481**	.305*	.312*	.316*	.378**	.319*	0.227	0.172	.328*	0.163	0.243
Careless	.347**	0.214	.359**	.354**	.375**	.412**	.377**	.473**	0.124	.319*	0.185	0.260	.400**	.409**
Reliable worker	.395**	.393**	.383**	.478**	.312*	.379**	.396**	.446**	.299*	0.215	0.059	.279*	.377**	.356**
Disorganized	0.205	0.251	0.234	0.260	.296*	.341*	0.190	.319*	0.182	0.170	.265*	0.246	.306*	.343**
Lazy	0.225	.279*	.295*	.308*	.374**	.344*	.348**	.431**	0.217	0.212	.322*	.312*	.415**	.385**
Perseveres until finished	.303*	0.144	.423**	.336*	.317*	0.253	.490**	.436**	-0.152	-0.001	0.034	-0.118	.305*	0.217
Efficient	.548**	.461**	.421**	.577**	0.262	0.111	.310*	.272*	-0.002	0.119	0.097	0.061	.405**	.304*
Plans and follows through	0.171	0.151	.274*	0.227	0.217	0.223	0.213	0.256	0.254	.270*	-0.109	0.187	0.197	0.156
Easily distracted	0.126	0.000	0.172	0.095	.468**	0.161	0.108	.276*	0.105	0.260	.289*	0.261	0.149	0.102
Total Conscientiousness Score	.421**	.333*	.494**	.508**	.493**	.401**	.449**	.577**	0.146	0.248	0.155	.267*	.442**	.412**

	Blacks should spend more time on similarities to other minorities	Overall Oppressed Minority Ideology	Thorough job	Careless	Reliable worker	Disorganized	Lazy	Perseveres until finished	Efficient	Plans and follows through	Easily distracted	Total Conscientiousness Score	New ideas and projects distract	Bounce back
Closeness	.565**	.554**	.264*	0.172	.299*	0.198	0.262	0.152	.419**	.337*	0.190	.352**	.335*	0.145
Sense of belonging	.364**	.458**	.349**	0.258	.326*	0.185	.341*	0.115	.352**	.343**	0.112	.360**	0.031	0.187
Self-description as Black	0.109	0.161	0.051	0.040	0.054	0.077	0.143	0.031	0.056	0.144	0.078	0.016	.399**	0.039
Centrality	.440**	.517**	.273*	0.174	.298*	0.161	.312*	0.100	.345**	.352**	0.126	.332*	.321*	0.129
Happy to be Black	.490**	.517**	0.167	.283*	.281*	0.232	.356**	0.108	0.252	0.255	0.187	.339*	.370**	0.016
Proud to be Black	.346**	.555**	.274*	.312*	.326*	0.093	.270*	0.251	.376**	.323*	0.084	.368**	.291*	0.080
Feel good about being Black	.392**	.407**	0.120	0.205	0.243	0.235	0.167	0.130	.381**	.485**	0.086	.305*	0.258	0.168
Private Regard	.468**	.572**	0.205	.298*	.331*	0.201	.300*	0.178	.385**	.407**	0.121	.397**	.345**	0.086
Blacks as smart as others	0.231	.293*	0.022	0.037	0.154	.289*	0.179	0.113	0.076	0.241	0.224	0.170	0.128	.296*
Blacks as good as others	0.175	0.245	0.228	0.091	0.146	0.207	0.145	0.135	0.259	.402**	0.096	0.229	0.031	0.148
Blacks made important contributions	0.160	.361**	0.160	0.084	.414**	0.241	0.244	0.165	0.241	.335*	0.101	.291*	0.160	.365**
Public Regard	0.223	.368**	0.148	0.055	.272*	.290*	0.206	0.151	0.228	.410**	0.155	.295*	0.093	.315*
Children surrounded by Black art	.346**	.404**	.381**	.347**	.395**	0.205	0.225	.303*	.548**	0.171	0.126	.421**	0.072	.289*
Buy from Black businesses	0.087	.269*	.395**	0.214	.393**	0.251	.279*	0.144	.461**	0.151	0.000	.333*	0.133	0.123
Support Black entertainment	0.214	.415**	.436**	.359**	.383**	0.234	.295*	.423**	.421**	.274*	0.172	.494**	-0.055	0.263
