PERSONALITY AND MENTORING: AN INVESTIGATION OF THE ROLE OF PROTÉGÉS’ PERSONALITY, PROTÉGÉ-INITIATION OF MENTORING RELATIONSHIPS AND MENTORING RECEIVED IN DOCTORAL PROGRAMS

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PERSONALITY AND MENTORING: AN INVESTIGATION OF THE ROLE OF PROTÉGÉS’ PERSONALITY, PROTÉGÉ-INITIATION OF MENTORING RELATIONSHIPS AND MENTORING RECEIVED IN DOCTORAL PROGRAMS

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ABSTRACT

Mentoring can change the course of our lives and, in graduate education, is defined as “a personal relationship in which a more experienced faculty member or professional acts as a guide, role model, teacher, and sponsor of a less experienced graduate student or junior professional” (Johnson, 2002, p. 88). It has been posited that this type of relationship is key to more rapid progression and degree completion, program satisfaction, and retention (Campbell, 2007; Huwe & Johnson, 2003; Johnson, 2007). While most universities report providing mentoring programs, graduate students report that the prevalence of mentoring relationships is between 50 and 70 percent, leaving a significant number of graduate students unmentored and missing a number of important benefits (Johnson, 2007; Mullen, 2007; Sedlacek et al., 2007). Individual factors and personality have been hypothesized as potential barriers to the initiation of mentoring relationships, and extraversion may be key in understanding the initiation and prevalence of mentoring (Bozionelos & Bozionelos, 2010; Campbell, 2007; Clark et al., 2000; Turban & Lee, 2007). This study investigated the effect of specific personality facets of the Five Factor Model, on protégés’ initiation of mentoring relationships with faculty and mentoring received. Data were collected from 162 doctoral students in the social sciences.

Mediation analyses revealed that initiation of mentoring by doctoral students mediated the relationship between friendliness, assertiveness, self-consciousness, self-
efficacy, achievement striving and mentoring received. Furthermore, hierarchical regressions revealed that the best set of predictors for mentoring received included initiation, age and friendliness accounting for 26% of the variance. Similarly, the best set of predictors for initiation included assertiveness and achievement striving accounting for 16% of the variance. However adding self-consciousness rendered assertiveness non-significant indicating that self-consciousness may act as a moderator between assertiveness and initiation and pointing out the need for future research in this area. This study informs the need to educate doctoral students about the importance of initiating mentoring relationships with faculty if they want to obtain mentoring. Implications for doctoral programs in the social science and suggestions for future research are also discussed.
DEDICATION

For Jef, for his endless support throughout this journey, and for my parents, Glaftos and Viviane Keramidas, who not only instilled in us the value of education, but made endless sacrifices to make sure we had access to it.
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# TABLE OF CONTENTS

LIST OF TABLES ............................................................................................................. xi

CHAPTER

I. INTRODUCTION .......................................................................................................... xi

The Importance of Mentoring for the Field of Counseling Psychology ......................... 5

Initiation of Mentoring .................................................................................................... 7

Benefits of Mentoring ..................................................................................................... 8

Mentoring Received (Prevalence) ................................................................................. 10

Barriers to mentoring .................................................................................................... 11

Personality and Mentoring ............................................................................................ 12

Individual traits and initiation of mentoring ................................................................. 13

Conclusion .................................................................................................................... 15

II. A REVIEW OF THE LITERATURE .......................................................................... 18

Youth Mentoring ........................................................................................................... 19

Mentoring in Organizations .......................................................................................... 21

Mentoring in Higher Education .................................................................................... 24

Comparison of Mentoring Across the Three Broad Areas ........................................... 27

What is Mentoring? “Definitional Vagueness” ............................................................ 29

Kram’s Mentoring Theoretical Framework .................................................................. 35

Mentoring in Graduate Education ................................................................................. 48

Barriers to Mentoring .................................................................................................... 63
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Skewness and Kurtosis Values for All Scale Scores</td>
<td>113</td>
</tr>
<tr>
<td>2. Participant Characteristics</td>
<td>114</td>
</tr>
<tr>
<td>3. Means, Standard Deviations, and Cronbach’s Alphas for All Scales</td>
<td>118</td>
</tr>
<tr>
<td>4. Bivariate Correlations Between Personality, Age, Initiation and Mentoring Received</td>
<td>119</td>
</tr>
<tr>
<td>5. Correlations</td>
<td>120</td>
</tr>
<tr>
<td>6. Hypotheses &amp; results</td>
<td>125</td>
</tr>
<tr>
<td>7. Results of Hierarchical Regression Analysis Predicting Initiation of Mentoring</td>
<td>134</td>
</tr>
<tr>
<td>8. Results of Hierarchical Regression Analysis Predicting Mentoring Received</td>
<td>134</td>
</tr>
</tbody>
</table>
God did not create you to be alone. He deposited skills, knowledge, and talents in someone out there who is expected to mentor you, teach you and encourage you to go high. Go, get a mentor!

― Israelmore Ayivor, *The Great Hand Book of Quotes*

Mentoring can change the course of our lives. It can inspire personal and professional growth and foster learning, and its effects can be both profound and transforming. Ask anyone to reflect on relationships that made a difference in their lives and you are likely to hear about a mentor (Ragins & Kram, 2007). In fact, in *Mentoring at Work*, Kram (1985) reports that when interviewing employees about major satisfactions and frustrations at work, they often discuss those who have been most influential and sources of support through transitions, and throughout the ongoing process of career development. Mentoring isn’t a new concept, and has been defined as “a relationship between an older, more experienced mentor and a younger, less experienced protégé for the purpose of helping and developing the protégé’s career” (Ragins & Kram, 2007, p. 5). Its roots can be traced back to Greek mythology when *Odysseus* entrusted his friend ‘Mentor’ to guide, and teach his son, Telemachus, while he sailed away to Troy (Ragins, & Kram, 2007). Interestingly, in Homer’s *Odyssey*, Athena, Goddess of wisdom, often takes the form of Mentor, encouraging Telemachus, and leaving us with a
The concept of Mentor that embodies both masculine and feminine qualities. The impact of mentoring was not widely understood until 1978 when Levinson published his seminal book *Seasons of a Man’s Life*. Kram (1985) followed with *Mentoring at Work*, providing a theoretical foundation for the field and transferring the concept of mentoring from an abstract academic construct to a commonly used household term (Ragins & Kram, 2007).

Famous mentor-protégé pairs have been at the center of many biographies. Whether they are known for their writing, acting, politics, psychology or philosophy, many would recognize several known pairs such as Sigmund Freud and Carl Jung, Harry Harlow and Abraham Maslow, or Gertrude Stein and Ernest Hemingway. As Mark Savickas wrote in the foreword of *The Blackwell Handbook of Mentoring*, in our modern world of constant transitions and thereby necessary lifelong learning, mentoring relationships become essential to help us navigate the transitions, tasks and traumas ahead.

In higher education, mentoring is typically based on an apprenticeship model of education whereas a faculty member provides support and guidance to a student. This type of relationship is posited to be key to more rapid progression and degree completion (Johnson, 2007) as well as program satisfaction (Huwe & Johnson, 2003) and retention (Campbell, 2007). Some researchers have called the relationship between student and faculty, “a foundational element of university life” (Erdem and Ozen, 2003) and others have stated “…good mentoring represents one of the important factors in graduate training, fosters long-term competence, and promotes effectiveness for both scientists and professionals” (Ellis, 1992, p. 575). Numerous benefits have been attributed to mentoring relationships between students and faculty including: higher satisfaction,
higher retention, increased identity development and confidence, increased research productivity, and increased professional skills, such as networking, often needed for career success (Campbell, 2007; Huwe & Johnson, 2003; Johnson, 2007; Sedlacek, Benjamin, Schlosser, & Sheu, 2007).

The advisor-advisee relationship is the most common developmental relationship in academia and is typically assigned at the beginning of a graduate program (Schlosser & Khan, 2007; Sedlacek et al., 2007). While advising may be the most commonly assigned role in graduate programs, advisors and mentors have been poorly defined in some research, or used interchangeably, leading to methodology challenges, a research literature that has developed in separate silos, and a mentoring prevalence rate that is debatable. The two-advising and mentoring, however, are not the same, and the research on various characteristics of mentoring relationships will be reviewed in this paper. Graduate students appear to be able to differentiate the two relationships, suggesting that the presence of psychosocial functions may be the differentiating factor between mentoring and other developmental relationships (Johnson, 2014; Rose, 2005).

Kram (1985) was the first to propose a comprehensive theoretical framework based on original research that she conducted through extensive interviews with 18 pairs of mentors and protégés. Her study revealed two main categories of mentoring functions, career and psychosocial, as well as four predictable phases in the development of a mentoring relationship. The two main categories of functions she identified included career functions, such as learning the ropes and preparing for advancement, and psychosocial functions, such as providing support and encouragement, functions that may help individuals with personal growth. She also described a role modeling function that
she included within her psychosocial functions category. The four predictable phases of a mentoring relationship that she identified included the initiation phase, when the relationship started, the cultivation phase [typically the longest phase], when the range of functions provided expanded, the separation phase, when the nature of the relationship changed due to structural or personal changes in one or both individuals, and the redefinition phase when the relationship evolved into a new relationship, such as friendship, or ended altogether. Kram (1988) further noted that career functions were typically offered first and that psychosocial functions were added as the relationship developed and progressed. Her theoretical framework helped shape much of the mentoring research in the next few decades.

A large body of mentoring research has confirmed that Kram’s (1985) theoretical framework, including two categories of functions and four distinct phases on mentoring, and continues to apply in higher education and organizations alike (Johnson, Rose, & Schlosser, 2007; Johnson, 2014; Mullen, 2007). In addition to research on mentoring functions provided by faculty, or valued by students, research on mentoring in higher education has also focused on benefits and outcomes, as well as barriers to mentoring such as lack of time, and influential factors such as personality characteristics. Much has also been written about the prevalence of mentoring between students and faculty, although it continues to be debated because of methodological issues (Johnson, 2007).

Despite benefits reported by students who are in a mentoring relationship with a faculty mentor, only about half of all graduate students report having such a mentor (Johnson, 2014; Mullen, 2007). Barriers, such as lack of time have been presented as possible explanations for this level of prevalence (Erich, Hansford, & Tennent, 2004).
Other factors such as personality traits have also been suggested as potential influences on the prevalence of mentoring relationships (Turban & Lee, 2007). Kram’s (1988) initiation stage of mentoring is especially significant for higher education because many mentored students report that their mentoring relationships are informal, meaning they were not a result of an assigned process, such as an advisor who is assigned at the start of a program (Mullen, 2007). In addition, informal mentoring appears to provide more positive outcomes than when the mentor is formally assigned by a third party (Johnson, 2014). Initiation presents a variable of interest because it is a necessary ingredient for the development of informal mentoring relationships. Past research conducted in business has suggested that specific personality traits in protégés may be linked to mentoring received through their initiation of mentoring. The purpose of the present study was to explore mentoring received by doctoral students in relation to specific facets of the five factors of personality that include introversion, agreeableness, conscientiousness and neuroticism. Initiation of mentoring relationships by doctoral students is posited to be the mediator between the personality facets and mentoring received. Given the centrality of students-faculty relationship to student satisfaction and success and the current lack of mentoring research focused on specific personality facets and its potential link to mentoring prevalence in doctoral education, this investigation will advance an important area of study for our field.

The Importance of Mentoring for the Field of Counseling Psychology

In higher education, and more specifically in psychology training programs, mentoring relationships have shown to be correlated to research productivity outcomes (Cronan-Hillix et al., 1986; Hollingworth & Fassinger, 2002), as well as retention and
degree completion (Johnson, 2014). Kahn (2001) suggested the field needs more focused efforts on research in counseling psychology training as it serves as a key ingredient to inform practice. Most graduates from division 17 report finding initial employment in human services setting such as counseling centers or private practice, all settings with little, if any, research opportunities, perhaps due to the lack of emphasis and training in research. Similarly, Hollingsworth and Fassinger (2002) also reported that training in counseling psychology was under scrutiny for lack of research done by counseling psychologists, despite its emphasis on the scientist-practitioner model. Hollingsworth and Fassinger (2002) emphasized that the research training environment (RTE) plays a crucial role in shaping counseling psychologists’ attitudes about research. As such, if the field of counseling psychology continue to endorse a scientific-practitioner model, it would appear beneficial to embrace mentoring as a way to enhance research productivity.

Moreover, Hollingsworth and Fassinger (2002) found that having a faculty mentor not only predicted higher research productivity during the graduate program, but also as an early career professional. In fact, a 2012 special issue of The Counseling Psychologist (Smith, Keller, Mollen, Bledsoe, Buhin, Edwards, & Yakushko, 2012) dedicated to the topic of early career psychologists, increasing mentoring opportunities was suggested as one of the strategies necessary to improve inclusion of early career psychologists in the field of counseling psychology. In addition to the advancement of research and practice, mentoring has been shown to be significantly related to many additional positive outcomes, including behavioral, attitudinal, health-related, interpersonal, motivational, as well as career related benefits such as greater satisfaction (Eby et al., 2008). These positive outcomes all matter to the field of counseling
psychology as they espouse many of the values that our field embraces such as prevention, social justice, diversity, optimal human functioning, and emotional and physical wellbeing (Hage, Romano, Conyne, Kenny, Matthews, Schwartz, & Waldo, 2007; Packard, 2009; Vera & Speight, 2003).

Finally, much of the research on mentoring has also demonstrated benefits related to self-esteem, self-efficacy, as well as subjective and objective career satisfaction (Johnson, 2007; Kram, 1985; Savickas, 2012). A focus on strengths, optimal functioning, altruism, and positive coping are all inherently included in a positive mentoring relationship that provides career functions, psychosocial functions and ethical role modeling. In addition, as stated by Blustein (2008) in his Psychology of Working framework, work is central to people’s life and to their well-being, and cannot be separated from other life domains. Mentoring relates to all these important issues in that it can provide positive outcomes in terms of career development, self-efficacy, and personal growth.

