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Alyssa LaCava  
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Approved:

*Kathleen J. Hart, PhD, ABPP*

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Kathleen J. Hart, Ph.D., ABPP  
Chair, School of Psychology

*Mark S. Nagy*

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Mark Nagy, Ph.D.  
Thesis Chair

Grit: The Moderator between Workaholism and Work-Family Conflict

## Thesis Committee

Chair	Mark Nagy, Ph.D. Associate Professor of Psychology
Member	Dalia Diab, Ph.D. Associate Professor of Psychology
Member	Morell Mullins, Ph.D. Professor of Psychology

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1 Corinthians 15:57

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## Abstract

The purpose of this study was to focus on grit, a construct defined as “the perseverance and passion for long-term goals,” in its relationship to workaholism and work-family conflict. It was hypothesized that grit would moderate the relationship between workaholism and work-family conflict so that those who scored higher on grit would have lower reports of work-family conflict, even when paired with high reports of workaholism. Results did not confirm this moderating effect, but surprising conclusions were drawn about the grit scale itself. Items on the Grit Scale that were reverse scored did not reflect what was thought to be the “opposite” of grit. A reliability analysis was conducted, eliminating all negative items to increase the alpha. Items left were collectively titled “Positive Grit,” which may be a better measure of grit than the original scale. “Positive Grit” was more strongly related to work drive than the original grit scale, but still did not produce a moderating effect between workaholism and work-family conflict. These results contribute to the literature surrounding personality in the workplace and provide insight for future research and development on how to properly measure grit.

## Chapter I

### Review of the Literature

Americans love to work. At least, it would appear that way in comparison to other developed countries. According to the Organization for Economic Cooperation and Development, the United States ranks 29<sup>th</sup> out of 38 countries on scales that measure work-life balance and amount of time spent on leisure activities, including sleep (“How’s Life? United States,” 2016). Americans are putting in longer hours at work, and are spending less time with their families, and are not spending enough free time doing the things that bring them joy (Flynn, 2014). Increasingly, employers are taking notice to this and how it is negatively affecting their companies (Flynn, 2014).

Though this is a nationwide problem, not every employee experiences this strain. A shift has been made in recent history to focus on work as more of a vocation or calling. Putting in long hours is not necessarily painful for these hardworking employees. Where is the difference that lies between those who want to work hard versus those who feel compelled to work hard? Whereas the nature versus nurture debate is centuries old, psychologists continue to be interested in personality traits and which ones have major impact on outcomes such as job performance (Barrick & Mount, 1991). This study investigates a new personality construct, grit, as it may reliably predict aspects of job performance such as workaholism and work-family conflict.

### Grit

*Grit*, as defined by Duckworth, Peterson, Matthews, and Kelly (2007), is “the perseverance and passion for long-term goals” (p. 1087). It entails working tirelessly through

challenges while maintaining effort and interest regardless of failures and setbacks. The individual high on grit approaches their goals similarly to someone running a marathon: one's strength lies in one's stamina. Those who study grit hypothesize that grit is essential for high achievement, more so than intelligence or just raw talent (Duckworth et al., 2007).

Surprisingly, grit as a construct did not find its roots in personality psychology. Duckworth (2013), the head researcher who coined the term as a trait, identified the construct of grit while teaching middle school students. She wanted to understand why students who were at equal or lower intelligence levels to their peers were actually more successful in academic settings. Duckworth hypothesized that it is not intelligence, but the perseverance and passion for long-term goals that set those students apart. Since then, grit has captured the attention of psychologists, specifically in positive psychology.

Though it has mainly been applied to areas of education, grit has also been demonstrated in vocational fields as well as in extracurricular activities. Duckworth and her colleagues (2007) studied West Point cadets amidst their summer physical training. The authors were interested in whether grit was related to retention rates after the first summer of training. Results showed that grit was the best predictor of retention, even better than conscientiousness. Indeed, Duckworth et al. found that cadets who scored high on grit were 60% more likely than those who were low on grit to finish the summer training in the midst of their difficult program (Duckworth et al., 2007).

Duckworth and her colleagues (2007) also investigated how grit could be related to goal-achievement beyond the realms of education and careers such as extracurricular activities. They chose spelling bee competitions and found that children who scored higher on grit were more likely to make it further in the competition. "Grittier" children studied more and longer hours, specifically on weekends. In fact, when age was controlled for, grit was the most influential

predictor of spelling bee champions (Duckworth et al., 2007).

Research has also been conducted regarding gender differences and grit. In a study conducted by Eskreis-Winkler, Shulman, Beal, and Duckworth (2014), grit was not associated with marital status. However, men who scored higher on the grit scale were more likely to stay married than men who scored low (Eskreis-Winkler et al., 2014). This opens up more ideas for research on the potential effects of grit on gender.

**Grit and personality.** From the screening process to the interview, personality constructs can be found throughout the hiring process. Currently, Goldberg's (1990; Tupes & Christal, 1958) "Big Five Factor" personality structure, along with the NEO Revised Personality Inventory (Costa, McCrae, & Kay, 1995) are most often used to predict job outcomes, as well as other research questions related to the workforce. The most influential factor in terms of variance accounted for in positive outcomes is conscientiousness. *Conscientiousness* is being thorough, careful, or vigilant. It implies a desire to do a task well and is positively correlated with greater job performance, job satisfaction, organizational citizenship behaviors, and better leadership performance (Barrick & Mount, 1991; Cohen, 1992; Lapierre & Hackett, 2007).

Though conscientiousness is important when predicting job success ( $p = .22$ ), there is still a great deal of variance that is unaccounted (Barrick & Mount, 1991). Personality researchers are constantly looking for other traits that may explain why one person performs better than another. There is a possibility that grit may be a more rigorous predictor of success than conscientiousness.

Grit is positively correlated with all of the Big Five factors, except neuroticism, to which it is negatively related (Duckworth et al., 2007). Duckworth and her colleagues (2007) found that the Big Five construct that grit is most highly related to is conscientiousness. Yet it appears that

grit may account for incremental variance above and beyond the Big Five traits in regards to success and achievement. Due to its emphasis on focused effort and stable interest over time, grit has been found to predict accomplishment better than conscientiousness (Duckworth et al., 2007). It has also been found that among grit, age, and all of the Big Five traits (conscientiousness, agreeability, openness, extraversion, and neuroticism), grit was the only significant predictor of career changes over one's life, in that the more grit an individual possessed, the less likely they were to change careers (Duckworth et al., 2007).

Grit is also highly correlated with work ethic. Whereas grit and work ethic are similar in that they are individual difference variables that relate to one's effort towards task accomplishment, grit consists of two major components (*perseverance* and *passion*), whereas work ethic is believed to consist of seven distinct components: *self-reliance*, *morality/ethics*, *leisure*, *hard work*, *centrality of work*, *wasted time*, and *delay of gratification* (Meriac, Slifka, & LaBat, 2015, p. 401).

Meriac and colleagues (2015) found that the perseverance of effort found in grit is positively correlated with the *hard work* aspect of work ethic ( $r = .37, p < .001$ ). Both grit and work ethic are related to conscientiousness, but because work ethic is broader in that it "appeals to more work-related activities" (p. 402), grit has more shared variance with conscientiousness than does work ethic ( $t = -7.51$ ; Meriac et al., 2015). In terms of predictability, work ethic accounted for incremental variance in job satisfaction as well as turnover intentions above and beyond grit, whereas grit predicted a higher magnitude of later psychological well-being after stressful work situations (Meriac et al., 2015). Though grit and work ethic may appear to be redundant constructs, Meriac and colleagues would argue that they are, in fact, distinct. They speculated that the key distinction lies in variances accounted for in measured outcomes. When

controlling for grit, work ethic accounted for incremental variance in turnover intentions ( $\Delta R^2 = .052$ ) as well as job satisfaction ( $\Delta R^2 = .084$ ). However, when controlling for work ethic, grit did not account for incremental variance above and beyond work ethic, thus providing evidence for their distinction (Meriac et al., 2015, p. 404).

It is important to note that grit has also been significantly related to several other variables. One study found that grit was positively correlated with positive affectivity, happiness, and life satisfaction, as well as negatively correlated with negative affectivity (Singh & Duggal Jha, 2008). Grit has also been found to serve as a buffer for suicidal ideation and a predictor for later psychological well-being in that it moderates the relationship between negative life events and the reactions to those events (Blalock, Young, & Kleiman, 2015). Specifically, when negative life events occur, “grittier” individuals are more likely to push through and overcome the situation. Grit has also been found to be empirically distinct from motivation and tenacity (Christensen & Knezek, 2014), as well as self-control (Duckworth & Gross, 2014).