Overall Nationalist Ideology	0.238	.428**	.481**	.354**	.478**	0.260	.308*	.336*	.577**	0.227	0.095	.508**	0.039	0.252
Individual more important than Blackness	.485**	.470**	.305*	.375**	.312*	.296*	.374**	.317*	0.262	0.217	.468**	.493**	-0.016	0.154
More individual than Black	.472**	.519**	.312*	.412**	.379**	.341*	.344*	0.253	0.111	0.223	0.161	.401**	0.038	0.241
Consider race when deciding movie to see	.405**	.532**	.316*	.377**	.396**	0.190	.348**	.490**	.310*	0.213	0.108	.449**	-0.038	.286*
Overall Humanist Ideology	.559**	.637**	.378**	.473**	.446**	.319*	.431**	.436**	.272*	0.256	.278*	.577**	-0.043	.266*
Blacks go to White Schools	-0.015	-0.080	.319*	0.124	.299*	0.182	0.217	-0.152	-0.002	0.254	0.105	0.146	0.007	0.243
Not acting Black around White people	0.184	0.193	0.227	.319*	0.215	0.170	0.212	-0.001	0.119	.270*	0.260	0.248	0.169	0.038
Act more like White people to be successful	0.028	0.062	0.172	0.185	0.059	.265*	.322*	0.034	0.097	-0.109	.289*	0.155	0.231	0.195
Overall Assimilationist Ideology	0.043	0.036	.328*	0.260	.279*	0.246	.312*	-0.118	0.061	0.187	0.261	.267*	0.135	0.194
All minorities together against discrimination	.536**	.861**	0.163	.400**	.377**	.306*	.415**	.305*	.405**	0.197	0.149	.442**	0.190	.321*
Other people experience similar discrimination	.411**	.786**	0.243	.409**	.356**	.343**	.385**	0.217	.304*	0.156	0.102	.412**	0.129	0.190
Blacks should spend more time on similarities to other minorities	1	.786**	0.254	.372**	.449**	0.205	.344*	0.200	.375**	.319*	.331*	.465**	0.166	0.159
Overall Oppressed Minority Ideology	.786**	1	0.249	.467**	.482**	.325*	.459**	.282*	.447**	0.258	0.212	.547**	0.174	0.258
Thorough job	0.254	0.249	1	.271*	.628**	.285*	0.224	.332*	.496**	.384**	.280*	.668**	0.049	0.253
Careless	.372**	.467**	.271*	1	0.153	.344**	.457**	0.103	0.030	0.030	.318*	.472**	0.135	0.147
Reliable worker	.449**	.482**	.628**	0.153	1	0.139	0.177	.395**	.606**	.447**	0.127	.633**	0.144	.367**
Disorganized	0.205	.325*	.285*	.344**	0.139	1	.632**	0.147	0.144	0.077	.589**	.609**	0.111	.266*
Lazy	.344*	.459**	0.224	.457**	0.177	.632**	1	0.214	-0.003	-0.074	.639**	.605**	0.031	.318*
Perseveres until finished	0.200	.282*	.332*	0.103	.395**	0.147	0.214	1	.529**	0.192	0.229	.534**	0.010	.372**
Efficient	.375**	.447**	.496**	0.030	.606**	0.144	-0.003	.529**	1	.548**	0.077	.560**	0.253	.392**
Plans and follows through	.319*	0.258	.384**	0.030	.447**	0.077	-0.074	0.192	.548**	1	0.047	.398**	.288*	.326*
Easily distracted	.331*	0.212	.280*	.318*	0.127	.589**	.639**	0.229	0.077	0.047	1	.606**	0.042	0.178
Total Conscientiousness Score	.465**	.547**	.668**	.472**	.633**	.609**	.605**	.534**	.560**	.398**	.606**	1	0.096	.420**

	Obsessed with idea and lost interest	Hard worker	Set goals and change	Difficulty keeping focus past few months	Finish what I begin	Diligent	Perseverance of effort subscale score	Interest consistency subscale score	Overall grit
Closeness	.271*	.331*	.324*	.399**	0.160	0.226	.266*	.456**	.426**
Sense of belonging	0.105	0.176	0.065	.326*	0.121	.327*	0.239	0.138	0.190
Self-description as Black	.434**	-0.022	0.087	0.234	0.033	0.043	-0.030	.364**	0.160
