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IMPOSTER PHENOMENON: DISTINCT CONSTRUCT OR ACHIEVEMENT-RELATED AFFECTIVE EXPERIENCE?

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Abstract

Imposter Phenomenon (IP), also known as Imposter Syndrome, is an internal experience that has been observed to occur in high achieving individuals. These individuals do not believe their achievements are due to their own abilities or hard-work: They credit external sources such as luck, errors in admissions or grading, or fooling others as the reason for any successes. IP has been observed in many populations including college professors, medical, dental, nursing and pharmacy students, librarians with graduate degrees, and other successful professionals. Previous research has found that individuals who experience IP may also experience fear of failure, fear of negative evaluation, and perfectionism. However, the literature does not appear to completely agree on whether IP is a distinct psychological phenomenon, an affective state, or a compilation of other constructs that is poorly labeled. The present study examined whether IP, fear of failure, fear of negative evaluation, and perfectionism are highly correlated with and predictive of one another, in high achieving individuals. Results indicate that high scores on measures of imposter phenomenon are associated with high scores on measures of fear of failure, fear of negative evaluation, and perfectionism; however, the relationship between variables is not significantly moderated by achievement.

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Chapter 1: Literature Review

Imposter phenomenon or imposter syndrome is an internal experience that has been observed to occur in high achieving individuals who believe their success and or achievements can only be credited to luck, errors in admissions or grading, or fooling others (Clance & Imes, 1978). According to Clance and Imes, who first described the concept, individuals with imposter phenomenon (IP) do not view themselves as intelligent or deserving of their accomplishments or accolades. When the "self-imposed standard of achievement" (p. 242) is not met, individuals with IP experience anxiety, lack of self-confidence, depression, and frustration (Clance & Imes, 1978).

Although first reported by individual women in a clinical setting, IP has since been examined and studied in a variety of populations. Initially Clance and Imes (1978) found IP to occur primarily in women; specifically, high achieving women who are characterized by various accomplishments such as high scores on standardized tests, holding advanced academic degrees, being respected professionals as evidenced by praise and professional recognition from colleagues and superiors, and students known for their academic achievements and scholastic honors. In the time since Clance and Imes (1978) first identified IP, researchers have examined whether IP occurs in specific populations such as college professors (Topping, 1983), medical, dental, nursing and pharmacy students (Henning, Ey, & Shaw, 1998), and librarians with graduate degrees (Clark,

Vardeman, & Barba, 2014), as well as more general populations such as successful professionals (Dingman, 1988). Although initial findings suggested that IP typically presented in females, results from subsequent research demonstrated that IP can occur just as frequently in men (Fried-Buchalter, 1992; Harvey, 1981; Langford & Clance, 1993; Topping & Kimmel, 1985; Clark et al., 2014; Cozzarelli & Major, 1990; Cowman & Ferrari, 2002; Kumar & Jagacinski, 2006; September, McCarrey, Baranowsky, Parent, & Schindler, 2001). IP has been found to be situational for many individuals and thus tends to show up when stress or new responsibilities are introduced, such as when starting a new job (Clance, 1985; Topping & Kimmel, 1985).

Langford and Clance (1993) suggested that individuals with IP want to be perceived as intelligent and are very much concerned with how others view their abilities. While these individuals may not have low self-esteem, per se, their sense of self is unstable and largely dependent on external validation from others. In line with this concern of negative evaluation, Flett, Madorsky, Hewitt, and Heisel (2002) found that individuals who experience IP tend to seek external validation and be sensitive to criticism. According to Kets De Vries (2005), IP is seen more frequently in fields that place importance on intellect such as academia and medical professions. Furthermore, individuals who are attracted to these and similar work environments tend to be more achievement oriented with perfectionist traits (Hutchins, 2015).

Controversies in the Imposter Phenomenon Literature

Although research supporting the experience of IP is substantial – having taken place in different countries, with various populations of students and professionals – several researchers have questioned whether IP is a distinct psychological phenomenon,

while others have argued that IP is a distinct construct but argue that it has been labeled poorly. The research indicates that the experience of IP does, in fact, occur in many people, and in many populations; however, whether it can be distinguished from similar affective states and constructs is less clear.

Some scholars have suggested that IP may simply be a function, or variation, of affective states such as anxiety or depression. For example, Cozzarelli and Major (1990) stated that IP may be more of an overall inclination to experience negative affect and that these individuals do not attribute their successes to ability and have higher negative reactions to failure. Furthermore, they found that self-esteem and affect after success was similar for individuals scoring high for IP, and for those that did not. As the authors pointed out, finding no difference between how imposters and nonimposters feel after success is "problematic for the conceptualization of the imposter construct" (p. 415). Specifically, the IP literature asserts that individuals who experience IP, as oppose to those who don't, won't experience satisfaction when they succeed, and that success increases negative emotions, including feeling more fraudulent. Cozzarelli and Major's (1990) findings directly contradict central tenets of IP. Henning and colleagues (1998) and McElwee and Yurak (2007) found that individuals who score high on measures of IP experience more negative affect, and that this negative affect is the source of what is deemed to be the experience of imposter feelings. McElwee and Yurak (2010) continued their research and asserted that IP is not a distinct disorder or phenomenon but an experience that is situation specific, and that it is not a stable personality trait. They further suggested that there is no data to support the idea that people who experience IP believe they have others fooled. In line with the other research mentioned (Cozzarelli &

Major, 1990), their findings state that IP is an affective experience that is aversive to the individual due to feelings of self-doubt and that it can occur within any individual in the right situation. Leary, Patton, Orlando, and Funk (2000) suggested that the characteristics we commonly consider to be central to IP are, in part, "interpersonal, self-presentational behaviors designed to minimize the implications of poor performance" (p. 726).

Although much research has focused on associations between IP and affective states, other lines of research have examined whether IP is composed of previously described constructs such as Fear of Failure. Fried-Buchalter (1992), for example, reported commonalities between IP, fear of success, and fear of failure. The results of her factor analysis indicated that fear of failure and IP have a large overlap, and both are associated with lack of self-confidence. The outcome of that study further suggested that perceptions regarding failure and success and their common features to IP hint at the possibility that constructs believed to be new, such as IP, may have actually been in existence and referred to by other terminology.

Kolligian and Sternberg (1991) proposed that IP as it had been described in the literature was a mis-labeled construct. They argued that the behaviors commonly referred to as imposter syndrome or imposter phenomenon could be more appropriately referred to using the term "perceived fraudulence." This distinction in terminology stems from their belief that the term perceived fraudulence describes a perception of self without suggesting the existence of a mental illness or specific personality disorder. Perceived fraudulence occurs when high-achieving individuals place the cause of their achievements or success on external sources. Depressive and anxious symptoms as well as high levels of self-consciousness are commonly occurring components in perceived

fraudulence. Self-consciousness stems from the individual's belief that others are more concerned and more aware of their abilities, achievements, and behaviors than is really the case. Based on the results of their own research, Kolligian and Sternberg (1991) proposed that perceived fraudulence manifests due to an interaction between "inauthentic ideation, depressive tendencies, self-criticism, social anxiety, high self-monitoring skills, and strong pressures to excel and achieve" (p. 323). Thus, they concluded that fraudulent self-perceptions may develop in an individual who is inclined to have a negative outlook and yet closely guards and monitors their own behaviors for fear of being negatively evaluated by others.