Initiation of Mentoring

According to Kram (1988), this phase can be characterized by strong positive emotions, and behaviors that encourage the development of the relationship. The initiation of mentoring in higher education has been presented as a variable of interest for several reasons. First, it seems evident that without initiation most informal (non-assigned) relationships won’t develop. Second, while most graduate students are typically assigned an advisor, mentors and advisors are not the same, and although some advising relationships develop into mentoring, most mentoring between students and faculty appears to develop informally, not as a result of an assigned process (such as
advising). In fact, Mullen (2007), in her review of the literature on *Naturally occurring Student-Faculty Mentoring Relationships*, noted “Studies indicate that the majority of student-faculty mentoring relationships are non-assigned, that is, informal” (p.121), noting a specific study by Dickinson and Johnson (2000) in which 87% of faculty surveyed indicated that the mentoring they provided was informal. Therefore, mentors and protégés that are matched by a third party as part of an official mentoring program are considered formal mentoring. Those mentoring relationships that develop spontaneously and gradually are considered informal mentoring. Third, it appears that in many cases, it is up to graduate students to initiate the relationship (Huwe & Johnson, 2003). For example, in their survey with 787 recent clinical psychology graduates, Clark et al., (2000), reported that in terms of initiation, 43% of protégés reported that they initiated the mentor relationship, 35% were mutually initiated while 14% were assigned. In comparison to student initiated relationship, only 8% reported that the relationship had been mentor initiated. Similarly, (Johnson, Rose, & Schlosser, 2007) indicated, “…students who understand the value of mentoring are most likely to actively seek out faculty and initiate mentorships,” (Johnson et al., 2007, p. 55), suggesting that students’ initiation is an important component making mentoring happen.

Benefits of Mentoring

Overall the benefits of having a mentor appear to be numerous. In higher education, research has shown that the relationship between a student and a faculty member is a key component to satisfaction and success (Clark et al., 2000). Specific benefits demonstrated through research have included faster progression through graduate school, higher degree completion (Tenenbaum et al., 2001), increased research
productivity (Cronan-Hillix et al., 1986), increased level of professional skills, increased professional confidence and professional identity (Johnson, 2007). For example, Hollingsworth and Fassinger (2002) investigated the link between research mentoring and students’ research productivity in a sample of 194 counseling psychology doctoral students. They measured research mentoring experiences with the Research Mentoring Experiences Scale (RMES), a measure they created for their study and they assessed research productivity using Kahn and Scott’s (1997) 8-item research productivity measure. Results indicated that research mentoring was an important predictor of students’ research productivity, further supporting previous findings that faculty mentoring is a critical component of the doctoral research environment. Clark, et al. (2000) surveyed 787 APA members who graduated with a PhD or PsyD in clinical psychology between 1994 and 1996 to assess (using their own created survey) their experiences of mentoring during graduate school. One of the most important benefits they found in students who reported being mentored was enhancement of professional confidence and identity. Finally, perhaps one of the most important benefits that can be partly attributed to mentoring is higher degree completion. Attrition rates in doctoral programs have been reported to be as high as 50% (Smallwood, 2004; Mullen, 2007; Crede & Borrego, 2014) undoubtedly representing enormous costs, monetarily, in human resources, and in time spent. Students who complete their PhD report that their success can be attributed to the presence of a mentor, thus justifying the need to better understand what barriers stands in the way of many graduate students benefitting from at least one mentoring relationship (Creighton et al., 2010).
Mentoring Received (Prevalence)

While research has clearly demonstrated numerous benefits that result from mentoring relationships between students and faculty, the prevalence of such relationships has been reported as “less common than might be expected” (Mullen, 2007, p. 134). While a majority of universities communicate that they provide mentoring, graduate students report that the prevalence of mentoring relationships falls somewhere between 50 and 70 %, leaving a significant number of graduate students unmentored and missing a number of important benefits (Johnson, 2007; Mullen, 2007; Sedlacek et al., 2007). For example, in their study on students’ views of mentors in psychology graduate training, Cronan-Hillix et al. (1986) stated that 53% of their respondents indicated having a mentor. Similarly, in their study of graduate students in clinical psychology doctoral programs, Clark et al., (2000), indicated that 66% of them reported having a faculty mentor, although 94% suggested it would be important for them to have a mentor. Some have suggested that institutions have a moral obligation to provide such mentoring (Weil, 2001), and others have noted that “our system of higher education, though officially committed to fostering intellectual and personal development of students, provides mentoring that is generally limited in quantity and poor in quality” (Levinson et al., 1978, p. 334). Similarly, in a more recent series of journal articles addressing advisor-advisee relationships in graduate training programs, Schlosser, Lyons, Talleyrand, Kim, and Johnson (2011) reiterate that while most graduate students report having an advisor, the prevalence of having a mentor is reported at falling between 50-66%. Recently, Johnson (2014) in his chapter dedicated to mentoring in psychology education and training, reported prevalence rates as ranging between 53% and 73% depending on the type of
Despite the numerous benefits that graduate students can obtain from engaging in a mentoring relationship with a faculty member, prevalence rates continue to fall somewhere between 50 and 70% presenting an opportunity to further our understanding of the barriers that prevent mentoring between students and faculty.

Barriers to mentoring

Several barriers to the formation, or optimal development of mentoring relationships have been identified. They can be classified in two main categories, environmental (or context based, such as lack of organization support, lack of reward system, lack of training, etc.) or individual (such as lack of interpersonal skills, individual cultural orientation, or personality factors). For example, Ehrich et al. (2004) identified barriers that exist at the organizational level including lack of support, difficulties planning programs, costs and limited resources. Kram (1988) also suggested that the power of contextual constraints cannot be underscored and that supportive behavior (such as that can be displayed in mentoring relationships) may be discouraged in environments that are competitive and results oriented. Time constraints on both faculty and students have been presented as another significant barrier to mentoring. In their meta-analysis, Ehrich et al. (2004) reported that lack of time was the most often cited barrier, which relates back to environmental support in the higher education environment, in that demands placed on faculty, such as research productivity, teaching load, service, and advising make it very challenging to keep productive, and maintain a work/life balance.

Individual factors such as cultural orientation may also influence a protégé’s desire for specific mentoring functions. For example, students who endorse a high power orientation, thereby endorsing a hierarchical order in which everybody has a place, may
be uncomfortable with psychosocial functions provided by a faculty member (Cox, Yang, and Dicke-Bohmann, 2014). Additionally, having poor interpersonal skills may not be conducive to close mentoring relationships. For example, Johnson et al. (2004) found that supervisees were attracted to professors and supervisors with strong interpersonal skills. Similarly, Cronan-Hillix et al. (1995) found that the most cited characteristics in mentors associated with positive mentoring were compassion, empathy, genuine and [being] nonsexist. Green and Bauer (1995) suggested that specific personality traits might be influential to the receipt of mentoring as well. For example, they stated: “Incoming students who had higher verbal aptitude and strong commitment to the program reported their advisors providing significantly higher levels of psychosocial and career mentoring functions at the end of their first year in their program” (p 555). Could this be due to a perception by faculty that these students were more conscientious or had stronger interpersonal skills? Many have called for more research in personality of mentors and protégés to further understand and advance mentoring theories (Campbell & Campbell, 2007; Green & Bauer, 1995; Turban & Lee, 2007).

Personality and Mentoring

Personality is defined as “individual differences in characteristic patterns of thinking, feeling and behaving” and includes both understanding individual differences as well as how these combine into a whole person (retrieved from www.apa.org/topics/personality/). While theorists like Freud, Jung, and Rogers have been able to influence the field by making inferences about personality structure, most researchers are now interested in individual differences in personality traits (McCrae, 2005).
Personality traits are “relatively enduring individual differences in the tendency to behave, think, and feel in certain ways” (Denissen, van Aken, & Roberts, 2011, p. 78). One of the most popular personality structures today is the Five-factor Model (FFM) that emerged after 40 years of research. The FFM suggests that personality can be described by a combination of five superordinate traits, including, Neuroticism (negative emotionality, low self-esteem, prone to depression and anxiety), Extraversion (sociable, assertive, positive emotion, energetic, adventure seeking), Openness to experience (creativity, unconventional, open-minded), Conscientiousness (achievement striving, dependability, planning), and Agreeableness (cooperative, trusting, flexible, empathic). The NEO Personality Inventory is used to assess the basic dimensions of the FFM and has become the most widely used instrument in the last few decades (Costa, & McCrae, 1992). Several researchers have provided evidence for cross-cultural generalizability of the FFM (McCrae, & Costa, 1997; McCrae, Yik, Trapnell, Bond, & Paulhus, 1998; Yang, 2010). The revised instrument, the NEO-PI-R (Costa & McCrae, 1992) is one of the most widely used instruments in personality research (assessing the FFM traits specifically) to date.

Individual traits and initiation of mentoring

A few studies have examined personality traits and the initiation of mentoring. For example, Turban and Dougherty (1994) investigated the role of protégé personality in receipt of mentoring and career success. Specific personality characteristics they examined included locus of control, self-monitoring, and emotional stability. Their hypothesis was that protégés’ initiation of mentoring would mediate the relationship between personality traits and mentoring received. To measure mentoring received, they
used the 18-item measure from Dreher and Ash (1990), a measure that assesses career and psychosocial functions received from a mentor (based on Kram’s theoretical framework). In order to measure initiation of mentoring relationships, they created their own measure. On a seven-point scale they assessed respondents on: “the extent to which they had (1) sought to become acquainted with higher-level managers, (2) made personal efforts to have their work become visible to higher-level managers, (3) taken the initiative to seek counseling and advice from higher-level managers, and (4) taken the initiative to find mentors in their organizations” (p. 692). The internal consistency (coefficient alpha) on their created scale was .81. Their results demonstrated that protégés’ personality characteristics, including internal locus of control, high self-monitoring and emotional stability, were indeed important determinants of mentoring received through their attempts to initiate mentoring relationships. Furthermore, they suggested that further investigations related to initiation of mentoring relationships should examine additional personality traits (Turban & Dougherty, 1994).

Aryee, et al. (1999) examined the mediating influence of the protégé-initiated mentoring relationship on the relationship between protégés personality and situational variables and mentoring received. Their personality variables included work locus on control, self-monitoring, extraversion, and type A personality. Their situational variables included individual development culture, information sharing norms, and opportunities for interactions on the job. They proposed that extraverts may be more likely to initiate mentoring relationships based on their preference for social engagement and outgoing style. As such, their hypothesis stated that extraversion would be positively related to protégé-initiated mentoring relationships and to mentoring received. Their measures
included, among others, The Eysenck Personality Revised Questionnaire (EPQ-R; Eysenck, Eysenck, & Barrett, 1985) to measure extraversion, a 4-item measure adapted from Dreher and Ash (1990) 18-item scale to measure mentoring received, with an alpha reliability score of 0.80, and a 5-item scale adapted from Turban and Dougherty’s (1994) scale to measure protégé-initiated mentoring relationships. As they hypothesized, results indicated that protégé-initiated mentoring relationships mediated the relationship between extraversion and mentoring received.

Bozionelos (2004) investigated mentoring provided related to mentors’ career success, personality and mentoring received, and found that the mentor’s personality played a limited role in mentoring provided. This was an interesting finding in light of the fact that it has been suggested that mentoring provided is affected by a mentor’s personality (Turban & Dougherty, 1994). However, the author found that mentoring provided mediated the relationship between mentoring received and subjective career success, and that the mentor’s personality trait of openness to experience was related to mentoring provided (and was the only five factor trait to show significance in a stepwise hierarchical regression model). Mentoring received was measured using 7 items from Dreher and Ash (1990). The Five-factor model traits were assessed using the Cattell 16PF5 (Cattell, Cattell, & Cattell, 1993).

Conclusion

In an impressive review of hundreds of mentoring studies across disciplines, Johnson and Andersen (2015) declared that “mentoring is consistently associated with greater work satisfaction and performance, higher retention, better physical health and self-esteem, positive work relationships, stronger organizational commitment, career
motivation, professional competence, and career recognition and success.” It would seem ambitious to try to find another construct that would amass as many benefits as positive mentoring relationships.

While several studies, mostly conducted in business settings, have explored the influence of protégés’ personality characteristics on mentoring relationships (e.g., Bozionelos, 2004; Turban & Lee, 2007), very few have examined these as they relate to their initiation of mentoring, an important variable in mentoring relationships between students and faculty. None of these studies, to the author’s knowledge, has examined specific personality facets as they relate to the initiation of mentoring or to mentoring received in a higher education setting. These specific facets were chosen to follow the research agenda and recommendations set forth by Turban and Lee (2007) and are meant to represent personality characteristics indicative of more proactive behavior and a positive interpersonal orientation as they suggested these would likely be related to the initiation stage of mentoring relationships. They include facets of neuroticism (anger and self-conscious), extraversion (Friendliness, gregariousness, cheerfulness, and assertiveness), agreeableness (trust and modesty) and conscientiousness (self-efficacy and achievement-striving). The initiation stage of mentoring is especially important to the prevalence of mentoring relationships in graduate school as it has been shown that most mentoring relationships between students and faculty are informal, meaning they didn’t develop as a result of an assigned process, but rather developed spontaneously and gradually (Mullen, 2007). This study therefore, explored whether protégé-initiated mentoring mediates the relationship between specific protégés’ facets of the FFM personality traits and mentoring received. The main goal of the study was to advance our
knowledge and understanding of the formation of mentoring relationships between doctoral students and faculty in the social sciences.
Dating back to Greek mythology, mentoring has now become part of the popular culture. In their introductory chapter of *The Blackwell handbook of Mentoring*, Eby, Rhodes, and Allen (2007) describe a concept that has incited much interest and has become prevalent in our daily lives through the popular press, however they also describe this as a mixed blessing in that the concept of mentoring has been applied broadly in very different setting and has also created definition and conceptual confusion, “…mentoring is everywhere, everyone thinks they know what mentoring is, and there is an intuitive belief that mentoring works.” (p. 7).

Much of the mentoring research that emerged following Kram’s seminal *Mentoring at Work* (1985) has focused on three broad areas: youth mentoring, mentoring in organizations, and academic mentoring, and has developed in silos, keeping the research disconnected and keeping the mentoring research from developing clear generalizations and focused research questions. The Blackwell Handbook of Mentoring (Eby et al., 2008) was written to gather and connect this research and help inform future research. This section introduces a brief overview of the mentoring literature in all three areas, a summary of outcomes, and a short comparison of these three areas of research.

The second section starts with an introduction to some of the methodological issues discussed extensively in the research including the lack of a consistent definition.
Kram’s comprehensive theoretical framework is then introduced and presented, along with its application to higher education, as well as the benefits of mentoring in graduate education. The rest of the chapter lays the foundation for the main research question by focusing on the prevalence of mentoring between graduate students and faculty, barriers to these relationships and finally on personality facets’ influence on the initiation of mentoring.