Centrality	.341*	0.182	0.166	.408**	0.105	0.241	0.197	.421**	.355**
Happy to be Black	.268*	0.215	0.025	.450**	0.163	0.174	0.163	.363**	.300*
Proud to be Black	.296*	.461**	-0.037	.449**	0.239	.316*	.359**	.322*	.408**
Feel good about being Black	.342**	0.262	0.186	.424**	0.137	0.092	0.194	.408**	.342**
Private Regard	.339*	.355**	0.048	.505**	0.197	0.213	.273*	.419**	.412**
Blacks as smart as others	0.074	0.139	0.099	-0.014	0.141	0.019	0.163	0.044	0.112
Blacks as good as others	0.122	0.144	0.036	0.000	0.098	0.226	0.165	0.008	0.055
Blacks made important contributions	0.140	0.234	.276*	0.005	0.142	0.148	.282*	0.179	0.247
Public Regard	0.105	0.192	0.119	-0.045	0.137	0.143	0.246	0.058	0.162
Children surrounded by Black art	0.050	.312*	0.185	.461**	.270*	.344**	.387**	0.229	.367**
Buy from Black businesses	0.174	.302*	0.202	.442**	0.173	.418**	.308*	.297*	.331*
Support Black entertainment	0.083	.405**	0.014	.402**	.352**	.437**	.478**	0.107	.350**
Overall Nationalist Ideology	0.105	.402**	0.140	.515**	.306*	.478**	.471**	0.246	.427**
Individual more important than Blackness	-0.069	.375**	0.017	.328*	0.260	.307*	.351**	0.039	0.230
More individual than Black	-0.029	.341*	.370**	0.097	0.243	.285*	.352**	0.136	.285*
Consider race when deciding movie to see	0.038	.412**	0.099	.304*	.470**	.307*	.487**	0.095	.370**
Overall Humanist Ideology	-0.053	.463**	0.174	.281*	.397**	.363**	.503**	0.092	.380**
Blacks go to White Schools	0.026	0.070	0.194	-0.051	-0.065	.291*	0.136	0.007	0.057
Not acting Black around White people	0.018	0.079	0.001	0.159	0.053	0.227	0.080	0.055	0.032
Act more like White people to be successful	0.075	-0.011	0.175	0.200	0.036	0.190	0.085	0.185	0.131
Overall Assimilationist Ideology	-0.003	0.029	0.127	0.085	-0.042	.320*	0.130	0.071	0.094
All minorities together against discrimination	0.148	.269*	-0.004	.270*	.321*	0.142	.344**	0.165	.289*
Other people experience similar discrimination	0.072	.294*	0.208	.299*	.279*	0.235	.316*	0.219	.313*
Blacks should spend more time on similarities to other minorities	0.051	.278*	0.179	.311*	0.211	0.215	.264*	0.210	.285*
Overall Oppressed Minority Ideology	0.085	.337*	0.121	.339*	.317*	0.221	.374**	0.225	.365**
Thorough job	0.090	.442**	0.086	0.248	.350**	.987**	.693**	0.131	.504**
Careless	-0.018	0.163	0.020	.272*	0.109	0.252	0.193	0.090	0.151
Reliable worker	0.157	.574**	.324*	.293*	.416**	.601**	.690**	.327*	.644**
Disorganized	0.016	-0.004	0.213	0.067	0.179	0.262	0.196	0.094	0.142
Lazy	-0.166	-0.032	0.023	0.075	.274*	0.203	0.225	-0.081	0.062
Perseveres until finished	0.085	.409**	0.064	0.124	.950**	.349**	.715**	0.061	.495**
Efficient	0.244	.511**	0.222	.415**	.557**	.493**	.676**	.383**	.656**
Plans and follows through	.480**	.487**	0.202	0.209	0.202	.373**	.467**	.406**	.525**
Easily distracted	-0.047	0.011	-0.018	0.026	0.219	.274*	0.191	-0.067	0.046
Total Conscientiousness Score	0.035	.377**	0.097	0.225	.552**	.647**	.719**	0.161	.572**