Psychological Consequences of Imposter Phenomenon

Despite uncertainty regarding the precise definition of IP, psychological difficulties such as anxiety, depression and negative affect have been shown to be related to the construct. Langford and Clance (1993) indicate that individuals who experience imposter feelings fear being "exposed as unworthy and incompetent" (p. 495) and believe this will occur when they are unable to uphold their achievements and success. These individuals frequently experience symptoms of worry, depression, and anxiety and do not believe their intelligence and abilities warrant the "successes they have earned" (p. 495). Researchers have identified many symptoms of psychological distress as being associated with IP including depression and depressive symptoms (Chrisman, Pieper, Clance, Holland, & Glickauf-Hughes, 1995; Clance & Imes, 1978; Henning et al., 1998; Langford & Clance, 1993; McGregor, Gee, & Posey, 2008) and anxiety (Cozzarelli & Major, 1990; Kolligian & Sternberg, 1991; Lester & Moderski, 1995; Ross, Stewart, Mugge, and Fultz, 2001; Topping, 1983; Topping & Kimmel, 1985). Other studies have

examined constructs such as low self-esteem (Sonnak & Towell, 2001), fear of failure and fear of success (Fried-Buchalter, 1992), and perfectionism (Thompson, Foreman, & Martin, 2000) and their connections to IP.

Negative consequences of IP manifest in a variety of populations.

Several scales have been developed to measure experiences of IP. In a study comparing the Clance Imposter Phenomenon Scale (CIPS; Clance, 1985) to the Perceived Fraudulence Scale (PFS; Kolligian & Sternberg, 1991), Chrisman and colleagues (1995) assessed affect, depressive symptoms, fear of negative evaluation, self-esteem, self-criticism, self-monitoring and imposter feelings in undergraduate students. They found experiencing IP was associated with experiencing depressive symptoms, self-criticism, negative thoughts and feelings, fear of negative evaluation, doubts about abilities, and low self-esteem. In college professors, research conducted by Topping (1983) demonstrated a strong positive correlation between IP and trait anxiety. Furthermore, Topping found that, when using the Harvey IP scale (Harvey, 1981), IP as a construct is distinguishable from self-esteem, but overlaps somewhat with self-monitoring behaviors. In a study that examined psychological distress, perfectionism, and imposter feelings in a sample of 477 medical, nursing, dental, and pharmacy students, it was found that feelings of being an imposter predicted current psychological distress more than other traits and demographics (Henning et al., 1998).

McGregor and colleagues (2008) hypothesized that depression and IP are associated with one another due to the common threads of negative thought patterns and self-doubt. Participants consisted of 186 students who completed the Clance IP scale (Clance & Imes, 1978) and the Beck Depression Inventory 2nd edition (BDI-II; Beck,

Steer & Brown, 1996). Results demonstrated a positive correlation between IP scores and BDI-II scores ($r = .408$, $p < .01$). They inferred that symptoms associated with imposter phenomenon and symptoms of mild depressive disorder may be comparable, though not causal in one direction either way. Individuals who experience feelings of being an imposter may not achieve their full potential due to symptoms associated with depression. Furthermore, those suffering from IP "may not realize that their thoughts may possibly mask symptoms of depression."

Cozzarelli and Major (1990) reported that the individuals who experience IP have a higher negative reaction to failure and report higher levels of anxiety than those who do not experience IP. They also found that ratings of "defensive pessimism" (a defensive strategy of disregarding previous successes and lowering expectancies when faced with a new challenge) prior to taking a test, accounted for the majority of the differences between those who identify experiencing IP and those who do not.

Fear of Success and Failure

Among the many facets of the experience of IP, concern regarding evaluations by others appears to be a common thread. Clance (1985) suggested that the IP is composed of several characteristics including fear of failure, denial of competence, and fear and guilt about success. While many of these characteristics can certainly be internally motivated, they frequently exist due to the interaction between an individual's performance and their concern over other's evaluation of that performance. Individuals with IP react to failures and mistakes in a similar manner as the performance goal-oriented individuals described by Dweck (1986) who place blame on themselves for their failures (Langford & Clance, 1993). According to Dweck (1986), individuals can be

placed into two broad categories regarding how they approach situations. Individuals with learning goals strive to master gaining new skills to fuel achievement: they want to increase their competency. In contrast, individuals with performance goals (performance goal-oriented individuals) seek approval and validation, and avoid negative appraisals from peers, teachers, or employers. In other words, individuals who are performance goal-oriented are most concerned with how their performance is judged: they want to look competent and intelligent which leads to avoidance of tasks due to fear of failure or negative evaluation (Dweck & Leggett, 1988). Langford (1990) presented evidence that IP shares characteristics of performance goal pattern. Similarly, Kumar and Jagacinski (2006) found that IP and performance goals are closely related. Furthermore, Langford (1990) suggested that many individuals who have IP view intelligence as fixed and found a positive correlation between helpless reactions of performance goal-oriented individuals and IP feelings. For these individuals, situations in which evaluation or judgment by others is likely are viewed as aversive, leading to decreased motivation (Shim & Ryan, 2005). Langford and Clance (1993) suggested that individuals with IP want to be perceived as intelligent and are very much concerned with how others view their abilities. Kumar and Jagacinski (2006) found an association between IP and lower confidence in intelligence. The effort required due to this worry about other people's perceptions causes anxiety. Both Clance (1985) and Cozzarelli and Major (1990) identified these individuals as having intense fear of failure.

Although the research regarding fear of success and fear of failure is sizeable, only a small portion of relevant findings are discussed here in attempt to highlight the connection to behaviors and thoughts described in individuals who experience IP. Fear of

failure may manifest as fear of being embarrassed, fear of diminishing "one's self-estimate" (p. 77), fear due to uncertainty about the future, fear of valued friends and peers losing interest in oneself, and fear of causing distress or disturbing valued friends and peers (Conroy, Willow, & Metzler, 2002). The type of concern that motivates the fear of failure is likely to be situational and dependent on context (Sagar & Stoeber, 2009). Fear of success is frequently discussed in conjunction with fear of failure, although there is not full agreement on whether fear of success and fear of failure are two separate concepts or opposite ends of the same spectrum. According to Horner (1972), some individuals fear success because that success may lead to negative consequences; therefore, the experience of fear of success is motivated by a desire to avoid success (Atkinson & Feather, 1976) due to potential negative outcomes. Piedmont (1995) found that fear of failure and fear of success are both outcomes, with different presentations, of psychological distress and are not two distinct constructs. Previous research (Ross et al., 2001) has shown that IP is positively related to fear of failure. Fried-Buchalter (1992) reported that imposter phenomenon, fear of success, and fear of failure share the common theme of lack of self-confidence. However, Kumar and Jagacinski (2006) reported that IP is based on motivation stemming from fear of failure. Whether fear of success and fear of failure are distinct constructs or different presentations along the same spectrum is unimportant for the proposed study, as they both manifest due to worry about outcomes, especially in regard to being concerned about evaluations by others.

Fear of Negative Evaluation

Another construct mentioned in IP literature is fear of negative evaluation. According to Watson & Friend (1969), fear of negative evaluation occurs due to worry

about evaluations by others, believing that these evaluations will be negative, and consequently experiencing distress regarding these expected negative evaluations. Chrisman and colleagues (1995) suggested that social anxiety and fear of negative evaluation are the same basic construct and used the Brief Fear of Negative Evaluation Scale (FNES; Leary, 1983) to examine social anxiety. However, there appears to be some disagreement in the literature regarding whether fear of negative evaluation and social anxiety are the same construct or two distinct constructs that are closely related. Some researchers suggest that apprehension associated with being negatively evaluated by others is fear of negative evaluation whereas social anxiety pertains more to the affective reaction the individual experiences in response to that fear (Weeks et al., 2005). Furthermore, fear of negative evaluation predicts anxious behavior that is associated with being evaluated by others, such as in social situations (Friend & Gilbert, 1973; Smith & Sarason, 1975; Watson & Friend, 1969). In fact, Wells and colleagues (1995) reported that individuals who experience anxiety regarding social situations and potential evaluations by others demonstrate many behaviors that have the purpose of avoiding possible negative evaluation. Not surprisingly, the actual evaluations are far less negative than expected. It has been reported that socially anxious individuals rate their own performance or behavior lower than do evaluators (Weeks et al., 2005). Furthermore, people experiencing IP usually react in two different ways when they face tasks that imply them being evaluated: either they overcompensate their fears by excessive preparation and extreme effort, or engage in self-sabotage behaviors, like procrastination, followed by frantic last-minute work (Clance et al., 1995). It has been found that higher IP scores are associated with increased levels of motivation to avoid negative evaluations

(Leary et al., 2000). Additionally, their findings indicated that individuals with higher IP scores believed that evaluations by others were no more favorable than their own self-evaluations.