Youth Mentoring

Much of the research on youth mentoring has specifically targeted at risk-youth. Youth programs targeting at risk-youth were rooted in the social movements of the late 19th and 20th centuries that underscored the importance of mentoring as a protective factor. Youth mentoring typically describes the relationship between a caring, supportive adult and an unrelated youth (Eby et al., 2007). The goals of these formal programs is to provide an opportunity for mutuality, trust and empathy that can in turn lead to social-emotional, cognitive, and identity development leading to positive outcomes such as well-being. More specifically, self-esteem, defined as an individual overall self-evaluation, is often cited as a main goal of formal youth-mentoring programs. Emotional support and social approval derived from these relationships is purported to help enhance self-esteem. Youth mentoring can be provided through community-based mentoring programs, school-based programs, or can be integrated within other youth services such as summer camps, sports, or church youth groups. Community-based programs typically match volunteers with at-risk youth and can target at-risk youth in general, or specific groups such as juvenile offenders, or youth in foster care. For example, Big Brothers Big Sisters, is one organization that provides such mentoring to thousands of youth. School-
based mentoring programs are growing in numbers, and typically include academic assistance in addition to emotional support and guidance. The need for such programs has been identified as resulting from various factors, including a decrease in community cohesiveness and social capital, overcrowded schools and loss of safety in communities. Combined, these factors have led to a decline in the number of caring adults that develop informal relationships with youth (Schwartz, Lowe, & Rhodes, 2012).

Outcome research on youth mentoring has been inconsistent. For example, different studies have found both positive, and negative impact on grade point average. However, two large meta-analytical reviews (Dubois, Holloway, Valentine, and Cooper, 2002; Altbach, Lomotey, Rivers 2002) have found a small to medium impact on academic achievement and career related goals as well as some (although lesser) impact in delinquent behaviors such as initiation of substance use (Blinn-Pike, 2007). While consistent research on youth mentoring outcomes from informal programs is lacking, it has been suggested that informal programs may be more impactful for multiple reasons. For example, informal mentoring relationships may last longer than a formal program that may last only a pre-determined amount of time. Informal relationships may also be more common and are often embedded into the mentor and protégé’s social or kinship networks. The mentor in informal relationships may be more similar to the protégé in terms of gender, ethnicity, and socioeconomic background. He or she may also be already familiar with the protégé’s life circumstances and may have access to time with the protégé at family events, and/or religious celebrations (Blinn-Pike, 2007). So while many programs exist in youth mentoring, most are formalized despite some evidence that informal relationships might be more powerful because of reasons cited above.
Mentoring research conducted in organizational settings has focused on career advancement and consists of both formal and informal programs often targeted at high potential employees. The main goal of these programs is often to prepare targeted employees for advancement (Eby, Allen, Hoffman, Baranik, Sauer, Baldwin, Morrison, Kinkade, Maher, Curtis, & Evans, 2013). Organizations have long recognized the benefits of mentoring on career outcomes, offering motivation for employees to see the value in fostering such relationships with books titled *Everyone Who Makes it Has a Mentor* (Collins & Scott, 1978) or statements such as “to have a mentor is to be among the blessed. Not to have one is to be damned to eternal oblivion or at least to a mid-level status” (Halcomb, 1980, p.14). Kram’s seminal research in *Mentoring at Work* (1985) was conducted in an organizational environment. Much of the research on mentoring in the workplace has adopted her framework, including her definition of mentoring (“a relationship between an older, more experienced mentor and a younger, less experienced protégé for the purpose of helping and developing the protégé’s career”) and her theory that mentors typically offer two main categories of mentoring functions, namely, career and psychosocial functions. Overall, mentoring research in organizations has been prolific and has presented mentoring as a key component to career success, suggesting countless beneficial outcomes. For example, Allen, Eby, Poteet, Lima and Lentz (2004) conducted a meta-analytic review of over 40 empirical studies on organizational mentoring and found that mentored individuals reported both objective career success such as total compensation, salary growths and promotions, subjective career success such as career and job satisfaction, advancement expectations, and career commitment. In
addition, they found both types of mentoring functions, career and psychosocial to be beneficial, although “the most consistent benefits of mentoring appear to be the relationship with affective reactions at work and positive feelings about one’s career” (Dougherty, & Dreher, 2007). Research has also shown positive outcomes for mentors, such as a sense of personal fulfillment, encouragement, friendship, advice, feedback, recognition and improved job performance (Kram, 1985), and for organizations, including increased productivity and profits, enhancement of services offered, and retention of talented employees (Ehrich et al., 2004). As in youth mentoring, both formal and informal mentoring has been researched in organizations revealing that, similarly to youth mentoring, informal mentoring relationships may be more effective (Ragins & Cotton, 1999). Organizational mentoring research has also focused on differentiating mentoring from other types of relationships typically found in organizations such as leadership and supervision. For example, Godshalk & Sosik (2007) in a chapter on Mentoring and Leadership in The Handbook of Mentoring at Work, indicate that while a leader may provide mentoring functions, a leader-subordinate relationship is different from a mentor-protégé. As such, they distinguish between transactional leaders, who follow a cost-benefit exchange approach with subordinates by setting goals and providing feedback and rewards, and use positional power to influence them. In contrast, transformational leaders broaden and elevate subordinates’ goals, in turn helping them gain confidence and enhanced skills, by providing a vision and personalized attention. The authors further suggest that transformational leadership can be used to further understand and develop existing mentoring frameworks, as they appear to be closely related. Similarly, another area of research has focused on the importance of role
modeling in mentoring relationships. While Kram (1985) initially described modeling as a specific role within psychosocial functions, Scandura (1992) suggested it was a separate and distinct function. Dickson, Kirkpatrick-Husk, Kendall, Longabaugh, Patel, & Scielzo, (2014) found role modeling to be the strongest predictor of outcomes related to mentoring and suggested that authentic leadership could be used as a model framework to train mentors in organizations. Authentic leaders are described as being aware of how both their strengths and weaknesses affect others, and as having strong held values and a strong sense of responsibility as they guide their subordinates. Finally, more recent research on organizational mentoring has focused on new forms of mentoring such as, multiple mentoring, team mentoring, and E-mentoring. Research on multiple mentoring suggests that having a constellation of mentors may be more beneficial than having a single mentor. In team mentoring, a resident expert serves as a mentor to a team of mentees. This type of mentoring is therefore both dyadic and group focused and mentoring relationships exist between the mentor and each mentee, but also between each mentee, also representing a form of peer mentoring. E-mentoring happens when the primary communication between a mentor and a mentee occurs electronically, presenting with it some new challenges (i.e. relationship may take longer to develop) and perhaps more risks (i.e. miscommunication) than traditional face-to-face mentoring (Scandura, & Pellegrini, 2007). In terms of outcomes, meta-analytical reviews have shown that mentored individuals appear to benefit from mentoring by reporting more objective and subjective career success. These include higher incomes, more promotions, more job and career satisfaction, and more career commitment (Kram, 1985; Dougherty, & Dreher, 2007).
Mentoring relationships can benefit mentors as well. Helping a mentee may provide a mentor with internal satisfaction by providing guidance and support and gaining respect for his or her teaching and coaching skills. Finally by helping someone face the challenges of early career development, a mentor can reappraise his or her own past, a central developmental task at midlife (Kram, 1988). A mentor may also gain a sense of competence and self-worth as his own career advancement levels off and may receive recognition and respect from peers for mentoring others (Kram, 1988).

Mentoring in Higher Education

Although mentoring research has been conducted for several decades, most of it has focused on mentoring in the context of business and organizational environments. Comparatively, research on mentoring in higher education has remained scant. The reason for this isn’t clear but perhaps can be explained by an assumption that since the business of education is to develop students, mentoring happens naturally and with enthusiasm (Wunsch, 1994). The assumption that mentoring is beneficial to, and needed by, students has been clearly communicated in professional publications such as in the October 1999 APS Observer that stated: “scientists are in need of mentors at many stages of their career but particularly in undergraduate and graduate study” (p. 18). Do institutions of higher education have an explicit obligation to personally and professionally develop their students and help them become productive members of society? Research, and anecdotal evidence, suggest that mentoring is not as prevalent as we might expect (Mertz, 2004). Indeed, Cronan-Hillix et al., (1986) report that many students in graduate school who may want to be mentored, are not mentored. During the academic year 2013-2014, two graduate students at the University of Akron conducted a
campus-wide survey on mentoring and were surprised to find out from returned surveys that many students indicated that they did not have a mentor (Allen, M., personal communication, 2014), something they had not considered prior to sending out the survey. Similarly, Kim and Keramidas (2014) conducted a focus group on educational experiences of international female doctoral students and only two of the participants (or about 33%) reported having a mentor. The concept of mentoring, however, has gained increasing national support in higher education (Crisp, & Cruz, 2009), and most universities report that they provide mentoring for both undergraduate and graduate students (Campbell, 2007).

While most research on mentoring in higher education has focused on an apprentice model between a faculty and a student, three types of mentoring have been described in the literature. In addition to student-faculty mentoring, peer-to-peer and alumni-to-peer mentoring are additional types of mentoring that are reported in the mentoring literature in higher education. Similarly, three specific student groups are often targeted for mentoring programs (Campbell, 2007). College freshmen are often targeted for mentoring, specifically as a way to increase retention. Tinto, (1993) in his seminal *Leaving College*, indicated that about 50% of the students who start college will not graduate, with most of them leaving in the first year. Ethnic minorities and female students are also often targeted for mentoring because many are reported to have more challenges in adjusting to college and may have lower graduation rates (Tinto, 1993). The third group of students often targeted for mentoring are those interested in specific majors or careers, such as those in STEM fields. In this group, the goal of mentoring is often to increase success in those majors and careers, as well as increase the number of
students pursuing those majors, and eventual careers (Campbell, 2007). Further, mentoring provided to undergraduate and graduate students are often distinct in terms of general goals. While mentoring provided to undergraduate students aims to promote general academic success, mentoring provided to graduate students is generally aimed at preparing students for professional success and to help them develop a professional identity (Huwe & Johnson, 2003).

A student’s relationship with his or her faculty has been reported as central to success in higher education (Crisp & Cruz, 2009; Johnson, Skinner, & Kaslow, 2014; Lechuga, 2011; Wright & Wright, 1987). Tinto (1993) who described graduate education as a developmental process in which doctoral students go through three distinct stages of doctoral persistence, namely, transition and adjustment, attaining candidacy, and completing the dissertation, states “it is the faculty-mentor relationship that is most likely to shape completion” (Tinto, 1993, p. 214). And with completion rates in graduate programs hovering around 50% (Tinto, 1993), retention is of utmost importance to graduate programs who invest vast amount of limited resources in their graduate student training (Holley, & Caldwell, 2012). Furthermore, some have noted that mentoring by advisors is expected and encouraged and has been shown to provide a significant influence on students’ professional development (Jacobi, 1991; Merriam, 1983; Green & Bauer, 1995). Some (Winston & Polkosnik, 1984) have argued that although an advisor cannot be expected to be a mentor or a friend, however desirable those may be, he or she is expected to provide five functions, including information disseminator, departmental socializer, advocate, role model, and occupational socializer. One topic of particular interest in research on student-faculty relationships has been the distinction between
advisors and mentors (Johnson et al., 2007; Holley, & Caldwell, 2012; Mullen, 2007), which is expanded in the section on mentoring in graduate programs.

In summary, while mentoring in higher education has been scant in comparison to youth mentoring and mentoring in organizations, overall, it has shown that students who get mentored benefit from outcomes such as increased satisfaction, higher retention and completion rate, and vocational success (Johnson, Skinner, & Kaslow, 2014).

Comparison of Mentoring Across the Three Broad Areas

As described above, mentoring research has focused on three broad areas that have not been clearly integrated. In The Blackwell Handbook of Mentoring, Allen and Eby (2007) provide readers with a first integration of the research across the three areas to help mentoring researchers advance the theory, research and practice of the field. This section presents a comparison of mentoring across the three areas brought forth in the mentoring research in order to help synthesize it.

When contemplating mentors’ motivation, it has been suggested that youth mentoring may be motivated by a fundamental altruistic drive (other-focused) while workplace and academic mentoring may be motivated by a desire for mentors to enhance their own achievements. Youth mentoring may also have far-reaching societal effects while academic mentoring may still impact an institution or a profession but its reach may not be as wide. Workplace mentoring is more likely to benefit a single organization or perhaps a specific industry (Butts, Durley, & Eby, 2007). Across all three areas, relationships are two-way, developmental in nature, and typically provide functions that are both career or educationally focused, as well as psychosocial. However, because of the focus on developing self-esteem often seen with mentoring programs with youth,
psychosocial functions maybe more important in youth mentoring. Mentoring in all three areas can have negative outcomes due to, for example, mentor incompetence, lack of empathy, boundary issues, or deceptive protégés (Butts et al., 2007).

Finally, similar methodological issues have been found across all three areas. The most often cited issue relates to a lack of clarity and consistency in defining mentoring and mentors. The research literature describes a field that has had difficulty with conceptualizing and distinguishing mentoring relationships from other relationships such as coaching, advising, and role modeling (Crisp, & Cruz, 2009; Dickson et al, 2014; Jacobi, 1991). Similarly, much of the research across the three areas has focused on protégés, both in terms of outcomes, perceptions of mentoring and antecedents, neglecting the mentors’ perceptions, characteristics, and outcomes and as such future research needs to be more dyadic and data must be collected from multiple sources and from both individuals in the mentoring pair (mentor and protégé). Research in all three areas also cites the need for more longitudinal designs and suggests that future research focus on the impact of technology, and on the need for multiple mentors and other newer forms of mentoring such as multiple mentoring, e-mentoring, and group mentoring.