Grit has also been distinguished from other personality constructs such as hardiness, defined as, “a pattern of attitudes and skills that provides the existential form of courage and motivation needed for learning from stressful circumstances, in order to determine what will be the most effective performance” (Maddi, Matthews, Kelly, Villarreal, & White, 2012, p. 21). Maddi and colleagues (2012) found that hardiness and grit were positively correlated ( $r = .46, p < .01$ ). The correlation, while high, is not high enough for the constructs to be considered redundant (Nunnally, 1978). Maddi and colleagues (2012) also concluded that grit and hardiness are distinctly different traits that account for unique variance in performance. For example, performance was positively associated with hardiness, but not with grit. Although these traits have similar facets in common, and are positively correlated, it is important to recognize that

they are different from one another (Maddi et al., 2012).

### **Workaholism**

Spence and Robbins (1992) described “workaholism” as a concept that purposefully reflects the word “alcoholism,” creating the notion of work as an addiction. Workaholic individuals devote a lot of time and energy to their careers. However, these individuals are not working excessively because they want to, but rather due to feelings of guilt and internal pressures. Workaholics do not gain enjoyment from their work. Workaholism has been negatively correlated with job satisfaction, life satisfaction, and overall happiness (Spence & Robbins, 1992). In their research, Spence and Robbins (1992) found that workaholics ranked higher than non-workaholics on measures of perfectionism and job stress. Workaholics also reported higher levels of health complaints (Spence & Robbins, 1992). Another study found that workaholics reported less marital satisfaction (Robinson, Flowers, & Ng, 2006), as well as less enjoyment of leisure time (Brady, Vodanovick, & Rotunda, 2008).

Workaholism can be divided into three facets: work involvement, work drive, and work enjoyment. *Work involvement* is the extent to which an individual productively uses their time (both in and out of the workplace) and is committed to work. *Work drive* refers to an individual’s inner motivation to work, and *work enjoyment* indicates the amount of enjoyment a person derives from their work. In a study conducted by Aziz and Tronzo (2011), conscientiousness was positively correlated with all three aspects of workaholism, and was most strongly related to work drive. As stated earlier, grit is positively correlated with conscientiousness (Duckworth et al., 2007). This could suggest that grit is positively correlated with the *work drive* aspect of workaholism, but not as strongly related to the other two.

Interestingly, workaholism can come in many different forms. Spence and Robbins

(1992) identified several different types of workaholics, including enthusiastic and non-enthusiastic. Both types are defined as “persons exhibiting high work involvement and a high drive to work” (Bonebright, Clay, & Ankenmann, 2000; p. 469). However, whereas the enthusiastic workaholic reports high enjoyment of work, the non-enthusiastic workaholic reports low enjoyment of work (Bonebright et al., 2000; Spence & Robbins, 1992).

Bonebright and colleagues (2000) found that enthusiastic workaholics had significantly higher levels of life satisfaction and purpose in life than non-enthusiastic workaholics. However, both enthusiastic and non-enthusiastic workaholics had greater levels of stress in their personal lives instigated by work than their non-workaholic counterparts. There were also no differences between enthusiastic and non-enthusiastic on their levels of stress between their work and their personal lives (Bonebright et al., 2000). Regardless of whether a workaholic enjoys their work or not, they still report higher levels of conflict in their balance between their careers and life.

**Work-family balance.** Workaholism has also been studied in its relation to work-family balance. Work-family balance is the idea that an individual’s job and their personal life remain separate and balanced. Work-life conflict, or *spillover*, is a “within-person across domains transmission of demands and consequent strain from one area of life to another” (Bakker, Demerouti, & Burke, 2009, p. 23). This could mean that work interferes with family, or family interferes with work. It is more typically reported that, though both family and work can interfere with each other, work is more likely to interfere with family life more than family would interfere with work (Frone, Russell, & Cooper, 2006).

Work-life conflict can manifest in a number of ways. Where an individual’s values lie depends on which area of life they see as interfering with the other (Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005). For example, those who value family over work will perceive work



as being more stressful and invasive. In 2000, Carlson and Kacmar found that those who put a high value on work and a low value on family reported family interfering with work, job involvement, and job satisfaction, compared to those individuals who highly valued both work and family (Eby et al., 2005). Hence, it would appear that work-family values may play a mediating role between both work and family, as well as positive and negative outcomes related to those domains (Eby et al., 2005).

Other research has found that demands, whether on or off the job, can influence both work interfering with family, and family interfering with work, leading to overall psychological strain (Eby et al., 2005). Work-interfering-family (WIF) and family-interfering-work (FIW) conflicts have been linked to negative job outcomes. Specifically, Major, Klein, and Ehrhart (2002) found that high WIF was associated with turnover intentions, and high FIW was associated with absenteeism.

Bakker and colleagues (2009) found that workaholism is positively related to work-life conflict, or spillover, especially within dual-income families. This is partially due to a lack of support from either spouse towards the other (Bakker et al., 2009). When both partners are experiencing stress from work, it is difficult to set aside their own stressors in order to fully support or comfort their spouse.

Though it is reported by both genders, work-family conflict appears to be a greater problem for women in the workplace (King, 2008). Because of the history and social norms surrounding each gender role, and how the organization views its ideal worker, men and women experience different kinds and amounts of negative work-life conflict (King, 2008). The conflict of work and family can be exacerbated by a perceived deviation from the "ideal worker" archetype, leading to those with caretaker roles to be perceived as not as dedicated to the

organization. This has a disproportionate impact on working mothers, who are seen as less worthy of training than childless women or working fathers (King, 2008).

Whereas those caretaker allegations are somewhat in the past as more women enter the workplace, there is still room for growth in terms of how organizations handle employees and work-family conflict. As time goes on, the family as a social institution continues to change. Compared to the past, more working women are now taking care of their elderly parents as well as their nuclear families (Halpern, 2005). Rates of single mothers living in poverty and working are growing (Halpern, 2005). Employers and policy makers in the United States have been working toward accommodating the growing number of family-employees by providing such services as on-site daycare and flextime (Halpern, 2005). However, these policies have a long way to go before they are able to fully accommodate employees with families.

Though the effects of workaholism and work-family balance have been studied both independently as well as together (Brady et al., 2008; Eby et al., 2004; Robinson et al., 2006), neither of these constructs has been empirically compared to grit. If grit and workaholism are related, there is potential that too much grit could have a negative relationship with work-family balance. Individuals who are too focused and driven on their long-term career goals may not be able to separate their focus from their jobs once they are out of work. Such focus on work can spill over into employees' home lives, creating the potential for work-family conflict and overall life dissatisfaction. (Useem, 2016).

The idea that too much grit is potentially harmful is found more in popular culture articles than in scientific journals (Kamenetz, 2016; Khazan, 2015; Useem, 2016). Due to little to no known research on the negative effects of grit, it leaves some to wonder what negative outcomes grit can have on an individual. Critics of grit find that it may be overrated, challenging

its attractiveness as a trait (Useem, 2016), or its likelihood of turning into hardheadedness (Khazan, 2015). Some critics have questioned Duckworth's (2007; 2013) reported results themselves (Kamenetz, 2016). For instance, a meta-analysis of 88 studies involving grit concluded that although grit is related to conscientiousness and does have moderate predictive power of success and achievement, its measure leaves room for improvement (Credé, Tynan, & Harms, 2016).

### **Integrating Grit, Workaholism, and Work-family Balance**

Based on previous research (Aziz & Tronzo, 2011; Singh & Duggal Jha, 2008; Spence & Robbins, 1992), there seems to be support that grit and non-enthusiastic workaholism are negatively correlated (Aziz & Tronzo, 2011; Duckworth et al., 2007; Spence & Robbins, 1992). As stated earlier, grit is highly correlated with the Big Five construct conscientiousness (Duckworth et al, 2007). Conscientiousness has been found to be significantly related to all three components of workaholism, specifically work drive (Aziz & Tronzo, 2011). Yet, conscientiousness is positively related to job satisfaction (Costa et al., 1995), whereas workaholism is negatively related to job satisfaction (Spence & Robbins, 1992). A possible explanation for conscientiousness and workaholism being positively related, yet resulting in different relationships with job satisfaction, is that conscientiousness acts as a moderator between workaholism and negative outcomes related to the workplace, such as job dissatisfaction and work-family conflict.