Perfectionism

The need to be the best is another potential characteristic of IP according to Clance (1985) and is indicative of perfectionism. This drive to be the best stems from self-imposed high standards, the propensity to negatively view one's own performance, and worries regarding the evaluations by others (Flett & Hewitt, 2002; Frost, Marten, Lahart, & Rosenblate, 1990; Stoeber & Childs, 2010). IP and perfectionism appear to be positively correlated (Hewitt, 2003; Ferrari & Thompson, 2006; Dudau, 2014). In Dudau's (2014) research, IP was linked to perfectionism regarding self-evaluations such as concern over mistakes, need for approval, and rumination. Additionally, IP is linked with self-presentation strategies of perfectionism including perfectionistic self-promotion, nondisplay of imperfection, and nondisclosure of imperfection (Hewitt et al., 2003). These authors suggested that these strategies manifest themselves in a reluctance, on the part of the individual, to avoid challenging or risky activities "that may invalidate their facades" (Hewitt et al., 2003, p. 1321). Ferrari and Thompson (2006) also found IP to be associated with perfectionistic self-presentation strategies as well as perfectionistic cognitions. Henning and colleagues (1998) reported results indicating an association between perfectionism, IP and psychological distress with higher levels of perfectionism being linked to a greater risk for psychological distress. According to Henning's (1998) study, higher scores on IP scales are linked to perfectionistic standards, and the more socially prescribed perfectionism is held by an individual, the more psychological distress

they experience. Kets de Vries (2005) asserted that perfectionistic individuals set unrealistically high goals, and when those goals can't be reached, they experience self-defeating thoughts. He further stated that perfectionism might be a factor that causes, increases and/or maintains feelings of being an imposter.

Summary

The literature has demonstrated support for the constructs of imposter phenomenon, fear of failure, fear of success, fear of negative evaluation, and perfectionism; however, it has also illustrated that there are several common themes shared between these concepts. The distinction between each of these concepts is difficult to detect and much overlap appears to exist between them. Commonalities shared by these constructs were revealed by Chrisman and colleagues (1995) who found significant correlations between measures of IP, depression, and social anxiety. Sagar and Stoeber (2009) exposed the overlap between perfectionism, fear of negative evaluation, and fear of failure when they stated that fear of failure is linked to a perceived pressure to be perfect and an apprehension about making mistakes. Kumar and Jagacinski (2006) asserted that fear of failure and motivations to avoid failure are fundamental components to IP. Furthermore, individuals with IP tend to seek external validation, have stronger reactions to evaluations and criticisms, worry about performance and outcomes that they view as less than perfect, and have excessive concern over mistakes (Dudau, 2014). In fact, many features that are considered to be central to IP were found to be behaviors of self-presentation motivated by avoidance and fearfulness of negative evaluations by others (Leary et al., 2000). Being concerned about the evaluations of others is a part of

perfectionism, is consistently associated with fear of failure, and is cause for fear of negative evaluation (Sagar & Stoeber, 2009).

Given that these constructs appear to have so much in common, it may be instructive to view them as pieces as opposed to their broader constructs. Examining scores on measures of imposter phenomenon, perfectionism, fear of failure, and fear of negative evaluation will allow each concept to be compared against one another. Findings may suggest whether these concepts have discrete differences in their components or if they have been erroneously labeled as distinct concepts, all with the same components. Furthermore, this is the first study to compare all four of these constructs, and the first to assess them in a mixed population of professionals and students.

Hypothesis

Imposter Phenomenon (IP) may not be best conceived as a distinct phenomenon or syndrome, although it appears to be an affective state experienced by many high achieving individuals. IP, as it is currently conceptualized, encompasses several components that stem from a strong belief, by the individual, that successes have not been earned and are not deserved. The individual is, in fact, high achieving, yet attributes success to external sources such as luck. Throughout the literature, IP has been associated with many achievement-related experiences, including fear of failure, fear of negative evaluation, and perfectionism. Given the overlap in these constructs, it is not clear whether IP is actually a distinct construct or a variation of these other constructs.

For the present study, it was hypothesized that imposter phenomenon, fear of failure, fear of negative evaluation, and perfectionism would be highly correlated with one another. Specifically, it was expected that high scores on a measure of IP would

predict high scores on measures of fear of failure, fear of negative evaluation, and perfectionism. In line with previous research, it was expected that high scores on a measure of IP would only be seen in high-achieving individuals.

Chapter II: Methodology

Participants

A sample of 142 participants took part in this study. The sample ultimately consisted of 41 students, 40 of which had a GPA of 3.5 or above, 73 individuals reported having a master's degree or higher, 46 individuals identified as being a professional requiring an advanced degree, 11 identified as being a professional requiring a college degree, 33 identified as a veterinarian/veterinarian officer, 8 individuals identified as a manager, one individual identified as a top executive, and one individual identified as a small business owner. The final sample was determined to consist of 121 high achieving individuals and 21 low achieving individuals.

Participants were recruited through email distribution, online networking sites, and social media. A power analysis indicated that a minimum of 119 participants was necessary to detect a partial R^2 of .1 with 95% power. Participants were required to sign up for the study, and, upon completion of the registration, they received a link to access and complete the study online.

Materials

Participants completed an online survey consisting of demographic information, the Clance IP scale (CIPS; Clance and Imes, 1978), the Performance Failure Appraisal Inventory (PFAI; Conroy, 2001b; Conroy, Metzler, & Hofer, 2003; Conroy, Willow, & Metzler, 2002), the Brief Fear of Negative Evaluation-II scale (BFNE-II; Carleton, Collimore, & Asmundson, 2007; Carleton, McCreary, Norton, & Asmundson, 2006), the

Perfectionism Cognitions Inventory (PCI; Flett, Hewitt, Blankstein, & Gray, 1998), and the Perfectionistic Self-Presentation Scale (PSPS; Hewitt et al., 2003). Participants completed one of two versions of demographic questions: a student version or a professional version. There is limited information in the literature regarding what specifically defines a high or low achieving individual outside of academic settings. Due to this apparent lack of an operational definition, achievement is based on previously used constructs such as profession, employment position, promotions, GPA, degree held, awards, and accolades. Previous research asserted that professionals holding advanced degrees or who were "respected professionals in their fields" (Clance & Imes, 1978, p. 1) are considered to be high-achieving individuals. If a respondent indicated they do not hold a graduate degree of some kind, and their occupation is not explicitly listed as high-achieving in the IP literature, their occupational achievement was assessed using the National Opinion Research Center's (NORC) prestige scores. The NORC prestige scores rank the majority of the titles listed in the Standard Occupational Classification (SOC) that is used by the Bureau of Labor Statistics.

Participants identifying as students answered questions regarding academic and academic-related achievements, college entrance exam scores, grade point average (GPA), extracurricular activities, and current academic major. In students, self-reported GPA is used as a control for ability. Frucot and Cook (1994) reported a strong correspondence between actual and self-reported GPA for college students. Participants identifying as professionals (non-students) were asked questions about occupational achievements and accolades as well as job title, if they supervise other employees, and their promotion and career advancement history.