In summary, while the three broad areas have some distinguishing features, including motivation to mentor and impact, methodological issues discussed (lack of clear definition, need for longitudinal designs, and need to assess relationships from both sides and include mentor’s perspective) appear to be present in all three areas and therefore will need to be addressed in future research (Johnson et al., 2007; Butts et al., 2007).
What is Mentoring? “Definitional Vagueness”

In this section, the methodological issue that has been raised across the literature regarding the lack of consistent definition is discussed and is concluded with the definition chosen for the study. Most research on mentoring has shown it to be an overall positive developmental relationship, and has mostly confirmed that career and psychosocial functions are both key to positive mentoring. However, the research itself has been strongly criticized for its lack of a consistent definition, as well as conceptualization of the mentoring construct, making it challenging to compare and generalize, and to provide a comprehensive summary of the mentoring literature. In an early review of the literature, Merriam (1983) indicated “the phenomenon of mentoring is not clearly conceptualized, leading to confusion as to just what is being measured or offered as an ingredient to success.” She further notes that, in education, a mentor is described as a friend, guide, counselor, but mostly a teacher and yet studies have failed to differentiate a mentor from an influential teacher (Merriam, 1983). Jacobi (1991) in her literature review referred to this methodological flow as ‘definitional vagueness.’ In her review of the literature on mentoring, she provides the reader with 15 definitions she found in her search across the fields of education, management, and psychology. For example, from the field of higher education, she includes “Mentors are colleagues and supervisors who actively provide guidance, support, and opportunities for the protégé. The functions of a mentor consist of acting as a role model, a consultant/advisor, and a sponsor” (Schmidt & Wolfe, 1980, p. 45), and “Ideally, a professor takes an undergraduate or graduate student under his or her wing, helps the student set goals and develop skills, and facilitates the student’s successful entry into academic and
professional circles” (Moses, 1989, p. 9). In the field of management, a mentor is defined as “someone in a position of power who looks out for you, or gives you advice, or brings your accomplishments to the attention of other people who have power in the company” (Fagenson, 1989, p. 312) or a more broad definition found in the field of management includes “Mentors are influential people who significantly help you reach your major life goals” (Phillips-Jones, 1982, p. 21). Jacobi (1991) also points to a particular issue that has plagued the mentoring field, namely the propensity to use different terms, describing different developmental relationships interchangeably. For example, “the terms ‘mentor’ and ‘sponsor’ are often used interchangeably to indicate older people in an organization or profession who take younger colleagues under their wings and encourage and support their career progress until they reach mid-life” (Speizer, 1981, p. 708).

Finally, Crisp and Cruz (2009) in a review of Jacobi’s review article that also incorporates the mentoring literature from 1990-2007, reported that they identified over 50 definitions (including the 15 originally reported by Jacobi, 1991), indicating that the field has made very little progress to address the issue of consistency in defining and conceptualizing mentoring. This theme has been found across all areas of mentoring research, including, mentoring youth, mentoring in organizations, and mentoring in higher education. Examples of the many definitions of mentoring or mentor that have been used include, “a veteran professional who takes on an active interest in the career development of a younger professional,” (Wright & Wright, 1987, p. 204) “a mentor may be seen as more than a supervisor, instructor, or coach” (Rose, 2005, p. 53), or, as, “a father figure who sponsors, guides, and develops a younger person” (Ehrich et al., 2004).
Because of this lack of a clear operational definition, Johnson et al., (2007, p. 51) suggest an alternative way to describe the mentoring construct by providing a list of components that best describe mentoring relationships. They are: “1) enduring personal relationships; 2) increasingly reciprocal and mutual; 3) mentors provide direct career assistance; 4) mentors provide social and emotional support; 5) mentors serve as role models; 6) results in an identity transformation in the protégé; 7) offer a safe environment for self-exploration; 8) generally produce positive career and personal outcomes.” These components also reflect similar functions as those described by Kram including career development and psychosocial functions as well as role modeling. In using functions as a descriptor of mentoring, Metz, (2004) points out that mentoring has also been described as teaching, counseling, role-modeling, sponsoring, guiding and advising.

All this confusion and lack of a common definition of mentoring, including clear boundaries to distinguish mentoring from other developmental relationships, has made it difficult to interpret and build a coherent base of mentoring research. Indeed, the only consensus in the field appears to be that there is no consensus on a clear definition (Ku, Lahman, Yeh, & Chen, 2008) and even researchers cannot agree on a single definition (Mertz, 2004). Perhaps the one agreement is that the definition of a mentoring relationship seems to evoke a sense that a mentoring relationship entails both an intellectual and an emotional interaction.

In his *Seasons of a Man’s Life*, Levinson (1978) stated “The mentor relationship is one of the most complex, and developmentally important, a man can have in early adulthood…No word currently in use is adequate to convey the nature of the relationship we have in mind here…Mentoring is not defined in terms of formal roles, but in terms of
the character of the relationship and the functions it serves” (Levinson, 1978, p. 97-98). Therefore, it appears that possible reasons for this lack of coherence and variations in the definition of mentoring could stem from its changing nature as well as its complexity. Kram’s theoretical framework (1985), similarly suggests that mentoring relationships are continuously changing and evolving as demonstrated by her description of the [changing] stages of development. Movement from one stage to the next is typically triggered by changing needs of the individuals in the relationship, or, by changes in the contextual environment in which the relationship is taking place. Similarly, individuals in a mentoring relationship bring with them various degrees of interpersonal skills, different backgrounds, different experiences, possible gender and ethnicity differences, and additional individual differences such as personality traits. Furthermore, because mentoring relationships are developmental in nature, individuals are likely to grow personally and professionally, and develop and integrate a new professional identity. Similarly, the context in which the relationship is taking place also influences its development.

In addition to the evolving nature of the mentoring relationship, it is also important to remember that since Levinson (1978) and Kram (1985) undertook their seminal research on mentoring, the way we conceptualized a ‘career’ has changed dramatically. The traditional career path where one joins a corporation and rises through the ranks, up the career ladder is no longer the norm but perhaps more the exception. While work remains central to people’s lives and wellbeing (Blustein, 2008), Savickas (2012) suggests that nowadays, the ability to navigate transitions may be more important to success than going up the [traditional] ladder. Hall and Mirvis (1996), suggest that a
new concept of career, that they refer to as the ‘New Protean career,’ has evolved, and is now centered around the concept of learning to learn. In this career, identity growth and adaptation are the most relevant skills needed. In addition, while the concept of mentoring at work may have focused more on ‘an old [white] boys network,’ we are part of a much more diverse workforce and a number of potential new barriers to mentoring, such as the lack of female role models.

As stated by Williams-Nickelson (2009), the practice of mentoring must begin with a clear operational definition and understanding of functions it entails. Based on a study she conducted by completing a pilot survey with 55 women graduate students followed by grounded theory research with eight eminent women psychologists, she defined mentoring as “…a person in an individual’s chosen profession who is actively working to integrate a new person into a professional role. The mentor feels some responsibility for the successful development of the mentee’s career.” She further adds that the relationship includes both professional and personal elements, is intentional in providing guidance, support and challenges and that it changes overtime.

In summary, although the research on mentoring is riddled with definition variations, it is perhaps a reflection of its complexity and constantly evolving nature. Continued research is needed to further understand its various constructs, but also to understand how individual differences, and environmental factors influence the development of mentoring relationships. Therefore, given the complexity of mentoring relationships due to various individuals’ background, cultural influences, personality, and other factors that can affect a relationship, it is of utmost importance to design research that ensures construct validity. Because of its complexity, two things can be done to
avoid issues with construct validity with a construct such as mentoring. The first is the need to explain to the reader what you mean when you use a particular concept, the second is the importance of explaining what the construct means to you since it can have more than one meaning as demonstrated by the multiple definitions found in the literature. In line with these recommendations, a precise definition of the construct is provided, to help ensure a consistent understanding of the construct by study participants. The definition is based on Johnson’s (2002) definition and encompasses all functions described by Kram (1985), including career development functions, psychosocial functions, and role modeling: Mentoring is a personal developmental relationship with an experienced faculty member who may or may not be your advisor and may or may not be in your own program, but who serves as a role model, guide, teacher, and encourager and at times provides you with personal and career counsel and advise. In addition this mentor might involve you in their research endeavors or cooperate on professional presentations and/or introduce you to colleagues in your field of study.

In the next section Kram’s (1985) mentoring framework is introduced. This is the theoretical framework used in this study, with a particular focus on the initiation phase of mentoring described below. There is some evidence that the majority of mentoring relationships in graduate programs develop spontaneously and are not assigned by a third party, therefore the initiation phase is an important part of the process and worthy of investigation. As Mullen (2007) indicated, “The issue of formation is key to clarifying that informal refers to how the relationship itself has been initiated…” (p. 120). Some have made specific suggestions for such studies. For example, Turban, Dougherty, & Lee (2002), suggested that Byrne’s similarity-attraction paradigm could be a foundation
for studying the initiation of mentoring between students and faculty, as they found that perceived similarity might influence satisfaction with mentoring. While this might explain why protégé and mentor would start a relationship, the focus of this study is on protégés’ initiation of mentoring as a mediator between specific personality facets and mentoring received.

Kram’s Mentoring Theoretical Framework

Levinson’s research on human development was key in introducing the concept of a mentor, and Kram (1985) took this concept further by developing a comprehensive theoretical framework of mentoring. In her framework, Kram proposed that mentoring relationships provide two main categories of functions, career development and psychosocial functions, and, develop through distinct and predictable phases. While Scandura (1992) later described role modeling as a third distinct function, Kram included role modeling within psychosocial functions. Kram’s (1985) definition of mentoring as “a relationship between an older, more experienced mentor and a younger, less experienced protégé for the purpose of helping and developing the protégé’s career” has been used extensively in the mentoring literature. Recently, Dickson et al., (2014) have suggested that while Kram’s definition is still applicable, a new conceptualization might describe the relationship between a mentor and a protégé in terms of experienced/skilled and less experienced/skilled instead of older/younger. Kram’s (1988) description of mentoring in terms of functions and phases, as described below, is one of the most comprehensively developed mentoring constructs, (Mullen, 2007) and her theoretical framework has been used and cited extensively in research (Johnson, 2014).
Kram’s functions.

Kram (1988) identified mentoring functions as belonging to two main categories, career functions, such as learning the ropes and preparing for advancement, and psychosocial functions, which help individuals with personal growth. Career functions serve to enhance a mentee’s career development. In *Mentoring at Work*, Kram (1988) provides great detail and examples to describe career and psychosocial functions. Career functions include coaching, sponsoring, protecting, providing exposure and visibility, and challenging assignments. Coaching involves providing someone with strategies to reach specific goals, giving advice or sharing ideas on the requirements to reach such goals. Sponsoring involves a mentor providing public support and nominating an individual for advancement in an organization. Without sponsors someone may be overlooked for such advancement. Providing protection may involve taking the blame for an incomplete assignment, or shielding the person from contact with senior managers that may damage the individual’s reputation. Exposure and visibility on the other hand provides the junior manager with an opportunity to demonstrate talent and skills to other senior managers or providing assignments that provide interactions with key senior managers. Finally, providing challenging assignments can help a junior person learn and develop new skills and gain confidence in their abilities. In this role, a mentor may act more as a teacher by providing specific skills training and feedback. Psychosocial functions, on the other hand, enhance a mentee’s sense of competence, identity, and self-worth. Psychosocial functions include providing support, counseling, acceptance, as well as role-modeling. These functions are based on trust and intimacy. A mentor may be a role-model if the mentee sees him or her as a desirable example, someone the mentee respects, admires and
wants to emulate. The mentee may also identify with the mentor, by seeing parts of his current and idealized self in him or her. Through acceptance and confirmation, a mentor reinforces a mentee’s sense of self and developing identity as a new professional in the field by providing support and encouragement. It may help the new professional take risk in a new and unknown professional territory or to try new skills. A key element of this function is that it provides a space that accepts differences and self-differentiation. As such, the protégé has enough trust in the mentor to disagree or address conflict. A mentor may also be providing counseling by encouraging the protégé to talk openly, explore conflicts and personal concerns. As such, the mentor can be a sounding board and offer personal experience as alternative perspective, help resolve problems with feedback and active listening. He or she may also help protégés with three common challenges that often present themselves early in a protégé’s career, namely, issues of competence, how to relate to superiors, and issues of work/life balance. A mentor can also be a friend if the relationship develops to that level, and if both parties enjoy spending personal time together, beyond work. This function however could also indicate a transition phase in the mentoring relationship. However, being a boss and a friend can present issues of multiple relationships or boundaries discomfort. Similarly, in cross-gender mentoring relationships, anxiety may arise if the relationship becomes more personal due to potential scrutiny by others in the organization, or by possible physical attraction. Because of this, individuals may choose to maintain a comfortable distance in work relationships (Kram, 1988).

Kram further described four predictable phases in mentoring relationships. Initiation occurs when the relationship is started. This phase can be characterized by
strong positive emotions, and behaviors that encourage the development of the relationship. Initiation at this stage is likely balanced on both sides, and positive interaction suggests that the early fantasy about developing a positive relationship will turn into a real relationship. At this stage, fantasies about the relationship may be more powerful than the reality of it. The turning point may be when expectations start to be met and interaction may occur around work tasks. The cultivation phase is when the range of functions provided expands and the relationship strengthens. This is typically the longest phase of mentoring. Initial positive expectations about the relationship are put to the test and both parties must find satisfaction in the mutual exchange. Career functions are usually provided first, while psychosocial functions may be provided increasingly as the relationship develops. As the protégé becomes more confident in his or her skills, he or she may be more comfortable giving to the mentor and the mentor may then derive increasing satisfaction from engaging conversations. The range of functions provided varies by individuals and their level of interpersonal skills, and is influenced by developmental needs and tasks. As developmental needs change, functions provided may also change. At this stage, a mentoring relationship may stop providing benefits to one or both parties. For example, a woman interviewed by Kram (1988) related that she yearned to find a mentor she could identify with in ways she couldn’t with her male mentor: “He will get on my case, he will say I am a pussycat…but he just doesn't fully understand that women, just by being women, can’t do exactly the same things that a man will do” (Kram, 1988. p. 55). While a male mentor may initially provided strong career development related functions to a female protégé and be very supportive in these, he may not relate and be supportive when the protégé begins to tackle gender-related
challenges such as how to self-promote in the workplace and the mentor may interpret it as a weakness instead of a contextual barrier. When individual needs change, or organizational events such as promotions or transfers occur, the cultivation phase may end and move a mentoring relationship into the separation phase. While boundaries are clarified in the cultivation phase, leaving the uncertainty of what the relationship might be in the initiation phase, it can also lead to disappointment if developmental needs are unmet, or if a protégé, as in the example noted above, feels he or she needs a mentor to emulate more fully. Therefore, the separation phase occurs when the nature of the relationship changes due to structural or personal changes in one or both individuals, and the redefinition phase indicates that the relationship evolves into a new relationship, such as a peer relationship, or completely ends. The separation phase is characterized by significant changes and as such may involve loss. This loss can create anxiety, if, for example, a structural separation due to a promotion is untimely, leaving a mentee without support or guidance, and new areas of greater responsibilities. Coming to term with this loss is a main goal in this phase. A new form of the relationship may develop, presenting a relationship based on more equal footing, such as a friendship. This can begin as the stress of the separation decreases and more informal contact continues to provide mutual support. At this stage, typical mentoring functions are less evident but can continue through counseling or coaching. The excitement of the first two phases may also be replaced by gratitude and realism of the mentor’s contributions while the mentor may feel a sense of pride and accomplishment about passing on values, knowledge and skills. There may also be ambivalence in these new roles, for example, a protégé may wish the mentor was still viewed as all-knowing, and the mentor may fear being surpassed by his
protégé. As such, this phase can also be characterized by a negative turn of event. For example, if a mentor is suddenly limited in personal advancement and starts to resent a protégé who was promoted to a similar level as the mentor, he or she may struggle with feelings of abandonment, anger and resentment and may even block a protégé’s opportunity for further advancement. One can see how someone’s personal attitude regarding trust, intimacy, attachment, can all affect the way he/she receives or provides mentoring (Kram, 1988).