Because they are so closely related, it is not unreasonable to think that grit, like conscientiousness, could also serve as a moderator between workaholism and negative job outcomes such as work-family conflict. As stated before, grit has been found to act as a buffer between stressful or traumatic life events and suicidal tendencies (Blalock et al., 2015). If grit

moderates the relationship between such life events and negative reactions to those events, it may also have the potential to reduce the effect of negative outcomes in other areas of one's life. Given these previous findings, it may be that grit would also serve as a moderator to workaholism, reducing the negative consequences of work-family conflict.

Grit, like conscientiousness, is positively related to life satisfaction (Duckworth et al., 2007). Life satisfaction is also positively related to work-family balance (Bonebright et al., 2000). Conversely, workaholism can either be positively or negatively correlated to life satisfaction (Bonebright et al., 2000; Singh & Duggal Jha, 2008). As stated earlier, enthusiastic workaholics experienced more life satisfaction than non-enthusiastic workaholics (Bonebright et al., 2000). Given these findings, and realizing the complexity of workaholic tendencies, it may be that grit serves as a moderator between workaholism and work-family balance.

The notion that grit may act as a moderator, rather than a mediator, between workaholism and work-family conflict, can be broken down into three parts: grit being positively related to workaholism, grit being positively related to work-family conflict, and workaholism being negatively related to work-family conflict (Baron & Kenny, 1986). First, grit, like conscientiousness, is likely to be related to workaholism, but result in less negative outcomes (Aziz & Tronzo, 2011; Duckworth et al., 2007). In regard to work-family conflict, grit has been found to be positively related to family outcomes, such as lower divorce rates among men (Eskreis-Winkler et al., 2014) as well as a higher sense of commitment to the marriage (Hill, Burrow, & Bronk, 2014). Finally, workaholism and work-family conflict is a multidirectional relationship; work can interfere with family, and family can interfere with work (Brady et al., 2008; Eby et al., 2005; Frone et al., 1992). Because the relationship is multifaceted, there is reason to explore a third, mitigating factor between workaholism and work-family conflict that

yields more positive outcomes. Therefore, it is not just that workaholics must have grit in order to reduce family conflict due to work. Rather, similar to how it affects other negative life situations (Blalock et al., 2015), the personality trait grit may have an overall positive effect on issues relating to workaholism and work-family conflict.

Due to its roots in positive psychology, grit has only been studied in regards to its relationship to positive characteristics. As stated previously, grit is highly correlated with conscientiousness, positive affect, happiness, and life satisfaction (Blalock et al., 2015, Duckworth et al., 2007; Eskreis-Winkler et al., 2014; Singh & Duggal, 2008). However, it has not been adequately studied alongside negative psychological constructs such as workaholism. The purpose of this study is to examine whether grit is positively or negatively correlated with workaholism and work-family conflict. It is possible, however, that the relationships in question may be more complicated, and that grit's true role in understanding this domain may be that of a moderator variable.

## Chapter II

### Rationale and Hypotheses

Many Americans today struggle with maintaining balance between working hard and spending time with their families (Flynn, 2014). One construct that may help employees to manage the inevitable conflict between their work and their personal lives is grit. *Grit* is a personality trait that can be described as “the perseverance and passion for long-term goals” (Duckworth et al., 2007, p. 1087).

Those who score high on grit have demonstrated success in academic settings, extracurricular settings, and even battling suicidal ideations (Blalock et al., 2015; Duckworth et al., 2007). Though a relatively new construct, grit has the potential to help organizations predict outcomes, such as performance, similar to the personality trait conscientiousness. Research has indicated that grit is positively correlated with conscientiousness (Duckworth et al., 2007). However, because grit is a fairly new construct, and replication of results is key to the science of psychology, the following hypothesis is proposed:

H1: *Grit will be positively correlated with conscientiousness.*

Because grit has been correlated with conscientiousness, both grit and conscientiousness tend to be related to similar outcomes. Conscientiousness and grit have both been negatively related to suicidal ideation (Blalock et al., 2015) and divorce (Eskreis-Winkler et al., 2014), as well as positively related to hardiness (Maddi et al., 2012), positive affectivity, life satisfaction (Singh & Duggal Jha, 2008), self-control (Duckworth & Gross, 2014), and work ethic (Meriac et

al., 2015). Though different constructs, it is reasonable to assert that grit and conscientiousness may relate similarly to other outcomes. Aziz and Tronzo (2011) found that although conscientiousness was positively related to all three facets of workaholism, the only significant relationship was with work drive. Therefore, the following hypothesis is proposed:

*H2: Grit will be positively correlated with work drive.*

Because workaholism tends to be related to many negative outcomes, such as poor job satisfaction, poor life satisfaction, and overall lower happiness (Spence & Robbins, 1992), it may be baffling to learn that conscientiousness is positively related to workaholism (Aziz & Tronzo, 2011). However, as discussed earlier, there are two types of workaholics: enthusiastic and non-enthusiastic (Spence & Robbin, 1992). Enthusiastic workaholics differ from their non-enthusiastic counterparts in that they enjoy the work they are doing (Bonebright et al., 2000). Bonebright and colleagues (2000) found that though enthusiastic and non-enthusiastic workaholics differ in enjoyment of work, they do not differ significantly on the level of conflict they experience in their personal lives. Both types of workaholics experience similar levels of work-family conflict, but it is how they react to this conflict that may help explain the positive correlation with work-family conflict. It is possible that a workaholic's level of grit may moderate and reduce the negative effect of workaholism on work-family conflict. That is, grit may help explain why conscientiousness is often positively correlated with workaholism and work-family conflict. Thus, the following hypothesis is proposed:

*H3: Grit will moderate the relationship between workaholism and work-family conflict such that those who score high on grit will score lower on work-family conflict than those who rank low on grit (see Figure 1).*

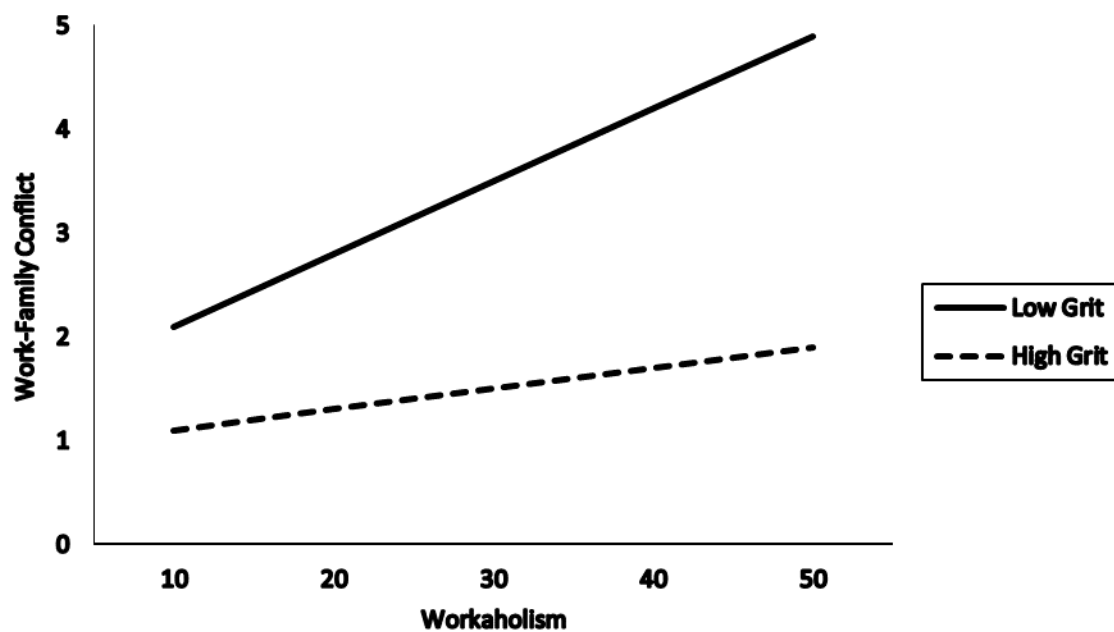


Figure 1. Grit Moderating Workaholism and Work-Family Conflict.



Due to the relatively sparse amount of research on grit, the effects of gender on grit have not been investigated. When reviewing the literature, only one study was found that acknowledged that there may be gender differences regarding grit. In a study conducted by Eskreis-Winkler et al. (2014), men who scored high on grit were more likely to stay married than men who scored low on grit. Yet, grit had no significant effect on staying married for women. Consequently, due of the lack of previous research, the current research will investigate if there are gender differences on grit as an exploratory hypothesis.