Measures

Participants completed a survey consisting of several self-report measures designed to assess imposter fears, fear of failure, fear of negative evaluation, and perfectionism.

Imposter phenomenon. Imposter fears are assessed using the Clance Imposter Phenomenon Scale (CIPS; Clance, 1985). The CIPS consists of 20 self-report items that utilize a 5-point Likert scale for responses. Total scores on the CIPS range from 20 to 100, with increasing scores being representative of increasing severity. The CIPS assesses for the presence of thoughts related to IP including fear of evaluation, fear of being unable to repeat a success, and feeling less capable than peers. Items include "I'm afraid people important to me may find out that I'm not as capable as they think I am", "I often compare my ability to those around me and think they may be more intelligent than I am", and "Sometimes I'm afraid others will discover how much knowledge or ability I really lack". Research has found high levels of internal consistency for the CIPS with reported alpha values ranging from .84 (Prince, 1989) to .96 (Holmes et al., 1993). This study found that the reliability coefficient for the CIPS was high at .94.

Fear of failure. Fear of failure is assessed using the Performance Failure Appraisal Inventory (PFAI; Conroy, 2001; Conroy, Metzler, & Hofer, 2003; Conroy, Willow, & Metzler, 2002) which consists of 25 items intended to measure beliefs associated with consequences of failure. According to Conroy and colleagues (2002), the PFAI was developed based on the Lazarus' (1991) cognitive-motivational-relational theory of emotion to examine the strength to which an individual believes that failure is related to unpleasant or negative outcomes. The PFAI uses a 5-point Likert scale with

scores ranging from -2 to +2. As suggested by Sagar and Jowett (2010), this study will use a modified scale with a range of 0 (“do not believe it at all” to 4 (“believe it 100% of the time”). All of the items begin with one of two statements: “when I am failing” or “when I am not succeeding” and fall into five subscales: fear of experiencing shame and embarrassment, fear of devaluing one’s self-estimate, fear of having an uncertain future, fear of important others losing interest, and fear of upsetting important others. Examples of questions on the PFAI include: When I am failing, it is embarrassing if others are there to see it; When I am failing, I hate the fact that I am not in control of the outcome; When I am not succeeding, people are less interested in me; And, when I am failing, important others are disappointed. The coefficient alpha for the five-subscale average is .82 and the alpha for all 25 items is .91 (Conroy et al., 2002). According to Conroy and Metzler (2003), estimates of internal consistency range from .69 to .90. The reliability coefficient in this study was high at .96.

Fear of negative evaluation. Fear of negative evaluation is assessed using the Brief Fear of Negative Evaluation-II scale (BFNE-II; Carleton, Collimore, & Asmundson, 2007; Carleton, McCreary, Norton, & Asmundson, 2006). The BFNE-II is a 12-item measure developed from the Brief Fear of Negative Evaluation scale (BFNE; Leary, 1983) and has been found to correlate highly with the original measure (Carleton et al., 2007; Carleton et al., 2006). The measure uses a 5-point Likert scale ranging from 0 (not at all characteristic of me) to 4 (extremely characteristic of me). The questions include “I am frequently afraid of other people noticing my shortcomings”, “I am afraid that others will not approve of me”, and “I am usually worried about what kind of impression I make”. Internal consistency of the BFNE-II is excellent ($\alpha = .95$) (Carleton

et al., 2007; Carleton et al., 2006). This study found the reliability coefficient to be high at .97.

Perfectionism. Perfectionism is measured using both the Perfectionism Cognitions Inventory (PCI; Flett, Hewitt, Blankstein, & Gray, 1998) and the Perfectionistic Self-Presentation Scale (PSPS; Hewitt et al., 2003). The PCI examines individual differences in the frequency of perfectionistic cognitions. It consists of 25-items and assesses automatic, ruminative thoughts about avoiding imperfection in a number of social settings. It has a high internal consistency (alpha = .95). In this study, reliability was high ($\alpha = .94$). The Perfectionistic Self-Presentation Scale (PSPS; Hewitt et al., 2003) is a 27-item measure designed to measure the tendency to present oneself as perfect. It is composed of three factor analytically derived subscales: Perfectionistic Self-Promotion, Nondisplay of Imperfection, and Nondisclosure of Imperfection. Internal consistency for the subscales ranges from .78 to .86. The reliability coefficient found in this study for the PSPS was .95.

Analysis Plan

A series of correlations and moderated regression analyses were conducted to test the hypothesis that imposter phenomenon, fear of failure, fear of negative evaluation, and perfectionism are highly correlated with one another, in high achieving individuals. Specifically, high scores on measures of imposter phenomenon predict high scores on measures of fear of failure, fear of negative evaluation, and perfectionism. These relationships were predicted to only occur in participants classified as high achieving. Achievement was determined by GPA for current students and by education and occupation, including position held, for those not currently in school. Lastly, an

exploratory confirmatory factor analysis (CFA) was conducted to further investigate the association between the constructs.

Chapter III: Results

Analyses were conducted to test the hypothesis that imposter phenomenon, fear of failure, fear of negative evaluation, and perfectionism are similar constructs that are highly correlated with and predictive of one another. A visual inspection of the data revealed no problematic deviations from normality. T-test results indicated that, on average, participants in the high-achieving category had significantly higher scores on the CIPS (M = 65.27, SD 16.23) than participants in the low achieving category (M = 52.76, SD = 15.77), $t(141.13) = 44.6$, $p < .001$. Consistent with the predictions of this study, BFNE, PCI, PSP, PFAI, and CIPS were all significantly correlated with each other. Furthermore, the correlations were all large in magnitude based on Cohen's (1988) convention. Reliability coefficients of all five measures were high; .94 and greater. Correlation coefficients, descriptive statistics, and reliability scores are presented in Table 1.

Table 1

Correlation Coefficients, Descriptive Statistics, and Reliability Scores for Main Study Variables

	BFNE	PCI	PSP	PFAI	CIPS	Min	Max	Mean	SD	α
BFNE	1					12	60	35.49	12.88	.97
PCI	.51	1				2	85	46.62	18.91	.94
PSP	.76	.63	1			33	181	107.2	29.46	.95
PFAI	.61	.59	.69	1		27	117	69.43	21.98	.96
CIPS	.62	.59	.63	.72	1	26	98	63.42	16.71	.94

Note: All relationships are significant ($p < .001$)

A series of moderated regression analyses were performed to test the hypothesis that high scores on measures of imposter phenomenon predict high scores on measures of fear of failure, fear of negative evaluation, and perfectionism. The analyses examined whether the relationship between these variables is moderated by achievement. Results of the moderated regressions are presented in Table 2. Scores on measures of the variables were centered prior to entering it into the analysis and the interaction term was based on that centered score. The results indicated that the relationship between variables is not significantly moderated by achievement. Specifically, the main effect of Brief Fear of Negative Evaluation (BFNE), Perfectionistic Cognitions Inventory (PCI), Perfectionistic Self-Presentation (PSP), and Performance Failure Appraisal Inventory (PFAI), when predicted by CIPS, is significant; however, the introduction of the interaction term of

achievement was not significant. Contrary to predictions, the relationship between high IP scores and high scores on the outcome variables was greater in low achieving people than high achieving people; however, this difference was not significant. These results can be visually observed in Figure 1.