Application of Kram’s theoretical framework to higher education

Much research has confirmed Kram’s (1985) mentoring theoretical framework in both organizational and educational settings (Clark et al., 2000; Erdem & Ozen, 2003; Johnson et al., 2000; Rose, 2003; Schlosser & Gelso, 2001; Tenenbaum et al. 2001). In fact, Lentz and Allen (2007) state: “Kram’s framework is often adapted for the academic setting in the study of student-faculty mentoring relationships” (p. 160). The following examples illustrate their statement and confirm the presence of two types of functions and four distinct phases of mentoring, in both organizational and educational environments. For example, Sugimoto (2012) used Kram’s framework depicting her four distinct phases with a group of 200 doctoral advisors and advisees to help describe the doctoral education application of the model in several Library and Information Science programs. The author designed two questionnaires, one for advisees and one for advisors and questions were matched to Kram’s framework corresponding to the four phases of the relationship. For the initiation phase, questions were related to the formation of the relationship and included questions such as whether or not the process was mutual or cooperative, assigned or chosen by either the student or by the advisor. They found
different practices in different programs including a program that described a two-tier process where the student was initially assigned a primary advisor and then encouraged to find a secondary advisor to help with the process of dissertation, with the primary advisor remaining as the main administrative advisor throughout the students’ program. Interestingly, advisors were asked what advisees’ characteristics they considered important and 93 out of 111 indicated that students’ level of initiative was very important, with the 18 others indicating that it was somewhat important. Students’ personality (although not described) was marked as somewhat important by 71 faculty respondents. In regards to the initiation phase, the author concludes that unlike Kram (1985) who described an initiation phase where both parties come together with balanced initiative, she states that in the doctoral programs she found a much more “advisee-driven model, where the advisee is responsible for soliciting mentorship and the advisor serves in a passive initiation role—either accepting or declining the offer” (p. 110).

Focusing more on the types of functions provided, Lunsford (2012) surveyed 477 doctoral students at two research universities to determine the amount and type of mentoring provided by doctoral advisors. She found that type of mentoring provided was related to outcome. For example, she found that receiving career related mentoring was significantly associated with more publications, while receiving more psychosocial mentoring was significantly associated with satisfaction with advisor. However she also found that this was different depending on program type. For example, students in the ‘soft’ disciplines (humanities, social science, education) had the strongest publications, presentations and degree progress effects resulting from career mentoring. She suggested that perhaps this [career mentoring] is more impactful than in ‘hard’ sciences where
working in research teams is more normative. Noe (1988) was the first researcher to develop a mentoring scale designed to test Kram’s theory about two types of functions. He initially developed a 32-item scale based on career and psychosocial functions presented in the literature by Kram (1985) and others. Through an exploratory factor analysis he concluded that they were two interpretable factors with a total of 21 items that emerged. These two factors represented psychological mentoring functions and career functions, thereby confirming Kram’s theory about two types of functions, in his sample of educators. Later on, Paglis, Green, and Bauer (2006) confirmed the presence of two types of mentoring functions with a sample of doctoral students. The authors decided to utilize Kram’s framework, stating that it was not unreasonable to utilize industry mentoring research to inform academic mentoring between doctoral students and faculty. Using the scale that Noe (1988) developed based on Kram’s functions, and adding a third mentoring function that the author found necessary in academia “research collaboration,” they conducted a longitudinal study to evaluate the longer term effects of the three types of mentoring functions. Results indicated that collaborating mentoring with faculty predicted protégés research productivity, and psychosocial mentoring positively influenced research self-efficacy. While they found evidence of career mentoring functions provided, they found a high correlation between the two types of functions (career and psychosocial) and suggested that perhaps these functions were more intertwined in students-faculty relationships, something they indicated needed further investigation. While Kram’s model has provided a theoretical model that has been applied to higher education, it is not without limitations. The model is a framework and as such while it provides the concepts of types of functions provided and a linear
timeline, it does not explain by itself how mentoring relationship develop or what function specific outcomes result. Instead, it answers basic questions as to what functions are provided and what simple, linear timeline a relationship might follow. Although Kram and her associates (1985, 1988) suggest some ways in which these functions may affect individual protégés, for example suggesting that a protégé might develop stronger career commitment, the framework itself does not answer any ‘how’ or ‘why’ related hypotheses. In addition, because Kram’s model was developed with employees in a hierarchical organization where opportunities for advancement exist and are expected, the motivation for providing and receiving mentoring may be very different than in an educational environment where a student may still be merely ‘trying on’ the concept of a specific career (i.e. professor). Taking Kram’s framework and applying it to an educational environment may lead us to overlook some particular characteristics typical to education that may not exist in organizations. As Kram, herself, suggested, context is a key factor in mentoring relationships and academia presents a context that is often described as distinctive from other organizations (i.e. position of power, pressure to publish, independence, etc.; for a more complete description, see Sumprer & Walfish, 2001). For example, Rose (2005) conducted a study with graduate students in order to assess their concept of an ideal mentor. This study was based on three styles of mentoring assessed by the Ideal Mentor Scale (2003), a brief self-report instrument she developed based on Levinson’s (1978), Kram’s (1985) and Anderson and Shannon (1988) mentoring definitions and frameworks. Her scale included three subscales that roughly correspond to role modeling (integrity), psychosocial functions (relationship) and guidance (career). Her goal was to assess graduate students’ concept of the Ideal mentor
taking into account age, gender, citizenship, academic discipline and stage of persistence.
Stage of persistence is a concept that was developed by Tinto (1993) and that informs
that developmental process that doctoral students engage in as they pursue their degree.
The three distinct stages of doctoral persistence include, transition and adjustment,
attaining candidacy and completing the dissertation. While these stages seem generally
applicable across doctoral programs, some training requires additional practicum or
internship experiences, which could add a stage. Rose’s results demonstrated that
students’ concept of the ideal mentor did not change based on their stage of persistence,
or academic discipline however it varied by age, gender, and citizenship. She concluded
that graduate students’ individual differences appear to play a larger role in their concepts
of the ideal mentor. This study demonstrates the complexity of each mentoring
relationships, and illustrates the importance of considering a specific context.

Recently, Johnson (2014), in his chapter on mentoring in psychology training,
offered a **Mentoring Relationship Continuum Model**, to apply to all developmental
relationships that may evolve in psychology education and training. Johnson’s model
(2014) posit that as a developmental relationship moves from formal, hierarchical, and
mostly based on career functions or skill development and assessment (transactional), to
one that offers both career and psychosocial functions, increasing the reciprocity nature
of the relationship, it becomes more characteristic of a mentoring relationship
(transformational). This model is a good attempt to start adding to the simplicity of
Kram’s model that describes discrete category of relationship by attempting to provide a
character and quality description of mentoring relationships as they evolve from any
typical developmental relationship found in academia (advisor, supervisor, professor).
Adding an understanding of personality traits and how they influence the formation of mentoring relationship adds a dimension to Kram’s framework discrete element of initiation that attempts to answer “how” a protégé’s specific personality trait indirectly influence whether or not he/she benefits from mentoring through the initiation of a mentoring relationship with a potential faculty mentor.

In summary, Kram’s theoretical model has been shown to be applicable in various environment, including higher education (Clark et al., 2000; Cronan-Hillix et al., 1986; Waldeck, et al., 1997). However caution must be paid to its simplicity and as such it informs the need to integrate other theoretical concepts in our understanding of mentoring relationships, as well as particular attributes of a specific context. In addition, as stated by Waldeck et al. (1997), Kram’s framework does not identify specific communication skills, or behaviors and skills needed to engage the initiation of a mentoring relationship. As such, this study will attempt to understand how specific personality facets in protégés influence their initiation of mentoring with a faculty member. In doing so, Kram’s concept of distinct phases of the mentoring relationship, specifically the initiation phase is used to study the impact of specific personality facets. Moreover, in order to understand how the specific doctoral environment may influence students’ reported need for mentoring, or mentoring received, stage of persistence as presented by Tinto (1993), was measured by assessing students’ years in the program, as these may present different stages of development for doctoral students and affect their needs for mentoring.

Kram’s initiation stage between students and faculty

The initiation of mentoring between students and faculty is suggested to be a variable of interest for several reasons. First, Mullen (2007) suggest that most mentoring
between students and faculty is informal, meaning that it is not the result of an assigned process such as advising. Second, while advisors are typically assigned at the beginning of a program, mentors are not and while some advisors will develop into mentors, most mentoring appears to develop spontaneously and gradually. Third, without initiation, informal mentoring will not happen. Fourth, it appears students may be the ones initiating many of the existing mentoring relationships (Clark et al., 2000; Huwe & Johnson, 2003). Finally, it has also been suggested that informal mentoring appears to provide more positive outcomes than those that are assigned by a third party (Johnson, 2014).

At least one study has focused on learning about ways graduate students initiate mentoring relationships with faculty. Waldeck, Orrego, Plax and Kearney (1997) investigated mentoring relationships between graduate students and faculty, suggesting that graduate students need encouragement to initiate mentoring, especially as it might be intimidating to some. In their study, with 122 full-time graduate students attending a large western university, 49 students indicated having a mentor, a prevalence rate of about 40%. They reported more psychosocial functions than career functions and those mentored said they were satisfied with their mentoring relationship. The authors also provided an overall profile of a typical student-faculty mentoring relationship indicating most protégés were female students who had been in the program slightly over two years, 76% were White, 9% Latina, 4% African-American, 2% Asian-American, 11.7% other, 60% single, 37.4% married, 80% childless, 58% were writing a thesis or dissertation, 63% were teaching or research assistants, 18% were working on a doctorate. The faculty mentors were 56% male, 51% were full professors, 24% associate, 12.4% assistant, 9.7%
instructors. Their mean age was 46, 38% were advisors, 29% were teachers in their departments, nearly 90% were White, 3% African-American, 3% Latino, 8% other. Their investigation revealed ten communication strategies that graduate students used to attempt to initiate mentoring relationships with faculty. These strategies included: (1) ensure contact with target (20%), (2) search for similar interests (16%), (3) seek counsel from target (13%), (4) appeal to target directly (12%), (5) provide work assistance, as research or teaching assistant (12%), (6) present a competent self (9%), (7) assume it will “just happen” (7%), (8) concede control (6%), (9) venerate the target (4%), (10) disclose personal self (2%). Interestingly students rated those strategies as significantly less effective than would be expected by chance. This study highlights several implications for graduate students including the importance of initiation for the development of mentoring relationships between students and faculty and is worthy of further study. Implications include that we learn that stage of persistence, or year in program may be influential, as might the stage of a mentor’s career (full professor, more time and more experience?). We learn that students demonstrate proactive behaviors, apply several strategies to initiate the relationships, and this may indicate a level of comfort with social interaction. This study is limited however in that it does not explore any personality traits or facets directly.

This study however does suggest that students who demonstrate proactive behaviors attempt to initiate mentoring through various strategies that at first glance appear to result in mentoring. The first four strategies described are especially demonstrative of students’ proactive and deliberate behavior to initiate a relationship with a faculty member that the student has identified as a potential mentor. This demonstrates
the importance of students’ comfort with interpersonal skills in order to initiate mentoring relationships with faculty. In addition, while these communication strategies demonstrate students’ initiative, they also demonstrate a need for faculty members to be available and receptive.

Mentoring in Graduate Education

This section focuses on a specific form of mentoring relationships most commonly found in academia, relationships between students and faculty. The existing literature specific to mentoring relationships between students and faculty, as well as the benefits that have been revealed is reviewed. Second, the issue of ‘definitional vagueness’ that has affected the literature on mentoring between faculty and students, as it applies to the difference between advisors and mentors is presented, along with the prevalence of mentoring in graduate programs.

Significance and benefits.

There is no doubt that a student’s relationship with a faculty member is key to success in graduate school (Clark et al., 2000; Crisp & Cruz, 2009; Cronan-Hillix et al., 1986; Ehrich et al., 2004; Gelso, 1993; Hollingsworth & Fassinger, 2002; Jacobi, 1991; Johnson, 2015; Lechuga, 2011; Merriam, 1983; Tenenbaum et al., 2001; Trask, Marotz-Baden, Settles, Gentry, & Berke, 2009; Williams-Nickelson, 2009). Research on student-faculty mentoring relationships has shown that a satisfying graduate experience is often tied to a central relationship with a faculty member (Waldeck, Orrego, Plax, & Kearney, 1997) and that without it, “the graduate student’s road to an advanced degree becomes unnecessarily anxious and difficult” (Waldeck et al., 1997, p. 3). Nearly every article on mentoring in graduate education highlights the importance of mentoring between students
and faculty, along with its centrality to satisfaction and success. Barnett, Youngstrom and Smook (2002) suggest that mentoring between a student and faculty member has been shown to be the most important relationship for academic success. Merriam (1983), in her initial review of the literature, presented mentoring as one of the more intriguing and popular topic in several fields, and states, “In academic settings, learning experiences are central to the mentor-protégé relationship” (p. 167). Furthermore, she noted (p. 161) “If research shows that having a mentor or being a mentor is as crucial to success (however defined) as some have said, then it behooves educators to incorporate the mentoring relationship into planned interventions with adult clienteles (p. 161).” In one review of the literature (Ehrich, et.al., 2004), concur that overall both mentors and mentees reported mentoring as overwhelmingly positive, with 35.8% of reviewed education studies indicating only positive outcomes as a result of mentoring, versus only 2.5% reporting only problematic outcomes. Clark and colleagues (2000) surveyed nearly 800 recent clinical psychology doctorates and found that of the two third who were mentored, 91% reported their mentor relationship to be positive, and they were significantly more satisfied with their graduate education.