	Children surrounded by Black art	Buy from Black businesses	Support Black entertainment	**Overall Nationalist Ideology**	Individual more important than Blackness	More individual than Black	Consider race when deciding movie to see	**Overall Humanist Ideology**	Blacks go to White Schools	Not acting Black around White people	Act more like White people to be successful	**Overall Assimilationist Ideology**	All minorities together against discrimination	Other people experience similar discrimination
New ideas and projects distract	0.072	0.133	-0.055	0.039	-0.016	0.038	-0.038	-0.043	0.007	0.169	0.231	0.135	0.190	0.129
Bounce back	.289*	0.123	0.263	0.252	0.154	0.241	.266*	.266*	0.243	0.038	0.195	0.194	.321*	0.190
Obsessed with idea and lost interest	0.050	0.174	0.083	0.105	-0.069	-0.029	0.038	-0.063	0.026	0.018	0.075	-0.003	0.148	0.072
Hard worker	.312*	.302*	.405**	.402**	.375**	.341*	.412**	.463**	0.070	0.079	-0.011	0.029	.289*	.294*
Set goals and change	0.185	0.202	0.014	0.140	0.017	.370**	0.099	0.174	0.194	0.001	0.175	0.127	-0.004	0.208
Difficulty keeping focus past few months	.461**	.442**	.402**	.515**	.328*	0.097	.304*	.281*	-0.051	0.159	0.200	0.085	.270*	.299*
Finish what I begin	.270*	0.173	.352**	.306*	0.260	0.243	.470**	.397**	-0.065	0.053	0.036	-0.042	.321*	.279*
Diligent	.344**	.416**	.437**	.478**	.307*	.285*	.307*	.363**	.291*	0.227	0.190	.320*	0.142	0.235
Perseverance of effort subscale score	.387**	.308*	.478**	.471**	.351**	.352**	.487**	.503**	0.136	0.080	0.085	0.130	.344**	.316*
Interest consistency subscale score	0.229	.297*	0.107	0.246	0.039	0.136	0.095	0.092	0.007	0.055	0.185	0.071	0.165	0.219
Overall grit	.367**	.331*	.350**	.427**	0.230	.285*	.370**	.380**	0.057	0.032	0.131	0.094	.289*	.313*
Grades	-0.226	-0.202	-0.254	-.286*	-0.271	-0.140	-.361**	-.350*	0.098	0.133	0.081	0.162	-0.246	-.323*

	Closeness	Sense of belonging	Self-description as Black	**Centrality**	Happy to be Black	Proud to be Black	Feel good about being Black	**Private Regard**	Blacks as smart as others	Blacks as good as others	Blacks made important contributions	**Public Regard**
New ideas and projects distract	.335*	0.031	.399**	.321*	.370**	.291*	0.258	.345**	0.128	0.031	0.160	0.093
Bounce back	0.145	0.187	0.039	0.129	0.016	0.080	0.168	0.086	.296*	0.148	.365**	.315*
Obsessed with idea and lost interest	.271*	0.105	.434**	.341*	.268*	.296*	.342**	.339*	0.074	0.122	0.140	0.105
Hard worker	.331*	0.176	-0.022	0.182	0.215	.461**	0.262	.355**	0.139	0.144	0.234	0.192
Set goals and change	.324*	0.065	0.087	0.166	0.025	-0.037	0.186	0.048	0.099	0.036	.276*	0.119
Difficulty keeping focus past few months	.399**	.326*	0.234	.408**	.450**	.449**	.424**	.505**	-0.014	0.000	0.005	-0.045
Finish what I begin	0.160	0.121	0.033	0.105	0.163	0.239	0.137	0.197	0.141	0.098	0.142	0.137
Diligent	0.226	.327*	0.043	0.241	0.174	.316*	0.092	0.213	0.019	0.226	0.148	0.143
Perseverance of effort subscale score	.266*	0.239	-0.030	0.197	0.163	.359**	0.194	.273*	0.163	0.165	.282*	0.246
Interest consistency subscale score	.456**	0.138	.364**	.421**	.363**	.322*	.408**	.419**	0.044	0.008	0.179	0.058