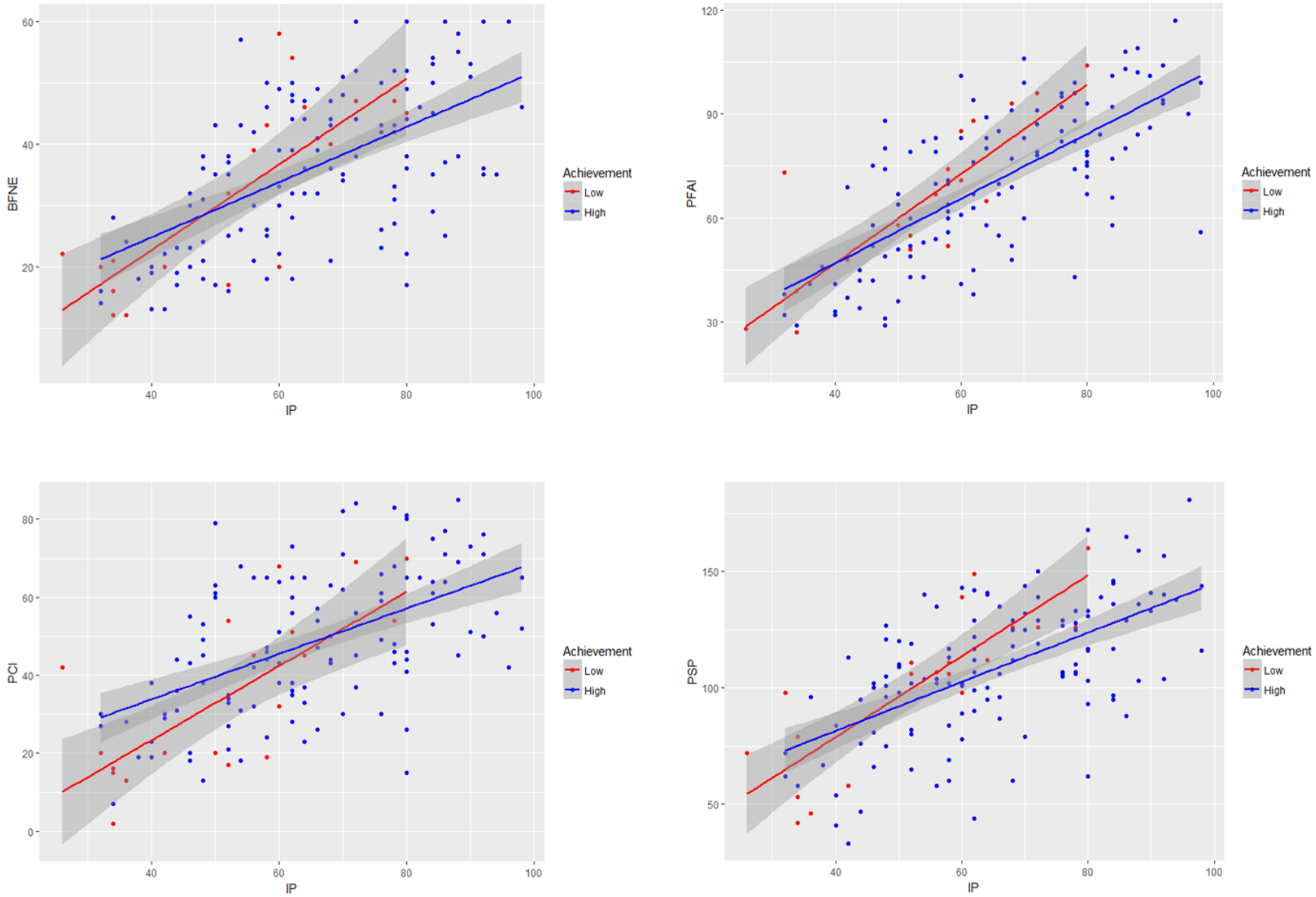
Table 2

Results of Moderated Regression Analyses

	Regression Coefficient	SE	*t*	P-value	CI	R^2
BFNE						.39
CIPS	0.48	0.05	9.15	< .001		
Achievement	-1.52	2.49	-0.61	.54		
Interaction	-0.25	0.15	-1.61	.11	0.84, -8.87	
PCI						.36
CIPS	0.63	0.08	7.94	< .001		
Achievement	5.10	3.74	1.36	.18		
Interaction	-0.36	0.23	-1.58	-11	0.73, -7.15	
PSP						.41
CIPS	1.15	0.12	9.75	< .001		
Achievement	-7.21	5.57	-1.30	.20		
Interaction	-0.69	0.35	-1.98	.05	0.81, 174.07	
PFAI						.53
CIPS	0.98	0.08	12.47	< .001		
Achievement	-5.14	3.70	-1.39	.17		
Interaction	0.36	0.23	-1.55	.12	1.19, -10.34	

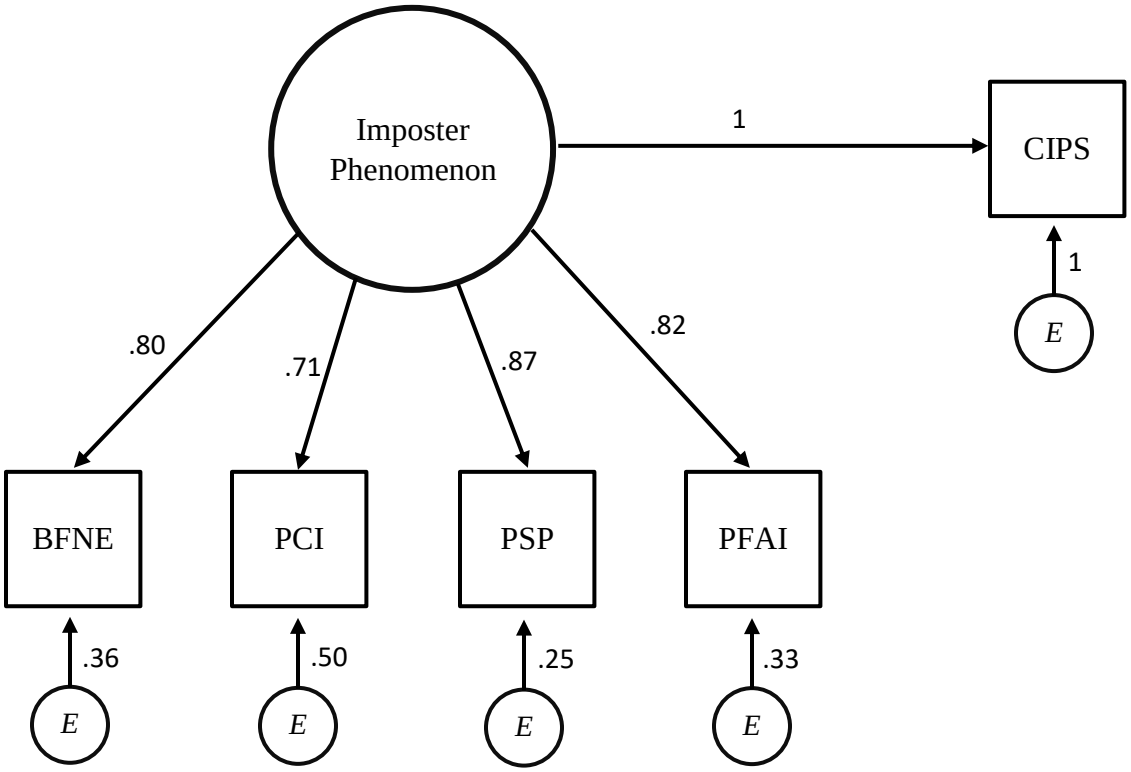
Note: All relationships are significant ($p < .001$)

Figure 1



To further investigate the hypothesis that imposter phenomenon is a combination of fear of negative evaluation, fear of failure, and perfectionism, a confirmatory factor analysis (CFA) was conducted. IP was modeled as a latent factor predicting these variables and CIPS. The path between IP and CIPS was fixed to 1. The model and results are depicted in Figure 2. While all paths were significant ($p < .001$), model fit indices were mixed: both Standardized Root Mean Square Residual (SRMR) and Comparative Fit Index (CFI) values indicated good fit (.03 and .95, respectively), the Root Mean Square Error of Approximation indicated poor fit, RMSEA = .17.