In addition to increased satisfaction with graduate programs, mentoring research on student-faculty relationships have found benefits related to research productivity, academic acculturation and professional identity, retention, time to completion, increased visibility and retention of women and minority students. Hollingsworth and Fassinger (2002) investigated the impact of mentoring on counseling psychology students’ research productivity. They surveyed 194 third and fourth year doctoral students enrolled in APA-approved counseling psychology programs and found the mentoring was a mediator
between research productivity and the research training environment suggesting its importance in the development of doctoral students as researchers. This study also underscored the importance of the environment in supporting research mentoring. Cronan-Hillix et al. (1986) in their research with 90 psychology graduate students also found a positive relationship between mentoring relationships and the number of publications authored, the number of first-authored publications, and the number of conference papers authored. Wright & Wright (1987) similarly suggested that having research collaborations with an established researcher is key to graduate success. They further suggest that an established faculty member who serves as a mentor can also help promote the protégé’s work as well as introduce young protégés to colleagues at professional conferences and hence help them develop networking abilities. This, the authors argue, helps young professionals to develop a professional identity in their new field. These efforts and the support offered through mentoring can in turn help the protégé’s self-image, self-esteem and self-efficacy. Similarly, a good mentor will help a protégé take intellectual risks without fearing rejection, helping the protégé’s emerging professional identity through support, promotion and encouragement, as well as constructive criticism (Wright & Wright, 1987).

In their presentation of a doctoral students’ mentoring program, Holley and Caldwell (2012) discuss the challenges of designing and implementing such a program. They start by reminding the readers that the nearly 50% attrition rate from doctoral programs’ is highly problematic and that mentoring relationships have been associated with higher retention. In addition they inform the reader that in 2010 the Council of graduate schools completed a study on Ph.D. completion and attrition and found
“mentoring [is] a cornerstone of the most effective and promising practices recognized by the Council of Graduate Schools’ Ph.D. Completion Project” (Holley & Caldwell, 2012, p. 244). Their research centered on qualitative interviews with program participants to understand their motivation and experiences of the program. They reported that an important finding was the importance of carefully selecting mentors. In addition, they suggested that race, gender, age, and similar individual characteristics were important determinants of the success of the relationship and that an important part of their program was the ongoing effort of an administrator who was aware of any problems between mentors and protégés and re-assigned individuals if unresolvable conflicts arose. Other components of their program included several events such as brown bag lunches on relevant topics (how to write a literature review, how to write a poster, how to present at conferences, etc.). They concluded by stating that creating a community on a large campus is challenging but that this sense of inclusiveness is important to students (Holley & Caldwell, 2012). Also in an attempt to highlight the importance of retention, Creighton et al. (2010) discuss how mentoring has been a central focus in institutions with high completion rates, especially with underrepresented students, indicating that 70% of graduating doctoral students reported having a mentoring relationship. The authors posit that these programs emphasized both the importance of “taking physical, economic, social and cultural environments into consideration, counseling staff members work to involve students in academic and extracurricular activities that integrate them into the campus community and promote personal wellbeing and success” (Creighton et al., 2010, p.42). They also emphasize the importance of training faculty, as mentoring is a complex process that requires knowledge and skills, as well as, planning and practice.
Finally, on an optimistic note, the authors conclude that evidence from recent concerns raised by faculty about the importance of improving mentoring for doctoral students, maybe the glimpse of the beginning of a paradigm shift.

Several researchers (Davis, 2008; Huwe & Johnson, 2003; Sedlacek, et al., 2007) have highlighted the importance of mentoring in issues of retention and diversity as related to the professoriate. They add that the number of minority faculty is extremely low (reported in 2003 by the National Center for Education Statistics, as 5% of all U.S. faculty are African-American) and that this impacts the retention of new students aspiring to enter the professoriate (Davis, 2008). An important benefit from mentoring may be related to academic acculturation, or socialization into the profession. Minority students may be impacted individually because of limited opportunities to interact with faculty, because of a perceived lack of belonging (Altbach, et.al, 2002) and as a result be at greater risk of dropping out. In these regards, mentoring can play a key role in the socialization of minority students during graduate training and entrance into the professoriate, by positively influencing students’ aspirations, but also providing a model to aspire to as a future faculty member, while simultaneously demystifying academic life. Davis (2008) makes another important point, which is, that with a ratio for 58:1 minority students to underrepresented faculty (Brown, Davis & McClendon, 1999), minority students cannot simply all be mentored by underrepresented faculty. While research findings on the importance of similarity between mentor and protégé are mixed (Huwe & Johnson, 2003), this is a perfect opportunity for faculty member to increase their cultural awareness and competence, another value embraced by our field (Winterowd, Adams, Miville & Mintz, 2009).
Focusing on female graduate students, Koro-Ljungberg and Hayes (2006), describe a qualitative study (using critical event analysis) framed in social constructivism, conducted with ten female graduate students to address women’s identity development through the construction of their relational selves. They described mentors as *transformers* that facilitated self-discovery through their mentoring relationship with a faculty member. They also described the mentoring relationship as co-constructed and affected by personality, abilities, needs of both parties, situational and environmental context as well as roles provided. Perhaps the most powerful engagement they described is the involvement of dialogue they share with a mentor through narratives ultimately inviting acceptance and transformation stating, “the direction of self-reflexivity, a critical questioning of one’s own beliefs and positions, and the co-construction of a new reality that supports and welcomes the participation of both” (Koro-Ljungberg & Hayes, 2006, p. 393). This speaks strongly to the importance of multicultural skills as well as openness, skills that have been associated with successful mentoring.

At least three meta-analytic studies of mentoring in education contexts have been published (Ehrich et al., 2004; Crisp & Cruz, 2009; Eby, Allen, Hoffman, Baranik, Sauer, Baldwin, Morrison, Kinkade, Maher, Curtis & Evans, 2013). Ehrich et al. (2004) provide us with the most frequently cited benefits for protégés described by psychosocial functions, including support, empathy, encouragement, counseling and friendship. Second, protégés reported benefits associated with more practical functions such as teaching strategies, subject knowledge and resources, thereby closely related to Kram’s career development related functions. Third, benefits related to contact with others, such as discussions, sharing ideas, discussing problems and getting advice were noted and last
were benefits related to getting feedback, both as positive reinforcement and as constructive criticism. Overall, they indicated that the benefits of mentoring, reported in education contexts, greatly outnumber their costs (Ehrich et al., 2004). Crisp & Cruz (2009) reviewed 19 quantitative studies and although their paper was highly focused on discussing the methodological limitations of the studies they reviewed, they did report that benefits associated with mentoring included increase in self-efficacy, empathy, encouragement, and role modeling. Eby et al. (2013) study was inter-disciplinary and examined antecedents, correlates and consequences of perceptions of mentoring. Of importance to the academic environment, they noted that deep-level similarity was highlighted frequently in this environment perhaps due to the fact that mentoring relationships in academia tend to last longer, may involve identity development, and mentors are still disproportionally male and white (Eby et al., 2013). Interestingly, in all three meta-analyses, as well as in many of the studies cited previously, the importance of psychosocial functions provided through mentoring are highlighted consistently and may in fact indicate the differentiating factor between mentoring and other similar development relationships (Campbell, 2007; Johnson, Rose, & Schlosser, 2007; Muller, 2007; Johnson, 2007).

Mentor benefits.

While much of the research on mentoring in education has focused on protégés’ benefits, mentors have reported benefits as well. In their review of formal mentoring programs in education, Ehrich et al. (2004) reported that reflection was the most often cited benefit from mentors. Reflection is often mentioned in our field as an ability to reflect on one’s learning as well as enabling one’s ability to change and improve
professional practice and beliefs. Reflecting one’s biases and beliefs is a key competence in developing multicultural counseling skills (Winterowd et al., 2009) and, as suggested by their finding, it may be that mentoring relationships (especially with someone who might hold different values or beliefs) may be an optimal opportunity for mentors to reflect. Other reported benefits for mentors include increased confidence, personal fulfillment and vicarious satisfaction through seeing a protégé’s accomplishments, as well as possible increase of status in organization by having mentored successful protégés (Cronan-Hillix et al., 1986; Johnson, 2007). New professionals can also help mentors with a renewed sense of purpose and career energy. Mentors can learn from mentees who may be more up to date on a specific topic’s research literature and staying on the cutting edge of their field (Johnson, 2007). Mentees who are encouraged to take intellectual risks and feel supported and secure may also be able to provide mentors with new research ideas (Wright & Wright, 1987). Working on collaborative projects with protégés may also help mentors increase their own productivity, especially if they become accountable to them. Finally benefits to organizations included increased productivity, motivation and better services provided (Murray & Owen, 1991). In educational studies, overall organizational positive outcomes cited included improved grades, attendance and behavior of students (Ehrich et al. 2004) as well as more committed alumni, lower attrition, and increased prestige (Johnson, 2007).

In the next section a methodological flaw that has been discussed extensively in the mentoring literature in higher education is discussed in more depth. The need to distinguish between advisors and mentors has been mentioned in numerous studies (Johnson, 2007; Mullen, 2007; Sedlacek et al., 2007). The two terms do not represent the
same construct and through their undistinguished use may be contributing to the debate around prevalence rate.

Advisor or mentor?

The issue of definitional vagueness (Jacobi, 1991) described in the definition section above is of particular importance in higher education and many have referred to a specific need to distinguish between an advisor and a mentor (Creighton et al, 2010; Johnson, 2007; Johnson, Rose, & Schlosser, 2007; Mullen, 2007). In fact, in several studies, advisors and mentors have been poorly defined, purposefully not defined, or used interchangeably making it difficult to generalize any findings (Cronan-Hillix et al, 2001; Erkut & Mokros, 1984; Tenenbaum et al., 2001). For example, Erkut & Mokros (1984) asked a sample of students to think about the professors they knew, and to identify the one that, by demonstrating commitments, skills and qualities that the student aspired to, had the greatest impact on them. Their objective was to study students’ sex-related patterns in *modeling mentoring*. While they defined both mentoring and role modeling, they attempted to explain why both needed to be considered and use both terms interchangeably throughout their paper. Similarly, Tenenbaum, et al. (2001) present results of a study they conducted with 189 graduate students titled “Mentoring relationships in graduate school” and yet throughout the paper (including the abstract) they asked students to rate functions provided by their primary advisor. In fact, they use both terms interchangeably throughout the paper, and to add confusion, they also use the term role models without providing a definition for any of the three terms.

In addition to confusion between the terms advisor and mentor, others have described mentoring in additional developmental relationship terms. For example, Stone
(1999) defined mentoring in traditional supervisory terms and Mertz (2004) in her review of the mentoring literature suggested that because of the propensity of various functions presented as equaling mentoring, one could be led to believe that every supportive relationship is indeed mentoring. Since an advising relationship between a faculty member and a student is fundamentally developmental, one can see how in this context, an advisor could be labeled as a mentor.

Advisors have been shown to be a key person in the dissertation process and perhaps even the most important person in a graduate student’s success in graduate school (Gelso & Lent, 1997; Knox, Burkeard, Janecek, Pruitt, Fuller, & Hill, 2011), although it is unclear if all the studies that this finding refers to, were referring to advisors or mentors. Many have pointed to the need to differentiate the advisor role from the mentor role (Campbell, 2007; Creighton et al., 2010; Johnson, 2007; Mullen, 2007). As such, advisors are typically assigned roles and are usually assigned to all new graduate students. An advisor’s main role is typically to guide a student through their academic program, ensuring they take the right classes, and make adequate progress. They may also provide a link to the larger faculty (Weil, 2001). This role requires some intent and attentiveness to students’ academic needs. While a mentor may help guide a student through the academic program, a mentoring relationship while also developmental in nature, provides a student with both career related functions (such as guidance, teaching, coaching), as well as psychosocial functions (such as support, encouragement, etc.), and neither might be offered by an advisor. It has even been suggested that advising, at least as the “programmatic” function in a student’s first year, could be delegated to non-faculty members (Creighton et al., 2010). The importance of distinguishing between the advisor
and mentor roles (Creighton et al., 2010; add) and other developmental roles, is especially crucial in research studies where participants are asked to rate the relationships between students and faculty based on a specific construct. Similarly, Schlosser, and Gelso (2001) state that while a positive relationship with an advisor may become a mentoring relationship, the two are not synonymous. While mentoring is typically (although not always, as will be discussed in the following section on barriers) described as a positive relationship, an advising relationship may be negative, positive, or neutral. They define mentoring relationships as dynamic, reciprocal, personal relationships with an experienced faculty member who provides guidance, role-modeling, teaching and sponsoring of less experienced students and as such the faculty member provides a range of functions in the context of an increasingly closer and reciprocal relationship. As we can infer from their definitions, while a mentor functions as a role model, and may or may not be an official advisor, mentoring includes intentional and generative career development and psychosocial functions. Indeed, their definition of mentoring is in line with Kram’s (1985). A role-model, another function that has been presented as relating to mentoring, is defined as “a cognitive construction based on the attributes of people in social roles an individual perceives to be similar to him or herself to some extent and desires to increase perceived similarity by emulating those attributes” (Gibson, 2004, p. 136). Therefore while a role model may display specific techniques, skills, career commitment, and professional behaviors, the author suggests that it does not require a relationship, and a faculty member may not even be aware that he or she is a role model to a particular student.
Finally, while there might be confusion in the literature between advising and mentoring, as well as perhaps an assumption that most students have mentors, graduate students themselves seem to be able to distinguish between advisors and mentors. Paludi, Waite, Roberson, & Jones (1988) surveyed 46 female graduate students at a Midwestern university and found that they differentiated mentoring relationships by indicating that mentors were supportive and caring, and therefore provided psychosocial functions, and that unlike role modeling, mentoring relationships tended to last longer and involve career advancement. Rose (2005) also assessed graduate students’ definition of mentoring. She developed the Ideal Mentor Scale (IMS) to assess students’ conceptualizations of mentoring. The IMS (Rose, 2003) is a brief self-report instrument based on Levinson’s theory of adult development and encompasses three subscales. These include the integrity scale (presents virtues and principles actions that can be emulated), the guidance scale (provides practical assistance) and the relationship scale (describes a mentor’s personal relationship and sharing of more personal concerns). The scales also appear closely related to Kram’s functions of role modeling, career development, and psychosocial functions. In her study with 537 doctoral students, Rose (2005) found that their conceptualizations of the ideal mentor did not differ by academic discipline or stage of persistence (Tinto, 1993) indicating that graduate students have a stable understanding of the ideal mentor. Overall the students rated all three functions as important in a mentoring relationship.