## **Chapter III**

### **Method**

#### **Participants**

Participants were recruited from Amazon's Mechanical Turk (MTurk). MTurk is a crowdsourcing internet marketplace where requesting researchers can post tasks such as surveys for MTurk workers to take. Those who participate in the tasks can receive monetary compensation for their participation. To participate in this study, participants were required to have a minimum of 50 HITS completed and a minimum HIT acceptance percentage of 95 to ensure quality data. Based on Cohen's (1992) method of power analysis, a minimum of 85 subjects were needed to have power of .80 to detect a medium effect with an alpha of .05.

A total of 156 surveys were collected from MTurk. Two surveys were incomplete, and another seven did not pass the quality check. This resulted in a total of 147 participants. Most participants were white (72.8%), followed by African-American (9.5%), Asian (8.8%), Hispanic (5.4%), and biracial or multiracial (3.4%). Gender identification was divided almost evenly between females (52.4%) and males (47.6%). The largest age group to participate was 25-34 (45%), followed by ages 35-44 (30.6%). The occupation most frequently reported was management/business/financial (21.8%), followed by professional/educational (20.4%).

Due to the constructs being examined in this study, the inclusion of participants was restricted to meeting certain criteria. First, as part of the study title, potential participants learned that the study involved work-life balance and that participants must be or have been married and/or have had children to be eligible to participate. Participants were asked to choose their

current relationship status (single, never married; cohabiting; civil union; married; separated; divorced; widowed). They were then asked whether they had any children by answering yes or no. Participants who answered both “single, never married” and “no children” could participate in the study, but their results were not included in the final analysis. This was to ensure that, regardless of the family type, all participants had the potential to experience work-family balance. All participants were compensated \$0.50 for their time and answers. All genders and races were welcome to participate in the study in order to increase generalizability to different populations. However, participants were solely being recruited from the United States and had to be at least 18 years old. This was to reduce confounding cultural factors, such as individualism and collectivism.

## Measures

**Grit.** Grit was measured using The Grit Scale (Duckworth et al., 2007). Items of this 12-item measure were rated on a 5-point scale ranging from 1 (*not at all like me*) to 5 (*very much like me*). Example items included, “Setbacks don’t discourage me,” and “I become interested in new pursuits every few months.” Previous research had found the overall internal consistency of the Grit Scale to be .72 (Duckworth et al., 2007). Scores can range from a minimum of 12 points (low grit) to a maximum of 60 points (high grit). The Grit Scale is included in Appendix A.

For this study, Cronbach’s alpha for the Grit Scale was found to be .59, which is much lower than previous reports (Duckworth et al., 2007). An analysis was conducted to determine if the alpha could be increased by eliminating items. The factor analysis yielded two factors, which could be expected since grit is defined by ‘perseverance’ and ‘passion.’. As the analysis continued, it appeared that all the items being deleted were reversed scored items. Once all six of the reverse scored grit items were deleted, the coefficient alpha reached .82. Based on this

outcome, I decided to analyze the hypotheses via both the original Grit Scale, along with what I will call the “Positive Grit Scale,” which referred to the positively worded items that yielded the .82 coefficient alpha.

**Workaholism.** Workaholism was measured using The Workaholism Battery (WorkBAT Spence & Robbins, 1992). This updated scale consisted of 25 items measuring work enjoyment, work drive, and work involvement. Responses were on a 5-point rating scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item of work enjoyment was, “My job is more like fun than work.” A sample item of work drive was, “I seem to have an inner compulsion to work hard.” An item question of work involvement was, “I spend my free time on projects and other activities.” Scores were added together to create an overall workaholism score. Higher scores indicated higher levels of workaholism. Scores can range from a minimum of 25 points (low workaholism) to a maximum of 75 points (high workaholism).

Previous research had found the internal consistency of the WorkBAT to vary from .67 to .86 (McMillan, Brady, O'Driscoll, & Marsh, 2002). The coefficient alpha in this study was .85. All three facets of the scale were combined into one collective score, but each facet was also examined individually for exploratory purposes. The coefficient alpha for work enjoyment was .89, work drive was .73, and work involvement was .51. Given the low alpha, analyses regarding work involvement were not conducted. The workaholism measure is included in Appendix B.

**Work-Family Conflict.** Work-family conflict was measured using the Satisfaction with Work-Family Balance Scale (Valcour, 2007). This scale consisted of five items. Respondents were asked to indicate satisfaction with each statement, on a scale from 1 (*very dissatisfied*) to 5 (*very satisfied*). An example item was, “How well your work life and your personal life fit together.” Scores can range from a minimum of 5 points (low satisfaction) to a maximum of 25

points (high satisfaction). Valcour (2007) found the coefficient alpha for the scale to be .93 (Valcour, 2007). For this study, the coefficient alpha for the scale was .91. The work-family balance measure is included in Appendix C.

**Demographic variables.** Demographic information collected included age, ethnicity, gender, and occupation, along with the two qualifying questions of relationship status and whether participants had children. Age and ethnicity were collected to examine diversity among the sample and helped assess external validity. Because this study involved the workplace, information about occupation was also collected. Research in work-life balance has found that certain occupations, such as physicians, experience higher degrees of work-family conflict and thus experience more career burnout (Shanafelt et al., 2012). Demographics were asked at the very beginning of the study, immediately following the informed consent. MTurk Worker ID was also collected at the end of the survey to indicate completion to the participants. The demographic items are included in Appendix D.

### **Procedure**

Institutional Review Board (IRB) approval was sought through Xavier University's IRB. Due to the confidential nature of the research, this study was submitted under "exempt" status (see Appendix E). Once approved, study materials were posted on Qualtrics and data were collected in survey format via MTurk (see Appendix F for the MTurk recruitment interface). Participants read the instructions and the conditions to taking the full survey once they clicked on the survey link. At the completion of the survey, participants received a unique completion code in order to submit results and ensure payment. Independent variables included measures of grit and workaholism, with the dependent variable being work-family balance.

This study included no experimental manipulations due to its correlational design.

However, quality checks were placed within the survey to ensure participant attention. Two quality check items were implemented, one within the workaholism measure and one within the grit measure. An example of a quality check item was, “Please answer ‘strongly agree’ for this item.” Those who did not pass both quality check items did not have their answers used in the final analysis.

The integrity and the privacy of participants and their answers was kept to a high standard. An informed consent (Appendix G) was provided at the beginning of the survey. Through Amazon’s MTurk, participants were welcome to stop taking the survey at any time and not submit their answers. Survey submissions were stored in one file and were not shared with anyone other than the researcher and thesis advisor. There was no deception involved, and participants were given the option to ask any questions about the survey once their answers had been submitted. The study took about ten minutes to complete, and participants were compensated \$0.50 for their participation.

## Chapter IV

### Results

Hypothesis 1 proposed that that grit would be positively related to conscientiousness. Unfortunately, a measure of conscientiousness was inadvertently omitted during the data collection, and an analysis could not be conducted on this hypothesis. Though the relationship between grit and conscientiousness has been studied before (Duckworth et al., 2007), replication is an important part of scientific research. Future research should continue to examine the relationship grit has with conscientiousness, along with the other Big Five personality factors.

Hypothesis 2 proposed that grit would be positively related to work drive, an aspect of workaholism. A Pearson Product-Moment Correlation was conducted to evaluate the hypothesized relationship, both with the original grit scale and our “Positive Grit” scale. See Table 1 for a full correlation matrix. The original grit scale was significantly related to both workaholism,  $r(145) = .18, p = .03$ , and work drive,  $r(145) = .29, p < .001$ . Interestingly, Positive Grit was also significantly related to workaholism,  $r(145) = .38, p < .001$ , and work drive,  $r(145) = .38, p < .001$ . Thus, Hypothesis 2 was supported. To determine if there was a significant difference between the original measure of grit and the “Positive Grit” measure in regards to the correlations with both workaholism and work drive, a Fisher’s  $r$ -to- $z$  was conducted. “Positive Grit” was found to have a significantly stronger relationship to workaholism ( $r = .38$ ) than did the original grit scale ( $r = .18$ ),  $z = 2.63, p < .05$ . However, the difference in correlations between the original grit scale ( $r = .29$ ) and “Positive Grit” ( $r = .38$ ) in relation to work drive was not

Table 1

*Summary of Intercorrelations of Grit, Positive Grit, Workaholism, and Work Drive*

Variable	1	2	3	4
1. Original Grit	(.59)			
2. Positive Grit	.41**	(.82)		
3. Workaholism	.18*	.38**	(.85)	
4. Work Drive	.29**	.38**	.73**	(.73)

\*  $p < .05$ ; \*\*  $p < .01$ *Note:* Coefficient alphas in parenthesis along diagonal



significantly different,  $z = 1.14$ ,  $p > .05$ .