Figure 2



Note: All path coefficients are significant ($p < .001$).

Note: $\chi^2 = 432.07$, $p < .001$, RMSEA = .17 [.11, .24], CFI = .95, SRMR = .03.

Chapter IV: Discussion

A review of the literature indicates that there is support for the experience of imposter phenomenon, as well as for experiences of fear of failure, fear of negative evaluation, and perfectionism. However, the literature reveals common themes between these constructs when they are compared to each other. Behaviors of self-presentation have been associated with imposter phenomenon and are said to be motivated by avoidance and fear of negative evaluations (Leary et al., 2000). Perfectionism, fear of negative evaluation, and fear of failure have been found to be associated with one another (Sagar & Stoeber, 2009). The tendency to seek external validation, have excessive concern over mistakes, and have relatively stronger reactions to criticism have been linked to imposter phenomenon (Dudau, 2014), fear of failure (Kumar & Jagacinski, 2006), fear of negative evaluation, and perfectionism (Sagar & Stoeber, 2009). The commonalities between these achievement-related experiences suggested that imposter phenomenon may not be best conceived as a distinct concept as it may be a variation of these other constructs. In the course of this study, participants completed measures of imposter phenomenon, fear of failure, fear of negative evaluation, and perfectionism.

Consistent with the predictions of this study, scores on measures of imposter phenomenon, fear of failure, fear of negative evaluation, and perfectionism were all significantly correlated with each other. These findings are in line with previous research that showed a positive association between IP and fear of failure (Bernard, Dollinger, & Ramaniah, 2002; Fried-Buchalter, 1997; Neureiter & Traut-Mattausch, 2016; Thompson,

Foreman, & Martin, 2000), fear of negative evaluation (Chrisman et al., 1995; Thompson et al., 2000; Ross et al., 2001), and perfectionism (Clance, 1985; Thompson et al., 1998; Cusak, Hughes, & Nuhu, 2013). Many of the studies simply cite a link between constructs; however, Brown and Ramsey (2015) stated that the relationship between IP and fear of failure is directional in that fear of failure leads to feelings of being an imposter. The design of this study does not allow for postulating on cause and effect; however, the correlations between constructs support the idea that IP may be a variation of fear of failure, fear of negative evaluation, and/or perfectionism, and that each measure is assessing the same thing.

The results of the moderated regression analyses showed that CIPS significantly predicts fear of failure, fear of negative evaluation, and perfectionism. With the introduction of the interaction term of achievement, the relationship between the constructs is no longer significant: The hypothesized relationship between IP and the other constructs is not moderated by achievement. Interestingly, the visual pattern of results for each regression was similar in that the relationship between IP and each outcome variable became greater in low achieving people than in high achieving individuals as scores on each measure increased. However, these findings were not significant. A large majority of the current sample was identified as high achieving with only twenty-one individuals being identified as low achieving. It is possible that the make-up of this sample impacted the pattern of results regarding the interaction of achievement.

Of the 21 participants that were identified as low achieving, six participants had scores on the CIPS higher than 62. Although a cutoff was not used in this study, previous

research has suggested that a score of 62 is adequate to differentiate between those who experience symptoms of IP and those who do not (Holmes et al., 1993). The low achieving individuals scoring higher than 62 on the CIPS self-identified the following professions: Receptionist/bookkeeper; Warehouse employee; Seamstress; Admin assistant; and cashier. It is possible that these results indicate that individuals perceived as being low achieving may experience feelings of IP and that these feelings may have stunted their achievement. Alternatively, their profession may be chosen based on avoiding aversive experiences such as feeling like an imposter. However, these findings suggest that further investigation is required regarding individuals not typically perceived as being high-achieving experiencing imposter phenomenon. By very definition, imposter phenomenon occurs only in high achieving individuals. Specifically, the description of the construct requires that the individual experience a private disagreement between their perception of themselves and how others view them (Harvey, 1981). It is possible that these six individuals do experience dissonance between their public image and their own private feelings; however, it is also possible that they were labeled incorrectly as low-achievers. Another possibility is that because the CIPS does not appear, based on its content, to be written specifically for high-achieving individuals, those low-achieving individuals endorsed items in an unexpected manner.

Fear of failure can be a highly motivating experience for some individuals; however, Sadd (1978) indicated that those who score high on measures of fear of failure may be limited by a fear of expressing their wants and needs or standing out from the group. Furthermore, previous research has shown that maladaptive behaviors such as self-handicapping are highly associated with fear of failure, especially when the

individual does not have strong achievement-related goals (De Castella, Byrne, & Covington, 2013). Other research found that as fear of failure scores increased in male undergraduates, the prestige of their intended occupations decreased, and they became more likely to settle for occupations previously thought to be less satisfying (Burnstein, 1963).

Fear of negative evaluation has also been found to be associated with achievement. In 2015, a study of librarians indicated that fear of negative evaluation negatively influenced career progression for a large number of the individuals (Crawford, Leuzinger, Brannon, & Hamner, 2015). At the same time, other individuals reported that their fear of negative evaluations pushed them to work harder leading to increased achievement. Similar results have been found in relation to academic accomplishments in that academic risk taking is significantly associated with fear of negative evaluation (Cetin, Ilhan, & Yilmaz, 2014). It has also been suggested that fear of negative evaluation in individuals with imposter phenomenon motivates them to increase achievement behavior to fulfill the standards of others (Thompson et al., 2000).

Perfectionism may be viewed as a positive or negative trait depending on how it impacts the individual. In fact, a large body of research makes a distinction between adaptive and maladaptive perfectionism (Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Terry-Short, Owens, Slade, & Dewey, 1995; Enns, Cox, Sareen, & Freeman, 2001). Adaptive perfectionism may be seen as striving for personal achievement versus the critical self-evaluation and evaluative concern that comprises maladaptive perfectionism (DiBartolo, Li, & Frost, 2008). Although adaptive perfectionism is typically associated with higher academic success (Stoeber & Otto, 2006), some research

has suggested that individuals with high levels of maladaptive perfectionism are unlikely to attempt academic challenges such as applying for medical school (Enns et al., 2001), possibly causing achievement to be perceived as low.

The results of the confirmatory factor analysis (CFA) showed that all paths were significant; however, the model fit indices were mixed. The values of the Standardized Root Mean Square Residual (SRMR) and Comparative Fit Index (CFI) indicated a good fit, but the Root Mean Square Error of Approximation valued showed a poor fit. Mixed results of the analysis are likely due to the small sample size and the even smaller group of low achieving individuals within the sample.

This study was limited by the size and representativeness of the sample. Approximately 85 percent of the sample was identified as high achieving. This indicates a possible recruitment issue that is not surprising: If an individual is truly not a high-achiever, they may be less inclined to fill out a survey or questionnaire that offers them no benefit. Out of the high achieving group, 40 out of 41 students self-reported a GPA of 3.5 or above, 73 participants reported having a graduate level education, and 33 participants reported being a veterinarian. The homogeneity of the high achieving portion of the sample is likely to have impacted the results of this study. Previous research has focused on specific groups, such as students or librarians, to comprise the sample. This study used a snowball method to collect information from individuals that included both students and non-student professionals. The variety within the current sample allows for some generalization of the findings, but future research comparing these constructs may benefit from focusing on very specific populations.