This role confusion between advisors and mentors may be related to the belief that mentoring is more prevalent than it has been reported in graduate programs (Mullen, 2007). If all students are assigned an advisor in graduate school, and with role confusion
some believe that an advisor is a mentor, then the perception might be that most students have a mentor. Although the true prevalence is unknown, this is discussed in more details in the following section. Perhaps a more useful way to distinguish these developmental relationships is to think of them on a continuum model. In a recent chapter on *Mentoring in Psychology Education and Training*, Johnson (2014), proposed a mentoring relationship continuum model (MRC) to help clarify the construct. The MRC presents a continuum applicable to various developmental relationships (advisors, supervisors, clinical supervisors, etc.). The model can be used for both, formal or informal relationships, a term that only refers to the way the developmental relationship was initiated. Relationships evolve from left to right and indicate increasing qualities (hence the continuum model) such as increased reciprocity, increasing psychosocial functions, intentional role-modeling, safety and increasing intimacy, identity transformation, a connection beyond formal role assignment (Johnson, 2007; Kram, 1985; Wright & Wright, 1987). Similarly, the relationship shifts from being primarily transactional in nature to being more transformational (Johnson, 2014). The author reminds us that it is important to understand that this is a gradual shift and that not all developmental relationships develop into mentoring relationships, as discussed in the next section.

**Prevalence of mentoring between graduate students and faculty**

As stated by Mullen (2007) “…we simply do not know the extent that graduate students derive benefits from their informal mentoring relationships, since situations vary and the research is conflicting…faculty delivery of the holistic mentoring model is less common than might be expected” (p. 134). While many institutions of higher education
claim the benefits of mentoring and presume that students benefit greatly from mentoring relationships (Johnson, Rose, & Schlosser, 2007), there seems to be an assumption that an advisor or dissertation chair is frequently fulfilling that role. It has also been suggested (Weil 2001) that graduate programs have an ethical obligation to provide mentoring to their students. And while most programs report that they provide mentoring (Campbell, 2007), only about 50% of graduate students report being mentored by a faculty mentor. The true prevalence is unknown (Huwe & Johnson, 2003) and may be further confused by the lack of clarity in definitions, as discussed in the previous section. The finding that mentoring in higher education isn’t as prevalent as we might think goes back several decades. In Seasons of a Man’s life, Levinson (1978) states: “Our system of higher education, though officially committed to fostering the intellectual and personal development of students, provides mentoring that is generally limited in quantity and poor in quality” (p. 334). Similarly, Johnson et al., (2007) reviewed theoretical issues and methodological approaches used in mentoring research that focused on students and faculty. In it, they indicate that although it may be assumed than an advisor or dissertation chair is a mentor for a graduate student, in a number of research studies, only 50-70% of doctoral students report being mentored by a faculty member. For example, Clark et al., (2000) surveyed 787 APA members to better understand mentoring relationships in clinical psychology programs. Sixty-six percent of participants reported having a mentor. The authors also inquired about the reason, unmentored respondents believed they were not mentored. Thirty-two percent responded that faculty had no time and thirty percent reported that mentoring was neither provided nor encouraged. Although they do not report whether or not these respondents wished they had been
mentored, others (Cronan-Hillix et al., 1986) reported that many students who desire mentoring in graduate school do not obtain it. In their study with psychology graduate students, Cronan-Hillix et al. (1986) found a prevalence rate of slightly over 50%. Of importance, they noted that most students (71%) who reported being mentored were describing a relationship with a male faculty member who had attained full professorship. This may be indicative of environmental or personal barriers such as lack of time in the career trajectory of a junior faculty member, or lack of interpersonal skills or mentoring self-efficacy. Such barriers to mentoring will be discussed in the next section.

Finally, prevalence of mentoring in graduate students has been reported to be similar between male and female students but perhaps slightly higher with minority students (Johnson, 2014). As noted earlier, women and minority graduate students were reported to often be specific groups of students targeted in formal mentoring programs. However, in her research with 55 graduate women students, Williams-Nickelson (2009) found that many of them did not have mentors and felt overwhelmingly that there were a lack of mentors and role models in the field.

In conclusion, while mentoring of graduate students has been associated with numerous benefits, its true prevalence is unknown but seems to fall somewhere between 50 and 70 percent. It seems clear that many questions arise regarding the barriers that keep nearly half of graduate students unmentored and the next section will explore some of the barriers that have been discussed in the mentoring literature. Moreover, despite evidence that mentoring is linked to many positive outcomes in higher education, a look into our field’s main handbook (Brown, & Lent, 2008) reveals that mentoring is not listed
in the subject index, despite the fact that both editors have vested interest in career development.

Barriers to Mentoring

Not all mentoring leads to positive outcomes. Long (1997) identified several negative influences on mentoring relationships such as lack of time, poor planning, poor matching and lack of access to mentors. She added: “under various conditions, the mentoring relationship can actually be detrimental to the mentor, the mentee or both” (p. 115). Several barriers to the formation, or the optimal development of mentoring relationships have also been identified in the literature. These can be classified in two main categories, environmental, or individual. Even when opportunities to form mentoring relationships are readily available, the development of such relationships is rarely easy due to its complexity. Not unlike other relationships, positive mentoring relationships take time to develop as well as planning and hard work. Research, as described throughout this paper, has demonstrated that mentoring is a complex construct that has been difficult to consistently define, perhaps due to this complexity and its continuously evolving nature.

Environmental barriers that have been discussed in the literature include lack of organizational support, being in a competitive environment, a lack of reward system, a lack of role models, lack of time, lack of training, poor matching, limited resources, an environment where cross-gender relationships are placed under scrutiny, a highly hierarchical structure, negative attitudes towards mentoring (maybe viewed as an unfair advantage to some), lack of trust and openness in the organization, and unequal power distribution. Personal barriers can include lack of interpersonal skills, negative help-
seeking attitudes, individual cultural orientation, acculturation challenges, personality factors, personality mismatch, attachment attitudes, and lack of specific role models (Schlosser, & Foley, 2008). The list of barriers is long and the research is just beginning to tackle specific influences such as individual personality traits.

Ehrich et al. (2004) identified barriers that can exist at the organizational level including, lack of support, difficulties planning programs, costs and limited resources. Kram (1988) suggested that the power of contextual constraints cannot be underscored and that supportive behavior may be discouraged in environments that are competitive and results oriented. She states: “The unequal distribution of power in the hierarchical structure interferes with the formation of supportive relationships by creating the belief that initiating relationships with higher level managers is in violation of organizational norms.” This may be particularly relevant in higher education. In their book chapter titled “The Politics of Graduate Programs,” Sumprer, and Walfish (2001) indicate that most students enter graduate school with some idealism that is quickly balanced with the reality of the environment and its politics (defined as “those intangible factors, interpersonal likes and dislikes, that may impede the future psychologist’s development and the attainment of an advanced degree” p. 78). They quote a statement by Mahoney (1976): “Graduate life is seldom a bed of roses. It is more often imbued with confusion, anxiety, and a paranoia, which is occasionally reinforced by the quirks and injustices of the mysterious ‘system’” (p. 41). While they emphasize that not all programs are political in nature, or that they negatively impact students, they suggest this is the exception rather than the rule, and they offer strategies to navigate these challenges. They add that these are important learning opportunities as most work environments that graduate students
are likely to encounter later on in their careers, will also be political. They suggest that it is important for graduate students to understand that they have limited power (defined as “the ability to act or affect something” Sumprer & Walfish, 2001, p.43). They conclude their conceptualizations of politics and power in the graduate school environment by quoting a professor telling a student, “Mr. Smith, when we want your opinion, I’ll tell you what it is,” (p. 45) however reminding the reader that it is important to keep in mind that not all power is bad and that in fact it can be helpful to trainees (Sumprer, & Walfish, 2001).

Individual and cultural differences, such as power distance orientation, may also dictate one’s level of comfort with boundaries and various level of closeness. For example, Cox, Yang, and Dicke-Bohmann (2014) suggested that cultural orientation might moderate a protégé’s desire for specific mentoring functions. They suggest that power distance orientation, defined by Hofstede, (2001), as the degree to which less powerful members of society accept and expect that power is distributed unequally, is an example of such a cultural orientation. As such, people with high power distance orientation accept a hierarchical order in which everybody has a place without further questioning. This orientation may, for example, predict whether a student is comfortable contacting a professor by email instead of in person (Richardson, & Smith, 2007). Similarly, students who endorse a high power distance orientation may be uncomfortable with psychosocial functions provided by a faculty member, as these would reduce their psychological distance. As a reference point, on their scale ranging form 0-120, the United States stands at a power distance index of 40, while China’s power distance index is 80. Koro-Ljungberg & Hayes (2006) conducted a qualitative study with 10 female
graduate students that may illustrate such a cultural difference. One of the ten students, a foreign student, indicated that the stages of mentoring were part of her narrative structure and that she felt the initiation stage was an invitation stage, stating “It felt like as a student in the one-down position, I need to be invited into that relationship.” Therefore, while it appears that more psychosocial functions are associated with more effective mentoring, cultural expectations are likely to moderate this relationship, and may therefore also influence who gets mentored. Similarly, Liang, Tracy, Taylor, and Williams (2002) suggested that understanding how mentoring relationships are affected by cross-cultural differences is an area of research that needs further exploration. For example, they state that for Asian-American students, the value of emotional restriction may prevent them from having close relationships with authority figures, such as a faculty member. Issues of boundaries may also influence mentoring relationships. Perhaps not unlike boundaries between a therapist and a client, it may be difficult to determine “the right amount of distance versus closeness [the clinician] should maintain” (Speight, 2012, p. 138). Mentoring relationships between students and faculty may also present issues of multiple relationships, potentially presenting challenges with managing the discomfort often inherent is those situations (Campbell, 2007).

As described earlier in this paper, it has been suggested (Johnson, 2014) that as a developmental relationship moves on the continuum from left to right, intimacy increases as does reciprocity and commitment. This can be affected by either environmental or personal factors. For example, Kram (1988) suggested that an organization that emphasizes bottom-line results and competition, or that the organizational culture is such that it presents a lack of trust and openness, is less likely to result in collaborative efforts
or enhancing relationships with peers or potential mentors. Therefore a low trust environment is unlikely to support intimate mentoring relationships. Similarly, poor interpersonal skills may not be conducive to close mentoring relationships. As stated by Johnson et al. (2004), although their focus is on transformational supervisors, it is not surprising to find that supervisees are attracted to professors and supervisors with strong interpersonal skills. Having poor multicultural skills have also been presented as a barrier to positive mentoring relationships (Koro-Ljungberg & Hayes, 2006) and some (Wedding McCartney & Currey, 2009) have offered strategies, such as understanding cultural backgrounds and expectations, to help with mentoring international students as well as exemplar mentoring programs (Ku, Lahman, Yeh, & Cheng, 2008).

Cross-gender relationships may also be problematic due to either environmental or individual barriers, such as perceptions or experiences of sexuality and intimacy (Fagenson, 1989). For example, Fagenson (1989) suggested that a female protégé approaching a male mentor may be viewed as a sexual advance, or that a male mentor, with more perceived power, may be feared because of real or imagined sexual harassment concerns. One can see how prior experiences with intimate relationships could influence level or trust, and comfort (or lack of) with increasing intimacy that may be present in a mentoring relationship. Similarly, it has been suggested that individuals’ attachment style may also influence mentoring relationships (Goldner & Scharf, 2014).

Many have reported that a significant barrier to mentoring relationships is the lack of available role models. Kram’s original study (1985) involved extensive interviews with junior and senior managers pairs identified by personnel. In her initial 18 pairs, only one of the senior managers was female and none of the male managers were able to
identify female senior managers as their mentors. While this might look different today, women are still underrepresented across organizations (Hamerstone & Musser Hough, 2013) and academia (Williams-Nickelson, 2009). For example, Williams-Nickelson’s (2009) research with women doctoral students suggested that existing barriers to positive mentoring relationships included a lack of female role models and knowledge about how to address issues unique to women. Tenure-track minority faculty are also underrepresented, and as such the number of minority role models for minority graduate students is also low (Lechuga, 2011). While outcome research on cross.gender and minority mentoring relationships has found both benefits and barriers, it has recently been suggested that role modeling may be one of the strongest predictor of mentoring outcomes (Dickson et al., 2014). As such, a lack of role models in academia may be a larger barrier than previously reported.

Time has been presented as another significant barrier in mentoring. For example, in their survey with 787 APA members (Clark et al., 2000), 32% of unmentored individuals reported that faculty members had no time to mentor. Similarly, in their meta-analytic review of formal mentoring programs in education, Ehrich et al. (2004) reported that lack of time was the most often cited problematic mentee and mentor outcomes. This could be directly linked back to environmental support in that demands placed on faculty such as research productivity, teaching load, service, advising and others, make it very challenging to keep productive, and maintain a work/life balance. It is therefore understandable that without a reward system in place, it may be difficult for faculty members to dedicate much time to mentoring relationships. In fact, Mullen (2007) stated “Without the necessary support…, faculty carry out this [mentoring]
mission relying solely (or mostly) on the intrinsic rewards of doing so” (p. 135). A reduced teaching load, incentives such as a monetary bonus, as well as promotional systems, are examples of rewards that might encourage those willing to mentor students to spend more time in that capacity. Therefore encouragement in the form of rewards and training (Johnson & Andersen, 2015) may be key to promote a culture of mentoring in academia (Creighton et al, 2010; Dickson et al., 2014; Hollingsworth & Fassinger, 2002).

Individual factors and personality have been subjected to research inquiries, as well as suggested as variables targeted for future investigations, as possible correlates to benefits and barriers to mentoring relationships (Bozionelos, 2004; Bozionelos & Bozionelos, 2010; Campbell, 2007; Clark et al., 2000; Cronan-Hillix et al., 1986; Ehrich et al. 2004; Green & Bauer, 1995; Johnson & Huwe, 2003; Koro-Ljungberg & Hayes, 2006; O’Neil & Wrightsman, 2001). For example, Ehrich et al. (2004) cited support, empathy, encouragement, counseling and friendship as the most frequently cited positive mentoring outcomes for mentoring. It is clear that strong interpersonal skills would be needed to provide those functions. Similarly, (Campbell, 2007) reported that desirable qualities in mentors included warmth, strong communication skills, empathy, and self-awareness. In terms of cited negative mentoring outcomes, Ehrich et al. (2004) noted that the two most frequently cited problems related to mentoring in education were lack of time and personality mismatch, as well as barriers in help-seeking attitudes (specific to medical studies). Schlosser and Kahn (2007), wrote extensively about advisors-students relationships and stated: “we were surprised to find that the similarity of advisor and advisee interests in science and practice did not have relevance for the quality of the advisory relationship or the advisor’s attitudes about advising the student,” suggesting
that something else contributes to this quality. This finding led them to suggest questions such as “Perhaps it is true that advisors who are high in a general “nice person” factor are the ones [for whom] …practice interest similarity does not matter vis-a-vis advising?” (p. 216). This might suggest that a specific personality trait such as agreeableness (a dimension of interpersonal tendencies, Costa & McCrea, 1992) might be an important determinant of faculty-student relationships. Similarly, others (Green & Bauer, 1995) indicated that perhaps specific personality traits might be influential as well and that, for example, having a positive interpersonal orientation, as reflected by high level of agreeableness, extraversion, and emotional stability may influence protégés desire for mentoring, or attempts to initiate mentoring, as well as likeliness to be approached by potential mentors (Turban & Lee, 2007). A few studies have addressed personality factors, reflecting a positive interpersonal orientation, with mentoring. For example, Turban and Dougherty found that high emotional stability did influence mentoring received, mediated by a protégé’s initiation of mentoring. Similarly, Bozionelos and Bozionelos (2010) found a positive correlation between protégés who displayed high level of openness and agreeableness and mentoring received as reported by those protégés.