Hypothesis 3 proposed that grit would moderate the relationship between workaholism and work-family conflict such that those who scored high on grit would score lower on work-family conflict than those who scored low on grit. To analyze this, main effects were first entered in step one of a multiple regression, followed by the moderator term in step two. The main effects of this study were Workaholism and Grit, and the moderator term was Workaholism x Grit, with Work-Family Conflict as the dependent variable for both. The results of the original grit scale were not significant; grit did not moderate the relationship between workaholism and work-family conflict,  $\Delta R^2 = .01$ ,  $F(1,143) = 1.53$ ,  $p = .22$ . Similarly, “Positive Grit” did not act as a moderator between workaholism and work-family balance,  $\Delta R^2 = .004$ ,  $F(1,143) = .66$ ,  $p = .42$ . These results fail to confirm Hypothesis 3 when using either measure of grit.

An independent-sample  $t$  test was conducted to compare grit levels between males and females. When exploring gender differences in regards to grit scores, there was no significant difference between men and women,  $t(145) = -.01$ ,  $p = .939$ . Similarly, there was no reported difference between males and females in relation to “Positive Grit.” Although females ( $M = 3.86$ ,  $SD = .61$ ) reported higher levels of “Positive Grit” than their male counterparts ( $M = 3.75$ ,  $SD = .80$ ), the difference was not significant,  $t(145) = -.97$ ,  $p = .33$ . Finally, there was no significant effect of type of occupation on level of grit from the original scale,  $F(10, 136) = 1.02$ ,  $p = .43$ .

## **Chapter V**

### **Discussion**

Employers are constantly trying to figure out what sets successful employees apart from non-successful employees. Satisfied employees are more productive (Syptak, Marsland, & Ulmer, 1999), and employers want to know the key factor that resulting in hard workers having a fruitful life outside of the office. It is possible that the key to better work-family balance is grit, which is the “perseverance and passion for long-term goals” (Duckworth et al., 2007, p. 1087), and possibly the factor that buffers the negative effects of working long, hard hours in an employee’s personal life. Thus, the current research focused on grit, and how it may moderate the relationship between workaholism and work-family conflict.

Hypothesis 1 proposed that grit would be positively correlated with conscientiousness. This hypothesis was included to examine if results from previous research (Duckworth et al., 2007) would be replicated. Unfortunately, Hypothesis 1 could not be tested. A measure of Conscientiousness was inadvertently omitted in this study. It is strongly encouraged that future research continues to pursue the possible existence of this relationship.

Hypothesis 2 proposed that grit would be positively related to both workaholism and a specific facet of workaholism known as work drive. The results indicated that the original grit scale was positively related to both workaholism ( $r = .179$ ) and work drive ( $r = .291$ ). These current research findings are consistent with the work done by Meriac, et al. (2015), who found that grit was positively related to hard work, a construct almost identical to work drive. Grit has

been compared to the personality construct conscientiousness (Duckworth et al., 2007), which also has been found to correlate with workaholism and work drive (Meriac et al., 2015). This study's results also imply that if employers want to consider assessing grit when selecting employees, they may find that those who score higher on grit may be more driven to work hard. However, those scoring high on grit may also be more likely to become workaholics. Before employers are able to consider the implications and benefits when testing for applicant personality traits, future research should continue to examine grit in relation to job performance.

Hypothesis 3 proposed that grit would moderate the relationship between workaholism and work-family conflict, so that those who scored high on grit would have lower levels of work-family conflict, and those with lower grit scores would report higher levels of work-family conflict. Neither the original grit scale, nor the "Positive Grit" scale operated as a moderator between workaholism and work-family conflict. Hence, these results do not confirm Hypothesis 3. A possible reason for these non-significant findings is that the variance accounted for by the main effects was sizable (49%). Other reasons for a lack of support for this hypothesis include the fact that grit may have nothing to do with work-family balance at all, or perhaps it is not related to workaholism. There are numerous factors that play into how a person is able to balance their work and their home life. Additional research should continue to examine workaholism, work-family conflict, and grit as separate constructs as well as how they may or may not relate to one another.

Because Duckworth's (2007) grit construct is relatively new, very little research has been conducted on the scale that measures the construct. Previous literature that did utilize the grit scale indicated mixed results regarding its reliability (Kamenetz, 2016; Useem, 2016). Initially, the reliability of the grit scale used in this study was .59. To increase the reliability of the scale,

an analysis was conducted to eliminate items that might have hindered the reliability of the original scale. After eliminating six of the twelve items, a coefficient alpha of .82 was obtained. Interestingly, the six items eliminated by the analysis were all the negatively-worded or reverse scored items of the grit scale, leaving only positively-worded statements. Thus, the new six-item scale was referred to as the “Positive Grit Scale” in this study. Both the original grit scale and the Positive Grit scale were used to test the hypotheses put forth in this study.

In addition to grit being positively correlated with work drive, our newly created measure of “Positive Grit” was also positively correlated to workaholism ( $r = .380$ ) and work drive ( $r = .378$ ). Interestingly, “Positive Grit” was more strongly correlated with workaholism ( $r = .380$ ) than was the original grit measure ( $r = .179$ ;  $z = 2.634$ ). Although the items measuring “Positive Grit” were derived from the original Grit Scale, the results from our analysis to improve the reliability of the scale revealed that the only remaining items were positively worded. Said another way, upon inspection, the items that were deleted from our analysis contained reverse scored statements. This finding suggests that perhaps the absence of grit does not fully represent the grit construct. For instance, the item, “New ideas and projects sometimes distract me from previous ones” is arguably not related to grit at all. Given the results of this study that “Positive Grit” proved to be a stronger predictor for workaholism than the original measure of grit, there is a possibility that “Positive Grit” (and the positive items that comprised it) may be a better measure of grit than the Duckworth’s (2007) original Grit Scale. The implications for these results are directed towards researchers as well as practitioners. More research needs to be conducted on both Duckworth’s original grit scale and the “Positive Grit” scale to determine which is the best approach to measuring grit.

The relationship between grit and work-family conflict was not a formal hypothesis in

this study, but Pearson Product-Moment Correlations were still conducted. Results indicated that work-life balance was not significantly correlated with the original grit scale,  $r(147) = .062, p = .453$ . However, “Positive Grit” was found to be significantly correlated with work-life balance,  $r(147) = .301, p < .01$ . Though not formally part of this study, these results have practical and academic implications. The finding that Positive Grit was negatively correlated with work-family conflict may be more evidence supporting the argument that the original grit scale is not as reliable or as strong of a measure as the “Positive Grit” scale. Future research should continue to explore the differences between these two scales in order to create the most accurate measure of grit.

As an exploratory analysis, gender was also examined in relation to grit. Results showed that there was no gender difference when using either the original grit scale ( $t = -.010, p = .939$ ) or the “Positive Grit” scale ( $t = -.967, p = .329$ ). These results are interesting and add to the results reported by Eskreis-Winkler et al. (2014), who found that women reported slightly higher levels of grit than did men. Though the results here indicate no gender differences on either scale, more research exploring gender differences in relation to grit needs to be conducted.

### **Limitations and Future Research Directions**

One limitation from this study could have been the use of MTurk as the sample of choice. As the participants must self-select to be a member of MTurk, there may be something about MTurk workers that would not be detected unless compared to another population. For example, it may not be coincidental that in this study, scales with more reverse scored items had lower alphas than scales that had fewer reverse scored items. This may be due to the nature of how MTurk participants approach taking surveys. In order to maximize profits, some participants may take surveys quickly, allowing very little variation within their answers. Future research should

consider different populations to measure grit. Research regarding the use of the MTurk population and scales with reverse scored items should also be pursued.