Although, previous research has focused specifically on high-achieving populations, the results of this study indicate that a small group of individuals identified as low achieving had high scores on the measure of imposter phenomenon. This finding suggests that achievement-related experiences, such as imposter phenomenon, may be present in previously unstudied populations, including individuals identified as being low-achieving. It is important that future research examine achievement-related experiences such as imposter phenomenon in individuals who are not traditionally perceived as high-achieving. Furthermore, the majority of research has focused on achievement as it relates to academic success and failure, including GPA, and performance in sports. There is an apparent lack of consensus on what constitutes "high-achieving" outside of these parameters, leaving researchers instead to define achievement by profession, such as medical doctor or academic faculty member, or by group, such as individuals possessing a doctoral degree. Outcomes of future research are likely to benefit from an operational definition of high and low achievement. Achievement can be examined in many ways. Previous research has lumped individuals together based on GPA or profession; however, achievement may not be so objective.

The contribution of the current findings not only demonstrate that experiences thought only to occur in high-achieving individuals are not isolated, but that current achievement definitions are lacking and must be examined. Although this study used conventional standards such as GPA, degree attained/education, and occupation to label individuals as high-achieving or low achieving, it would be a misconception to believe that achievement is so simply defined. Achievement is likely to be relative when examined closely. Parental education and occupation pave the groundwork for what an

individual believes is expected of them. Further, socioeconomic status, culture, and cognitive abilities are just a few of the many variables that likely impact achievement and how it is perceived: One man's stick-figure drawing may be another man's Mona Lisa.

The current research contributes to the literature and provides preliminary evidence that imposter phenomenon, fear of failure, fear of negative evaluation, and perfectionism are highly correlated with and predictive of one another. Despite appearing very similar, these constructs have never been examined within one study, until now. Furthermore, this study is unique in that it did not focus specifically on high-achieving populations. Although the proportion of low achievers is small in this study, the information gained is large: Those perceived as being low-achieving by conventional standards (GPA or occupation) may still experience feelings of being an imposter, fear of failure, fear of negative evaluation, and perfectionism.

Appendix A: Demographic Questions

Demographics Questions

Please answer the following questions as honestly as you can. Please remember that your answers are confidential.

What is your age? _____

How do you prefer to identify your gender? _____

What is your biologically assigned sex? Male Female

Do you consider yourself to be a high achiever?

Would others consider you to be a high achiever?

What is your highest level of education (choose one):

High School Diploma/Graduation Certificate
I am currently in college: Freshman
I am currently in college: Sophomore
I am currently in college: Junior
I am currently in college: Senior
I am currently in college: Graduate program
Associate Degree
Bachelor's Degree
Graduate Degree
Master's degree
MD/PhD/PsyD/JD
None of the above_____

For responses indicating the participant is a student.

What did you take for college admission? SAT, ACT, other ____
What was your score? ____

What is your current major: _____

What is your GPA? ____

Are you involved in student or other academic organizations? (select all that apply)

Sorority/Fraternity

Student Government
Leadership organization
Religious organization
Academic honor club/society
Athletics
Language/cultural club
Fine arts

Do you currently have a job?
Yes or No
If yes, on average, how many hours do you work per week? _____ hours/week

For responses indicating the participant is NOT a student:

Are you currently employed?
Yes or No
If yes, what is your current occupation (job title) _____
If yes, what is your field of work_____

How many hours do you work per week? ____

How long have you been in your current position?
Less than six months
Between six months and a year
Between 1 and 3 years
Between 3 and 5 years
More than 5 years

When was your most recent promotion?_____

Do you supervise any employees or volunteers?
If yes, how many? ____

How similar are your professional peers to you? Please select the response that best fits your level of agreement or disagreement with the following statements.

1 2 3 4

Disagree Agree

1. They are mostly the same sex
2. They are mostly the same race
3. They are mostly the same age

If Disagree (1 and 2) is selected:

Are the majority of your professional peers much older or younger than you?

___ Older
___ Younger

How common is it for people in your family to reach your current professional level? Please indicate this on the following scale:

Very Unusual Very Common
|----------|----------|----------|----------|----------|----------|

Appendix B: Measures

Clance IP Scale (CIPS; Clance, 1985)

For each question, please select the number that best indicates how true the statement is of you. It is best to give the first response that enters your mind rather than dwelling on each statement and thinking about it over and over

1 = Not at all true
2 = rarely
3 = sometimes
4 = often
5 = very true

1. I have often succeeded on a test or task even though I was afraid that I would not do well before I undertook the task.
2. I can give the impression that I'm more competent than I really am.
3. I avoid evaluations if possible and have a dread of others evaluating me.
4. When people praise me for something I've accomplished, I'm afraid I won't be able to live up to their expectations of me in the future.
5. I sometimes think I obtained my present position or gained my present success because I happened to be in the right place at the right time or knew the right people.
6. I'm afraid people important to me may find out that I'm not as capable as they think I am.
7. I tend to remember the incidents in which I have not done my best more than those times I have done my best.
8. I rarely do a project or task as well as I'd like to do it.
9. Sometimes I feel or believe that my success in my life or in my job has been the result of some kind of error.
10. It's hard for me to accept compliments or praise about my intelligence or accomplishments.
11. At times, I feel my success has been due to some kind of luck.
12. I'm disappointed at times in my present accomplishments and think I should have accomplished much more.
13. Sometimes I'm afraid others will discover how much knowledge or ability I really lack.
14. I'm often afraid that I may fail at a new assignment or undertaking even though I generally do well at what I attempt.
15. When I've succeeded at something and received recognition for my accomplishments, I have doubts that I can keep repeating that success.
16. If I receive a great deal of praise and recognition for something I've accomplished, I tend to discount the importance of what I've done.
17. I often compare my ability to those around me and think they may be more intelligent than I am.
18. I often worry about not succeeding with a project or examination, even though others around me have considerable confidence that I will do well.
19. If I'm going to receive a promotion or gain recognition of some kind, I hesitate to tell others until it is an accomplished fact.

Brief Fear of Negative Evaluation-II (BFNE-II, Carleton, Collimore, & Asmundson, 2007)

Please select the number that best corresponds to how much you agree with each item.

1=Not at all characteristic of me
2=A little characteristic of me
3=Somewhat characteristic of me
4=Very characteristic of me
5=Entirely characteristic of me

1. I worry about what other people will think of me even when I know it doesn't make any difference.
2. It bothers me when people form an unfavorable impression of me.
3. I am frequently afraid of other people noticing my shortcomings.
4. I worry about what kind of impression I make on people.
5. I am afraid that others will not approve of me.
6. I am afraid that other people will find fault with me.
7. I am concerned about other people's opinions of me.
8. When I am talking to someone, I worry about what they may be thinking about me.
9. I am usually worried about what kind of impression I make.
10. If I know someone is judging me, it tends to bother me.
11. Sometimes I think I am too concerned with what other people think of me.
12. I often worry that I will say or do wrong things.

Perfectionism Cognitions Inventory (PCI; Flett, Hewitt, Blankstein, & Gray, 1998)

Listed below are a variety of thoughts about perfectionism that sometimes pop into people's heads. Please read each thought and indicate how frequently, if at all, the thoughts occurred to you over the last week. Please read each item carefully and select the appropriate number, using the scale below.

0 = Not At All
1 = Sometimes
2 = Moderately Often
3 = Often
4 = All Of The Time

1. Why can't I be perfect
2. I need to do better
3. I should be perfect
4. I should never make the same mistake twice
5. I've got to keep working on my goals
6. I have to be the best
7. I should be doing more

8. I can't stand to make mistakes
9. I have to work hard all the time
10. No matter how much I do, it's never enough
11. People expect me to be perfect
12. I must be efficient at all times
13. My goals are very high
14. I can always do better, even if things are almost perfect
15. I expect to be perfect
16. Why can't things be perfect?
17. My work has to be superior
18. It would be great if everything in my life was perfect
19. My work should be flawless
20. Things are seldom ideal
21. How well am I doing?
22. I can't do this perfectly
23. I certainly have high standards
24. Maybe I should lower my goals
25. I am too much of a perfectionist

Perfectionistic Self-Presentation Scale (PSPS; Hewitt, Flett, Sherry, Habke, Parkin, et al., 2003)

Listed below are a group of statements. Please rate your agreement with each of the statements using the following scale. If you strongly agree, select 7; if you disagree, select 1; if you feel somewhere in between, select any one of the numbers between 1 and 7. If you feel neutral or undecided the midpoint is 4.