Overall grit	.426**	0.190	0.160	.355**	.300*	.408**	.342**	.412**	0.112	0.055	0.247	0.162
Grades	-0.166	-0.138	0.005	-0.145	-0.068	-0.219	-0.142	-0.178	0.031	0.044	-0.112	-0.001

	Obsessed with idea and lost interest	Hard worker	Set goals and change	Difficulty keeping focus past few months	Finish what I begin	Diligent	Perseverance of effort subscale score	Interest consistency subscale score	**Overall grit**
New ideas and projects distract	.652**	0.196	0.118	0.232	0.041	0.058	0.078	.682**	.443**
Bounce back	0.134	.265*	0.097	0.107	.392**	0.210	.646**	0.101	.465**
Obsessed with idea and lost interest	1	0.191	0.203	.265*	0.064	0.118	0.128	.743**	.507**
Hard worker	0.191	1	.294*	.504**	.404**	.427**	.724**	.406**	.720**
Set goals and change	0.203	.294*	1	.378**	0.068	0.078	0.136	.627**	.438**
Difficulty keeping focus past few months	.265*	.504**	.378**	1	0.103	0.231	.292*	.658**	.571**
Finish what I begin	0.064	.404**	0.068	0.103	1	.368**	.743**	0.054	.508**
Diligent	0.118	.427**	0.078	0.231	.368**	1	.682**	0.136	.500**
Perseverance of effort subscale score	0.128	.724**	0.136	.292*	.743**	.682**	1	0.215	.793**
Interest consistency subscale score	.743**	.406**	.627**	.658**	0.054	0.136	0.215	1	.741**
Overall grit	.507**	.720**	.438**	.571**	.508**	.500**	.793**	.741**	1
Grades	-0.039	-.532**	0.009	-0.221	-0.127	-0.181	-.377**	-0.064	-.358*

	Blacks should spend more time on similarities to other minorities	Overall Oppressed Minority Ideology	Thorough job	Careless	Reliable worker	Disorganized	Lazy	Perseveres until finished	Efficient	Plans and follows through	Easily distracted	Total Conscientiousness Score	New ideas and projects distract	Bounce back
New ideas and projects distract	0.166	0.174	0.049	0.135	0.144	0.111	0.031	0.010	0.253	.288*	0.042	0.096	1	0.069
Bounce back	0.159	0.258	0.253	0.147	.367**	.266*	.318*	.372**	.392**	.326*	0.178	.420**	0.069	1
Obsessed with idea and lost interest	0.051	0.085	0.090	-0.018	0.157	0.016	-0.166	0.085	0.244	.480**	-0.047	0.035	.652**	0.134
Hard worker	.278*	.337*	.442**	0.163	.574**	-0.004	-0.032	.409**	.511**	.487**	0.011	.377**	0.196	.265*
Set goals and change	0.179	0.121	0.086	0.020	.324*	0.213	0.023	0.064	0.222	0.202	-0.018	0.097	0.118	0.097
Difficulty keeping focus past few months	.311*	.339*	0.248	.272*	.293*	0.067	0.075	0.124	.415**	0.209	0.026	0.225	0.232	0.107
Finish what I begin	0.211	.317*	.350**	0.109	.416**	0.179	.274*	.950**	.557**	0.202	0.219	.552**	0.041	.392**
Diligent	0.215	0.221	.967**	0.252	.601**	0.262	0.203	.349**	.493**	.373**	.274*	.647**	0.058	0.210
Perseverance of effort subscale score	.264*	.374**	.693**	0.193	.690**	0.196	0.225	.715**	.676**	.467**	0.191	.719**	0.078	.646**
Interest consistency subscale score	0.210	0.225	0.131	0.090	.327*	0.094	-0.081	0.061	.383**	.406**	-0.067	0.161	.682**	0.101
Overall grit	.285*	.365**	.504**	0.151	.644**	0.142	0.062	.495**	.656**	.525**	0.046	.572**	.443**	.465**
Grades	-0.234	-.349*	-0.177	0.047	-.434**	0.237	0.091	-0.154	-0.201	-0.183	0.191	-0.078	0.093	-0.092

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