Future research should also focus on the potential negative effects of grit. As stated previously, grit has been studied alongside traits that would be considered “positive,” such as conscientiousness (Duckworth et al., 2007), perseverance (Meriac et al., 2015), and success (Duckworth et al., 2007). In this study, both grit and “Positive Grit” were positively related to workaholism, and “Positive Grit” was positively correlated with work drive. Though work drive, an aspect of workaholism that is not necessarily negative, working long hours with little to no enjoyment could be considered as negative. This finding suggests that grit may also be related to other potentially negative traits or behaviors, such as stubbornness

The major contribution of this research is that Duckworth’s (2007) Grit Scale may need to be further developed. In this study, the original grit scale had an unacceptably low level of reliability (.59). Further analysis revealed that eliminating six of the original 12 items increased the internal consistency to a more acceptable .82. Upon closer inspection, it was discovered that the six items retained from the original grit scale were all positively worded, and the other six discarded items were all reverse scored. It may be that the absence of grit is not necessarily the opposite of grit. An example of a reverse scored scale item is, “I often set a goal but later choose to pursue a different one.” It may be that the reverse coded items of the grit scale do not actually reflect the opposite of grit. Rather than making a statement about often an individual chooses to pursue different goals, it may be more accurate to include an item that is scored normally, while stating “I often set goals and *rarely* later choose to pursue a different one.”

As a general statement, setbacks can be discouraging for anyone. In terms of grit, however, the difference is whether that setback hinders or motivates a person. Whereas people

who score low on grit would most likely give up, those who score higher on grit could still experience the negative emotions that come with a setback, but keep pushing forward. This implies that there may be a factor regarding timing and how long a negative feeling lasts after a setback. Those who score high on grit would still experience the negative effects of a setback, but would not let that discourage them for very long. Those who are in long-term pursuits can see past one setback and look forward to growing, learning, and continuing towards their goals. Ultimately, then, future researchers should examine each of the grit items to ensure that they are gauging the reactions to situations as opposed to the mere presence of situations in order to improve the measurement of grit.

Future research should also continue to explore the differences in levels of grit between genders and across occupations. Though this study did not find any differences among occupations, this may have been due to the sample, or the specific nature of the job choices. The majority of participants identified as working in an academics or in management, and participants had 11 options to choose from when selecting their career. Previous research examined grit in relation to school children and military students (Duckworth et al., 2007), but not those in other career settings. Perhaps comparing jobs of different skill or academic levels will show a difference in grit levels based on occupation. Additionally, research should be conducted among different occupations in relation to grit. Though this study found no significant differences, perhaps a limitation was that there were too many career choices. Collapsing the occupational categories into smaller choices (such as 'white collar' and 'blue collar') may lead to more accurate representation regarding grit and occupation.

Also, because replication is key for the success of research, gender should continue to be examined in relation to grit. In this study, there was no significant difference in levels of grit

between males and females. Previous literature regarding gender differences in grit is mixed (Duckworth et al., 2007), so these results add value to the literature. However, this study did not consider the reasons why this occurred. Further research should explore not only if there are gender differences, but also why there may be gender differences on grit. Researchers should also consider whether gender and grit are crucial factors when it comes to a person's success with avoiding work-family conflict.

## **Conclusion**

Research has shown that certain personality traits, such as conscientiousness, may be linked to success in the workplace (Barrick & Mount, 1991). Other variables, such as workaholism (Spence & Robbins, 1992) and work-family conflict (Eby et al., 2005) have also been linked with lower organizational performance. However, little research has been conducted regarding grit (Duckworth et al., 2007) in relation to workplace issues, and how grit may influence the previously mentioned concepts. Results of the current study provide unique insights not only to the construct of grit itself, but also how it related to both workaholism and work-family conflict.

In this study, the reliability for the original Grit Scale was disappointingly low. After conducting an analysis and eliminating items from the scale that decreased the reliability, we notice that only positively-worded items remained. Thus, the "Positive Grit Scale" was created. Both the original measure of grit and the newly created "Positive Grit" measures were used to test each hypothesis. Both the original grit measure and the "Positive Grit" measures were found to correlate with workaholism as well as with work drive. However, "Positive Grit" proved to be a better predictor of workaholism than the original grit scale. These results suggest that "Positive Grit" may be a promising new approach to measuring the grit construct while also highlighting



several issues regarding Duckworth's (2007) original Grit Scale, suggesting new avenues for future research on the grit construct.

## Chapter VI

### Summary

#### Grit: The Moderator Between Workaholism and Work-Family Conflict

According to the Organization for Economic Cooperation and Development, the United States ranks 29<sup>th</sup> out of 38 countries on scales that measure work-life balance and amount of time spent on leisure activities, including sleep (“How’s Life? United States,” 2016). Americans are putting in longer hours at work, and are spending less time with their families, and are not spending enough free time doing the things that bring them joy (Flynn, 2014). Increasingly, employers are taking notice to this and how it is negatively affecting their companies (Flynn, 2014). Where is the difference that lies between those who want to work hard versus those who feel compelled to work hard? This study investigates a new personality construct, grit, as it may reliably predict aspects of job performance such as workaholism and work-family conflict. *Grit*, as defined by Duckworth, Peterson, Matthews, and Kelly (2007), is, “the perseverance and passion for long-term goals” (p. 1087).

Those who score high on grit have demonstrated success in academic settings, extracurricular settings, and even battling suicidal ideations (Blalock et al., 2015; Duckworth et al., 2007). Though a relatively new construct, grit has the potential to help organizations predict outcomes, such as performance, similar to the personality trait conscientiousness. Research has indicated that grit is positively correlated with conscientiousness (Duckworth et al., 2007). However, because grit is a fairly new construct, and replication of results is key to the science of

psychology, the following hypothesis is proposed:

*H1: Grit will be positively correlated with conscientiousness.*

Because grit has been correlated with conscientiousness, both grit and conscientiousness tend to result in similar scientific outcomes. Conscientiousness and grit have both been negatively related to suicidal ideation (Blalock et al., 2015) and divorce (Eskreis-Winkler et al., 2014), as well as positively related to hardiness (Maddi et al., 2012), positive affectivity, life satisfaction (Singh & Duggal Jha, 2008), self-control (Duckworth & Gross, 2014), and work ethic (Meriac et al., 2015). Though different constructs, it is not improbable to assume that grit and conscientiousness may relate similarly to other outcomes. Aziz and Tronzo (2011) found that although conscientiousness was positively related to all three facets of workaholism, the only significant relationship was with work drive. Therefore, the following hypothesis is proposed:

*H2: Grit will be positively correlated with work drive.*

Because workaholism tends to be related to many negative outcomes, such as poor job satisfaction, poor life satisfaction, and overall lower happiness (Spence & Robbins, 1992), it may be baffling to learn that conscientiousness is positively related to workaholism (Aziz & Tronzo, 2011). However, as discussed earlier, there are two types of workaholics: enthusiastic and non-enthusiastic (Spence & Robbin, 1992). Enthusiastic workaholics differ from their non-enthusiastic counterparts in that they actually enjoy the work they are doing (Bonebright et al., 2000). Bonebright and colleagues (2000) found that though enthusiastic and non-enthusiastic workaholics differ in enjoyment of work, they do not differ significantly on the level of conflict they experience in their personal lives. Both types of workaholics experience similar levels of work-family conflict, but it is how they react to this conflict that may help explain the positive correlation with work-family conflict. It is possible that a workaholic's level of grit may

moderate and reduce the negative tension on work-family conflict. That is, grit may help explain why conscientiousness is often positively correlated with workaholism and work-family conflict.

Thus, the following hypothesis is proposed:

*H3: Grit will moderate the relationship between workaholism and work-family conflict such that those who score high on grit will score lower on work-family conflict than those who rank low on grit (see Figure 1).*

Due to the relatively sparse amount of research on grit, the effects of gender on grit have not been investigated. When reviewing the literature, only one study was found that acknowledged that there may be gender differences regarding grit. In a study conducted by Eskreis-Winkler et al. (2014), men who scored high on grit were more likely to stay married than men who scored low on grit. Yet, grit had no significant effect on staying married for women. Consequently, due of the lack of previous research, the current research will investigate if there are gender differences on grit as an exploratory hypothesis.

## **Method**

### **Participants**

A total of 156 surveys were collected from MTurk. Two surveys were incomplete, and another seven did not pass the quality check. This resulted in a total of 147 participants. Most participants were white (72.8%), followed by African-American (9.5%), Asian (8.8%), Hispanic (5.4%), and biracial or multiracial (3.4%). Gender identification was divided almost evenly between females (52.4%) and males (47.6%). The largest age group to participate was 25-34 (45%), followed by ages 35-44 (30.6%). The occupation most frequently reported was management/business/financial (21.8%), followed by professional/educational (20.4%).