1	2	3	4	5	6	7
Disagree Strongly			Neutral			Agree Strongly

26. It is okay to show others that I am not perfect
27. I judge myself based on the mistakes I make in front of other people
28. I will do almost anything to cover up a mistake
29. Errors are much worse if they are made in public rather than in private
30. I try always to present a picture of perfection
31. It would be awful if I made a fool of myself in front of others
32. If I seem perfect, others will see me more positively
33. I brood over mistakes that I have made in front of others
34. I never let others know how hard I work on things
35. I would like to appear more competent than I really am
36. It doesn't matter if there is a flaw in my looks
37. I do not want people to see me do something unless I am very good at it
38. I should always keep my problems to myself

39. I should solve my own problems rather than admit them to others
40. I must appear to be in control of my actions at all times
41. It is okay to admit mistakes to others
42. It is important to act perfectly in social situations
43. I don't really care about being perfectly groomed
44. Admitting failure to others is the worst possible thing
45. I hate to make errors in public
46. I try to keep my faults to myself
47. I do not care about making mistakes in public
48. I need to be seen as perfectly capable in everything I do
49. Failing at something is awful if other people know about it
50. It is very important that I always appear to be "on top of things"
51. I must always appear to be perfect
52. I strive to look perfect to others

The Performance Failure Appraisal Inventory (PFAI; Conroy et al., 2002)

Please read each statement carefully before answering. Please indicate how much you agree with the following statements.

1	2	3	4	5
Do Not Believe at all		Believe 50% of the time		Believe 100% of the time

1. When I am failing, it is often because I am not smart enough to perform successfully.
2. When I am failing, my future seems uncertain.
3. When I am failing, it upsets important others.
4. When I am failing, I blame my lack of talent.
5. When I am failing, I believe that my future plans will change.
6. When I am failing, I expect to be criticized by important others.
7. When I am failing, I am afraid that I might not have enough talent.
8. When I am failing, it upsets my "plan" for the future.
9. When I am failing, I lose the trust of people who are important to me.
10. When I am not succeeding, I am less valuable than when I succeed.
11. When I am not succeeding, people are less interested in me.
12. When I am failing, I am not worried about it affecting my future plans.
13. When I am not succeeding, people seem to want to help me less.
14. When I am failing, important others are not happy.
15. When I am not succeeding, I get down on myself easily.
16. When I am failing, I hate the fact that I am not in control of the outcome.
17. When I am not succeeding, people tend to leave me alone.
18. When I am failing, it is embarrassing if others are there to see it.
19. When I am failing, important others are disappointed.

20. When I am failing, I believe that everybody knows I am failing.
21. When I am not succeeding, some people are not interested in me anymore.
22. When I am failing, I believe that my doubters feel that they were right about me.
23. When I am not succeeding, my value decreases for some people.
24. When I am failing, I worry about what others think about me.
25. When I am failing, I worry that others may think I am not trying.

Appendix C: Online Research Participation Consent

Study Title: Imposter phenomenon: Distinct construct or achievement-related affective experience?
Primary Investigator: Meghan Wilke, graduate student, Dept. of Psychology, Murray State University, Murray, KY 42071, (270) 809-2504.
Faculty Sponsor Contact: Dr. Sean Rife, (270) 809-4404, srife1@murraystate.edu

You are being invited to participate in an online research study conducted through Murray State University. This document contains information you will need to help you decide whether to be in this research study or not. You must be at least 18 years old to participate. Please read the form carefully and ask the investigator questions about anything that is not clear. You should print a copy of this document for your records.

Nature and Purpose of Project: The purpose of this study is to learn more about beliefs related to achievement and success. Research is being done by the student for completion of the master's thesis.

Explanation of Procedures: Your participation in this study will require you to complete an online survey that measures constructs related to achievement, success, and the thoughts you have when completing tasks. Your total participation should take no longer than 20 minutes.

Discomforts and Risks: There are no anticipated risks and/or discomforts for participants.

Benefits: This study is not designed to benefit you directly. However, your participation may help to increase our understanding of achievement related beliefs and behaviors.

Confidentiality: Your participation in this study is anonymous. Neither the researcher nor anyone else will know if you have participated or how you responded.

All responses from online participants will be anonymous, and may be made available in public repositories and to other researchers for reproducibility purposes. We are unable to guarantee the security of the computer on which you choose to enter your responses. Information (or data) you enter, and websites you visit online can be tracked, captured, corrupted, lost, or otherwise misused.

Refusal/Withdrawal: Your participation is strictly voluntary and you are free to withdraw/stop participating at any time with absolutely no penalty. You may skip any questions that you would prefer not to answer.

Contact Information: Any questions about the procedures or conduct of this research should be brought to the attention of Dr. Sean Rife at (270) 809-4404 or srife1@murraystate.edu. If you would like to know the results of this study, please contact Dr. Sean Rife.

I acknowledge that the risks and benefits involved and the need for the research have been fully explained to me; that I have been informed that I may withdraw from participation at any time without prejudice or penalty; and the investigator has offered to answer any inquiries that I may make concerning the procedures to be followed or my rights as a participant, and has answered to my satisfaction any questions that I have. I voluntarily consent to participate in this research project.

https://surveys.lyceum.ws/ls/index.php/961387?lang=en

This project has been reviewed and approved by the Murray State University Institutional Review Board (IRB) for the Protection of Human Subjects. If you have any questions about your rights as a research participant, you should contact the MSU IRB Coordinator at (270) 809-2916 or msu.irb@murraystate.edu.

Appendix D: IRB Approval Letter

MURRAY STATE UNIVERSITY

Institutional Review Board

328 Wells Hall
Murray, KY 42071-3318
270-809-2916 • msu.irb@murraystate.edu

TO: Sean Rife, Psychology

FROM: Jonathan Baskin, IRB Coordinator JB

DATE: 5/8/2018

RE: Human Subjects Protocol I.D. – IRB # 18-162

The IRB has completed its review of your student's Level 1 protocol entitled *Imposeter phenomenon: Distinct construct or achievement-related affective experience.* After review and consideration, the IRB has determined that the research, as described in the protocol form, will be conducted in compliance with Murray State University guidelines for the protection of human participants.

The forms and materials that have been approved for use in this research study are attached to the email containing this letter. These are the forms and materials that must be presented to the subjects. Use of any process or forms other than those approved by the IRB will be considered misconduct in research as stated in the MSU IRB Procedures and Guidelines section 20.3.

Your stated data collection period is from 5/8/2018 to 5/7/2019.

If data collection extends beyond this period, please submit an Amendment to an Approved Protocol form detailing the new data collection period and the reason for the change.

This Level 1 approval is valid until 5/7/2019.

If data collection and analysis extends beyond this date, the research project must be reviewed as a continuation project by the IRB prior to the end of the approval period, 5/7/2019. You must reapply for IRB approval by submitting a Project Update and Closure form (available at murraystate.edu/irb). You must allow ample time for IRB processing and decision prior to your expiration date, or your research must stop until such time that IRB approval is received. If the research project is completed by the end of the approval period, then a Project Update and Closure form must be submitted for IRB review so that your protocol may be closed. It is your responsibility to submit the appropriate paperwork in a timely manner.

The protocol is approved. You may begin data collection now.

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