Due to the constructs being examined in this study, the inclusion of participants was

restricted to meeting certain criteria. First, as part of the study title, potential participants learned that the study involved work-life balance and that participants must be or have been married and/or have had children to be eligible to participate. Participants were asked to choose their current relationship status (single, never married; cohabiting; civil union; married; separated; divorced; widowed). They were then asked whether they had any children by answering yes or no. Participants who answered both single, never married and no children could participate in the study, but their results were not included in the final analysis. This was to ensure that, regardless of the family type, all participants had the potential to experience work-family balance. All participants were compensated \$0.50 for their time and answers. All genders and races were welcome to participate in the study in order to increase generalizability to different populations. However, participants were solely being recruited from the United States and had to be at least 18 years old. This was to reduce confounding cultural factors, such as individualism and collectivism.

## **Measures**

**Grit.** Grit was measured using The Grit Scale (Duckworth et al., 2007). Items of this 12-item measure were rated on a 5-point scale ranging from 1 (not at all like me) to 5 (very much like me). The maximum score on this scale was 60 (extremely gritty), and the lowest score on this scale was 12 (not at all gritty). Example items included, “Setbacks don’t discourage me,” and “I become interested in new pursuits every few months.” Previous research had found the overall internal consistency of the Grit Scale to be .72 (Duckworth et al., 2007). The Grit Scale is included in Appendix A.

For this study, Cronbach’s alpha for the Grit Scale was found to be .59, which is much smaller than previous reports (Duckworth et al., 2007). An analysis was conducted to determine

if the alpha could be increased by eliminating items. As the analysis continued, it appeared that all the items being deleted were reversed scored items. Once all six of the reverse scored grit items were deleted, the reliability reached .82. Based on this outcome, I decided to analyze the hypotheses via both the original Grit Scale, along with what I will call the “Positive Grit Scale,” which referred to the positively worded items that yielded the .82 coefficient alpha.

**Workaholism.** Workaholism was measured using The Workaholism Battery (WorkBAT Spence & Robbins, 1992). This updated scale consisted of 25 items measuring work enjoyment, work drive, and work involvement. Responses were on a 5-point rating scale, ranging from 1 (strongly disagree) to 5 (strongly agree). A sample item of work enjoyment was, “My job is more like fun than work.” A sample item of work drive was, “I seem to have an inner compulsion to work hard.” An item question of work involvement was, “I spend my free time on projects and other activities.” Scores were added together to create an overall workaholism score. Higher scores indicated higher levels of workaholism. Previous research had found the internal consistency of the WorkBAT to vary from .67 to .86 (McMillan, Brady, O'Driscoll, & Marsh, 2002). The coefficient alpha in this study was .85. All three facets of the scale were combined into one collective score, but each facet was also examined individually for exploratory purposes. The coefficient alpha for work enjoyment was .89, work drive was .73, and work involvement was .51. The workaholism measure is included in Appendix B.

**Work-Family Conflict.** Work-family conflict was measured using the Satisfaction with Work-Family Balance Scale (Valcour, 2007). This scale consisted of five items. Respondents were asked to indicate satisfaction with each statement, on a scale from 1 (very dissatisfied) to 5 (very satisfied). An example item was, “How well your work life and your personal life fit together.” Valcour (2007) found the coefficient alpha for the scale to be .93 (Valcour, 2007). For

this study, the coefficient alpha for the scale was .91. The work-family balance measure is included in Appendix C.

**Demographic variables.** Demographic information collected included age, ethnicity, gender, and occupation, along with the two qualifying questions of relationship status and whether participants had children. Age and ethnicity were collected to examine diversity among the sample and helped assess external validity. Because this study involved the workplace, information about occupation was also collected. Research in work-life balance has found that certain occupations, such as physicians, experience higher degrees of work-family conflict and thus experience more career burnout (Shanafelt et al., 2012). Demographics were asked at the very beginning of the study, immediately following the informed consent. MTurk Worker ID was also collected at the end of the survey to indicate completion to the participants. The demographic items are included in Appendix D.

### **Procedure**

Institutional Review Board (IRB) approval was sought through Xavier University's IRB. Due to the confidential nature of the research, this study was submitted under "exempt" status. Once approved, study materials were posted on Qualtrics and data was collected in survey format via MTurk (see Appendix E for the MTurk recruitment interface). Participants could read the instructions and the conditions to taking the full survey once they clicked on the survey link. At the completion of the survey, participants received a unique completion code in order to submit results and ensure payment. Independent variables included measures of grit and workaholism, with the dependent variable being work-family balance.

### **Results and Discussion**

Because Duckworth's (2007) grit construct is relatively new, very little research has been

conducted on the scale that measures the construct. Previous literature that did utilize the grit scale contained mixed results regarding its reliability. Initially, the reliability of the grit scale used in this study was .59. To increase the reliability of the scale, an analysis was conducted to eliminate items that might have hindered the reliability of the original scale. After eliminating six of the twelve items, a coefficient alpha of .82 was obtained. Interestingly, the six questions eliminated by the analysis were all the reverse scored items of the grit scale, leaving only positively-worded statements. Thus, the new six-item scale was referred to as the “Positive Grit Scale” in this study. Both the original grit scale and the Positive Grit scale were used to test the hypotheses put forth in this study.

Hypothesis 1 proposed that that grit would be positively related to conscientiousness. Unfortunately, insufficient data was collected, and an analysis could not be conducted on this hypothesis. Though the relationship between grit and conscientiousness has been studied before, replication is an important part of scientific research. Future research should continue to examine the relationship grit has with conscientiousness, along with the other Big Five personality factors.

Hypothesis 2 proposed that grit would be positively related to work drive, an aspect of workaholism. A Pearson Product-Moment Correlation was conducted to evaluate the hypothesized relationship, both with the original grit scale and our “Positive Grit” scale. The original grit scale was significantly related to both workaholism,  $r(145) = .179, p = .030$ , and work drive,  $r(145) = .291, p < .001$ . Interestingly, Positive Grit was also significantly related to workaholism,  $r(145) = .380, p < .001$ , and work drive,  $r(145) = .378, p < .001$ . Thus, Hypothesis 2 was confirmed. To determine if there was a significant difference between the original measure of grit and the “Positive Grit” measure in regards to the correlations with both workaholism and



work drive, a Fisher's  $r$ -to- $z$  was conducted. "Positive Grit" was found to have a significantly stronger relationship to workaholism ( $r = .380$ ) than did the original grit scale ( $r = .176$ ),  $z = 2.634$ ,  $p < .05$ . However, the difference in correlations between the original grit scale ( $r = .291$ ) and "Positive Grit" ( $r = .378$ ) in relation to work drive was not significantly different,  $z = 1.14$ ,  $p > .05$ . These current research findings are consistent with the work done by Meriac, Slifka, and LaBat (2015), who found that grit was positively related to hard work, a construct almost identical to work drive.

Hypothesis 3 proposed that grit would moderate the relationship between workaholism and work-family conflict such that those who scored high on grit would score lower on work-family conflict than those who scored low on grit. To analyze this, main effects were first entered in step one of a multiple regression, followed by the moderator term in step two. The main effects of this study were Workaholism and Grit, and the moderator term was Workaholism x Grit, with Work-Family Conflict as the dependent variable for both. The results of the original grit scale were not significant; grit did not moderate the relationship between workaholism and work-family conflict,  $\Delta R^2 = .010$ ,  $F(1,143) = 1.526$ ,  $p = .219$ . Similarly, "Positive Grit" did not act as a moderator between workaholism and work-family balance,  $\Delta R^2 = .004$ ,  $F(1,143) = .663$ ,  $p = .417$ . These results fail to confirm Hypothesis 3 when using either measure of grit. A possible reason for these non-significant findings is that the variance accounted for by the main effects was sizable, which typically indicates there is no moderator effect.

An independent-sample  $t$  test was conducted to compare grit levels between males and females. When exploring gender differences in regards to grit scores, there was no significant difference between men and women,  $t(145) = -.010$ ,  $p = .939$ . Similarly, there was no reported difference between males and females in relation to "positive grit." Females ( $M = 3.86$ ,  $SD =$

.61) reported higher levels of “Positive Grit” than their male counterparts ( $M = 3.75$ ,  $SD = .80$ ), but it was not significant,  $t(145) = -.967$ ,  $p = .329$ . Finally, there was no significant difference between type of occupation and level of grit from the original scale,  $F(10, 136) = 1.02$ ,  $p = .429$ . These results are interesting and attribute to the mixture of results found in the previous literature. Duckworth et al. (2007) found that women reported slightly higher levels of grit than did men, which is consistent with the current results. However, Duckworth was using her original grit scale, which in this study was found have low reliability. Though the results here indicate that there were no gender differences either scale, more research exploring gender differences in relation to grit needs to be conducted.

### **Limitations and Future Research**

The major contribution of this research is that Duckworth’s Grit Scale may need to be further developed. In this study, the original grit scale had an unacceptably low level of reliability (.59). Further analysis revealed that eliminating six of the original 12 items increased the internal consistency to a more acceptable .82. Upon closer inspection, it was discovered that the six items retained from the original grit scale were all positively worded, and the other six discarded items were all reverse scored. It may be that the absence of grit is not necessarily the opposite of grit. An example of a reverse scored scale item is, “I often set a goal but later choose to pursue a different one.” It may be that the reverse coded items of the grit scale do not actually reflect the opposite of grit. Rather than making a statement about often an individual chooses to pursue different goals, it may be more accurate to include an item that is scored normally, while stating “I often set goals and *rarely* later choose to pursue a different one.”

As a general statement, setbacks can be discouraging for anyone. In terms of grit, however, the difference is whether that setback hinders or motivates a person. Whereas people

who score low on grit would most likely give up, those who score higher on grit could still experience the negative emotions that come with a setback, but keep pushing forward. This implies that there may be a factor regarding timing and how long a negative feeling lasts after a setback. Those who score high on grit would still experience the negative effects of a setback, but would not let that discourage them for very long. Those who are in long-term pursuits can see past one setback and look forward to growing, learning, and continuing towards their goals. Ultimately, then, future researchers should examine each of the grit items to ensure that they are gauging the reactions to situations as opposed to the mere presence of situations in order to improve the measurement of grit.

## **Conclusion**

Research has shown that certain personality traits, such as conscientiousness may be linked to success in the workplace (Barrick & Mount, 1991). Other variables, such as workaholism (Spence & Robbins, 1992) and work-family conflict (Eby et al., 2005) have also been linked with lower organizational performance. However, little research has been conducted regarding grit (Duckworth et al., 2007) in relation to workplace issues, and how they may influence the previously mentioned concepts. Results of the current study provide unique insights not only to the construct of grit itself, but also how it related to both workaholism and work-family conflict.

In this study, the reliability for the original Grit Scale was disappointingly low. After conducting an analysis and eliminating items from the scale that decreased the reliability, we notice that only positively-worded items remained. Thus, the “Positive Grit Scale” was created. Both the original measure of grit and the newly created “Positive Grit” measures were used to test each hypothesis. Both the original grit measure and the “Positive Grit” measures were found

to correlate with workaholism as well as with work drive. However, “Positive Grit” proved to be a better predictor of workaholism than the original grit scale. These results suggest that “Positive Grit” may be a promising new approach to measuring the grit construct while also highlighting several issues regarding Duckworth’s original Grit Scale, suggesting new avenues for future research on the grit construct.

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## Appendix A

## Grit Scale

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

## Appendix B

## The Workaholism Battery

Spence, J., & Robbins, A. (1992). Workaholism: Definition, Measurement, and Preliminary Results. *Journal of Personality Assessment*, 58(1), 160-178.

## Appendix C

## Satisfaction with Work-Family Balance Scale

Valcour, Monique. (2007). Work-based resources as moderators of the relationship between work hours and satisfaction with work-family balance. *Journal of Applied Psychology*, Vol 92(6), 1512-1523. doi: 10.1037/0021-9010.92.6.1512

## Appendix D

## Demographic Questionnaire

- Please identify your current relationship status:
  - Single, never married
  - Married
  - Separated
  - Divorced
  - Widowed
- Do you have any children?
  - Yes
  - No
- Age
  - 18-24
  - 25-34
  - 35-44
  - 45-54
  - 55-64
  - > 65
- Race/Ethnicity
  - African-American
  - Asian
  - Caucasian
  - Hawaiian or Pacific Islander
  - Hispanic
  - Native American or Alaska Native
  - Biracial or Multiracial
  - I do not wish to disclose
  - Self-Identification \_\_\_\_\_
- Gender identification
  - Male
  - Female
  - Non binary
  - I do not wish to disclose
  - Self-Identification \_\_\_\_\_
- Occupation
  - Professional/Educational
  - Management/Business/Financial
  - Services
  - Sales
  - Administrative Support
  - Production
  - Transportation

- Construction/Extraction
  - Maintenance/Repair
  - Farming/Forestry
  - Other
- Please enter your MTurk Worker ID \_\_\_\_\_

Appendix E  
IRB Approval Letter

April 24, 2017



Re: Protocol #16-098, *Grit: The Moderator between Workaholism and Work-Family Conflict*

Dear Ms. LaCava:

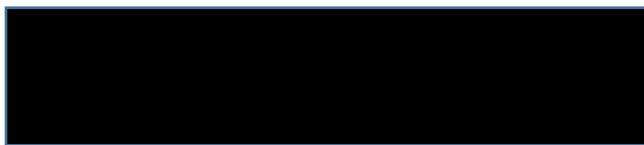
The consent (and probably the recruitment interface) still say participants have to be married. If you decide to alter the language in those materials to match your intent with the demographics, you should send updated copies to our office.

The IRB has reviewed the materials regarding your study, referenced above, and has determined that it meets the criteria for the Exempt from Review category under Federal Regulation 45CFR46. Your protocol is approved as exempt research, and therefore requires no further oversight by the IRB. We appreciate your thorough treatment of the issues raised and your timely response.

If you wish to modify your study, including the addition of data collection sites, it will be necessary to obtain IRB approval prior to implementing the modification. If any adverse events occur, please notify the IRB immediately.

Please contact our office if you have any questions. We wish you success with your project!

Sincerely,



Morell E. Mullins, Jr., Ph.D.  
Chair, Institutional Review Board  
Xavier University



## Appendix F

## MTurk Interface

Title: Psychology Survey – MUST PASS PRESCREEN TO TAKE

1. This survey is about personality in relation to work attitudes. It consists of 41 survey questions, four demographic questions, and two prescreen questions. **ONLY THOSE WHO CLEAR THE PRESCREEN QUESTIONS WILL CONTINUE TO THE SURVEY AND BE COMPENSATED.** The survey should take no more than 10 minutes to complete. Please click the following link in order to access the survey. At the end of the survey, you will receive a unique completion code to paste into the box below. Make sure to leave this window open as you complete the survey. You can only complete this HIT once.

[Survey Link will be included here]

2. When you are finished with the survey, you will receive a completion code to paste into the box below to receive credit for taking the survey. Please enter your completion code **HERE**:

[Box for completion code will be included here]

3. **AFTER** you complete the survey and **AFTER** you have pasted your unique completion code above, click the “Submit” button below.

## Appendix G

## Informed Consent Form

You are being asked to participate in a research project conducted by Alyssa LaCava, masters' candidate at Xavier University. The purpose of this study is to investigate personality in relation to work attitudes.

In this study, you will be asked to read 41 survey questions and to respond as honestly as possible. You will also be asked to complete four demographic items. The total time to complete this survey is approximately 10 minutes.

There are no known risks associated with this study. Participation in this study is entirely voluntary. Refusal to participate in this study will have no effect on any future services you may be entitled to from Xavier University. You are free to withdraw from the study at any time without penalty. You will be paid \$0.40 for participating in this study. However, please note that if you do not complete all of the required survey items or if you do not pass the quality check items, you will not be eligible for compensation. You will be given a unique completion code at the end of the study, which you must enter in the MTurk interface in order to get compensated. You have to be at least 18 years old to participate in this study, and you must be located in the United States. Failure to comply with the above requirements will result in no compensation.

The survey does not ask for your name; therefore, your responses will remain anonymous. However, the study does ask for your Worker ID in case there are issues with the assignment of your unique confidential code; doing so will help ensure you will be compensated for participating in the study. Prior to conducting any analyses, your Worker ID will be removed and all data analyses will be conducted at the group level. Finally, only the researcher conducting this study and thesis advisor will have access to your responses.

If you have any questions at any time during the study, you may contact the principle investigator, Alyssa LaCava, at [lacavaa@xavier.edu](mailto:lacavaa@xavier.edu), or thesis chair Mark Nagy at [nagym@xavier.edu](mailto:nagym@xavier.edu). Questions about your rights as a research subject should be directed to Xavier University's Institutional Review Board at 513-745-2870 or [irb@xavier.edu](mailto:irb@xavier.edu).

By clicking "Next" you agree to the following statement: I have been given information about this research study and its risks and benefits. I freely give my consent to participate in this research project.