In summary, many environmental and individual barriers to positive mentoring relationships have been identified. Understanding how a particular organizational structure and norms is either enhancing or preventing mentoring from happening may be a good place to start addressing environmental barriers (Kram, 1988). In terms of personal factors, many have called for more research in personality to further understand and advance mentoring theories (Campbell & Campbell, 2007; Green & Bauer, 1995;
Turban & Lee, 2007). While a few studies have been conducted in business settings to address the questions about the influence of FFM personality traits on the initiation of mentoring and mentoring received, none have explored these in a population of doctoral students in social science programs. This study addresses this gap by focusing on specific facets of five factor personality traits and their potential influence on doctoral students’ initiation of mentoring. Personality is introduced in the next section, followed by an introduction to the five-factor model and its personality traits and facets. The few studies that have focused specifically on these personality traits (or related characteristics) and mentoring are also reviewed.

Personality

Many have suggested that personality traits of both mentors and protégés are important factors in mentoring relationships (Campbell & Campbell, 2007; Green & Bauer, 1995; Turban & Lee, 2007). Studies on mentoring research have explored the influence of personal characteristics such as gender (Kao, Rogers, Spitzmueller, Lin, & Lin, 2014), ethnicity (Sedlacek et al., 2007) and specific personality traits in mentors and protégés (Bozionelos, 2004; Waters, 2004; Arora & Rangnekar, 2015), and more specifically on mentoring received. Many continue to advocate for research in this area (Turban & Lee, 2007; Lechuga, 2011; Bozionelos & Bozionelos, 2010). Specifically, Wamberg, Welsh, & Hezlett (2003), stated, “it is striking that mentoring research has not examined current models of personality such as the five-factor model of personality” (as quoted in Turban & Lee, 2007). Although at least two studies (Bozionelos 2004; Bozionelos & Bozionelos, 2010) have now explored the FFM of personality and mentoring, since Wanberg et al. (2003) noted that specific need. However, no one has
studied the influence of specific facets of the five factors of personality on mentoring received in a higher education environment.

Personality is defined as “individual differences in characteristics patterns of thinking, feeling and behaving.” The study of personality focuses on two broad areas: One is about understanding individual differences in particular personality characteristics, such as sociability or irritability. The other is understanding how the various parts of a person come together as a whole” (retrieved from www.apa.org/topics/personality/). While theorists like Freud, Jung, and Rogers have been able to influence the field by making inferences about personality structure, most researchers are now interested in individual differences in personality traits (McCrae, 2005). Personality traits are “relatively enduring individual differences in the tendency to behave, think, and feel in certain ways” (Denissen, van Aken, & Roberts, 2011, p. 78). Personality traits typically have the following characteristics: 1) they are dimensions of individual differences (can be low, high, or average); 2) they are tendencies, not determinants (of behavior); 3) they form consistent patterns (do not change from day to day); 4) and they are pervasive in thoughts, feelings and actions (McCrae, 2005, p. 194). Personality research has increased dramatically in the last few decades, especially since personality traits were found to not only be enduring, but also to affect real-life outcomes (Denissen et al., 2011). For example, Ozer, & Benet-Martinez (2006) found associations between subjective well-being (SWB) related to neuroticism and extraversion, with those with low neuroticism and high extraversion interpreting events and situation more positively. One of the most important finding of personality research is that personality has consequences. Personality is related to interpersonal outcomes. For example, as stated by Ozer and
Benet-Martinez (2006), establishing and maintaining relationships is one of the most important tasks individuals must do and this is shaped by individuals’ dispositions and skills. Extraversion, agreeableness, and emotional regulation are the three personality traits that have been most often linked to successful relationships and these are all predicted by low neuroticism.

The “standard” procedure to develop a personality structure has been through lexical studies evolving in natural language. This involves the analysis of personality descriptive terms selected by objective criteria (i.e. frequency of use, familiarity and utility of description). Many of these studies have been replicated in many languages and found to hold well across cultures (McCrae & Costa, 1997). One of the most popular personality structures to come out of these studies is the five-factor model (FFM). The Five-Factor model known today emerged after 40 years of research sparked when it was suggested by Klages, 1926 and Baumgarten, 1933 (as reported by Digman, 1990) that a taxonomy for personality attributes would help understand human personality. Cattell’s system, perhaps the earliest model available, was a complex one, with 16 primary factors and eight second-order factors. Efforts to duplicate Cattell’s findings led Fiske (1949) to a five-factor solution through factor analytical studies. Several other independent investigators came to the same conclusion, namely that personality could be described by five superordinate traits. Nevertheless, psychology was slow to accept and adopt the trait theory, focused instead of behaviorism and other social issues of the time (Digman, 1990). Today, the FFM describes five broad dimensions of personality, including, Neuroticism, Extraversion, Openness, Conscientiousness, and Agreeableness, and is accepted widely. Although initially developed to describe adult personality, the FFM has
been shown to describe adolescents as well (Denissen et al., 2011). While personality has been shown to be more fluid in adolescents and young adults, it has been shown to be highly stable over adulthood, in both men and women. In addition, even dramatic life experiences such as a health crisis, marriage, or divorce have been shown to have little or no impact on the overall stability of personality traits (McCrae, 2005). Controversy exists regarding the genetic attribution of traits in the FFM. While twin studies indicate that genes have a strong influence on trait level variations, this still leaves a large amount of variance unaccounted for. Similarly, it is important to know that personality traits are different from concrete characteristics adaptations, which help influence behaviors through external influences. For example, for an introvert, some characteristics adaptations such as self-knowledge and social skills will interact with an external influence such as an invitation to the large wedding of an acquaintance or a friend. With this external influence, if a specific aspect of one’s self-concept is that he/she finds large social gatherings unpleasant, the introvert may have a long list of excuses ready for this type of external influences (McCrae, 2005). Alternatively, if the person getting married is a close family member, the person’s self-knowledge and social skills may produce a very different outcome, in interaction with this external influence (e.g. knowing he/she will be sitting at a table with close relatives). So while basic tendencies (N,E,O,A,C) are based in biological bases, behaviors results from interactions of basic tendencies and external influences. In fact, in their longitudinal study of 168 twins, Kandler, Bleidorn, Angleitner, Riemann and Spinath (2009), indicated that, extraversion and openness, were mostly influenced by the environment. Therefore, in this study, the behaviors of initiating mentoring relationships may be considered a characteristic adaptation and will
be a result of interactions between the basic tendencies measured, and external influences such as availability of faculty, program culture, and perhaps career awareness (meaning how much a student understands what is needed to succeed in their new field such as networking). These external influences may not all be readily available to measure, nor the list complete as individuals may respond differently to various influences, but some can be addressed in an introductory questionnaire, as well as a follow-up study.

Additionally, characteristic adaptations are also influenced by internal attitudes and are culturally conditioned, therefore if one’s attitude towards authority is negative, this may influence one’s decision to initiate a mentoring relationship with someone in authority such as a faculty member.

In terms of gender and personality, Lippa (2010) summarized data from two meta-analyses and three cross-cultural studies and found small to moderate differences in agreeableness and neuroticism. Women were slightly higher on both traits. In regards to personal aspirations, Rottinghaus, Lindley, Green, & Borgen (2002) found that students who aspired to higher level of educational aspirations had higher openness. Finally, in their review of the literature on personality and vocational behavior, Tokar, Fischer, & Subich (1998) found several FFM traits to be moderately related to vocational interests. Not surprisingly, extraversion correlated to enterprising and social interests, openness correlated to artistic and investigative interests; conscientiousness was moderately related to conventional interest and agreeableness was positively related to social interests.

The NEO Personality Inventory is used to assess the basic dimensions of the FFM and has become the most widely used instrument in the last few decades (Costa, & McCrae, 1992). Several researchers have provided evidence for cross-cultural
generalizability of the FFM (Yang, 2010; McCrae, Costa, & Yik, 1996; McCrae, & Costa, 1997). The Neuroticism, Extraversion, Openness Personality Inventory (NEO-PI, Costa & McCrae 1985) was an inventory developed specifically tailored to those factors. The revised instrument, the NEO-PI-R (Costa & McCrae, 1992) is one of the most widely used instruments in personality research (assessing the FFM traits specifically) to date. While most personality researchers have accepted the model, some continue to argue refinements, such as the possibility of a sixth factor (Ashton & Lee, 2008), suggesting that a six-factor model provides the most parsimonious and comprehensive taxonomy of personality (Ashton & Lee, 2001). They argue that a sixth factor found in many cultures, honesty/humility, provides a sufficiently independent separate factor that adds unique variance to the structure that is not explained through the five-factor model. However, the extraversion-introversion factor is fairly similar across both instruments, and since extraversion/introversion was one of the main trait of interest in this study, the FFM was the model used. Overall, validity research of the FFM has demonstrated good structural replicability, comprehensiveness, generalizability and robustness (Tokar et al., 1998).

The 240-item questionnaire (NEO-PI-R, Costa & McCrae, 1992) measures the FFM traits and six primary facets for each trait. The five factors and their facets as described in the professional manual all measure dimensions of normal personality (Costa, Jr. & McCrae, 1992, p.14-19), and are introduced in the next section along with mentoring research that has been linked to it.

The Five Factor Model Personality Traits and Mentoring

Turban and Lee (2007) in their chapter on the role of personality in mentoring relationships presented a research agenda for examining the influence of personality,
providing examples of potentially important personality traits at each phase proposed by Kram (1985). As discussed earlier, the initiation phase is of particular interest in mentoring relationships between doctoral students and faculty. Furthermore, perceived benefits and similarity may influence the process of initiating attempts to start a relationship (Hu, Barankik, & Wu. 2014; Turban & Lee, 2007), as might “personality characteristics indicative of a positive interpersonal orientation (e.g., agreeableness, extraversion, emotional stability)” (Turban & Lee, 2007, p. 36). Therefore understanding how certain personality facets or traits influence the initiation of mentoring relationships is important, and may help us understand how we can be more intentional about the formation of such relationships, and help increase their prevalence.

Unlike the literature on mentoring, a robust amount of research has been conducted in the field of organizational and industrial psychology, especially in coaching, and also describes a developmental relationship that could inform the research on mentoring. For example, O’Connor and Cavanagh (2013) state that developmental stages, such as the ones described by Berger (2011) on orientation to authority and perspective-taking across the adult forms of understanding, may impact the way one responds to developmental coaching as a guided process of change. Similarly, in mentoring, a protégé is typically in the process of developing a professional identity and thereby changing and increasing (hopefully) his or her level of skills through mentoring functions offered by a mentor that may include providing feedback and challenges, teaching and coaching. Along with this concept of movement along developmental stages, personality traits may also change in predictable ways over time and therefore
influence one’s receptivity, or openness to mentoring. Therefore, year of study and age will be controlled for possible developmental stage influence in this study.

Finally, Turban and Lee (2007) suggested that the following FFM personality traits in protégés may be important variables at the initiation stage: Extraversion, Emotional Stability (as related to Neuroticism) Agreeableness, and Conscientiousness. The few mentoring studies that have addressed these personality traits in the business field are reviewed and hypotheses tested are presented below.

Extraversion/Introversion.

Extraverts are sociable, they like people and prefer large groups and gatherings, and are typically assertive, active, and talkative. They like excitement and stimulation and tend to be cheerful in disposition. The six facets of extraversion are warmth (affectionate and friendly, genuinely like people), gregariousness (enjoy the company of others), assertiveness (dominant, forceful, socially ascendant), activity (energetic, busy), excitement-seeking (crave excitement and stimulation), and positive emotions (cheerful and optimistic). Extraversion-introversion is one of the fundamental dimensions of personality and humans have been defined along this dimension for a long time (some say from the ancient Greeks). It is described as having a biological basis with social consequences. Extraversion-introversion can help explain many behaviors, a central issue for the field of psychology. Extraversion-introversion can also predict functioning and wellbeing in several domains, as well as psychopathology risks and resilience (Wilt & Revelle, 2009). Extraversion-Introversion is a central dimension of human personality first described in 1921 by Carl Jung. In his original paper, he described introversion as one’s interest being focused inwardly towards one’s thoughts and feelings while
extraversion as one’s interest being focused towards other people and the outside world. Eysenck (1967) then went on to lead a series of experimental and taxometric studies on extraversion and was the first to develop personality scales. Today the definition of introversion seems to be mostly related to, as a lack of extraversion, in contrast to the way Jung (1921) initially described it. The dimension of extraversion-introversion is viewed on a single continuum with people presenting with a preference for one or the other. Research on extraversion and introversion has explored issues related to its biological bases, brain structures, affect orientation, response to rewards, subjective well-being, health outcomes and perceived availability of social support.

Personality theorists have long debated the biological bases of personality domains including extraversion-introversion. One of them, Eysenck’s arousal theory (1967) proposed that extraverted individuals have a lower level of cortical arousal and therefore look for stimulating situations to increase their arousal. They do so by engaging in typical extravert behaviors (Hagemann, Hewig, Walter, Schankin, Danner, & Naumann, 2009) helping to explain extroverts arousal seeking behaviors such as sexual activities and stimulant drugs (cigarettes) use, in addition to social activities. EEG studies have in fact supported his theory in various studies measuring cognitive task demands. Furthermore, Hagemann et al., (2009) found that neither external factors, nor skull thickness affected this finding further suggesting that the arousal hypothesis is correct. In addition to genetic theories, brain function and structure have also been linked to extraversion. For example, the dopaminergic hypothesis of agentic extraversion (Depue, 1995) posits that in order to elicit approach behavior, a certain level of dopamine must be reached. Similarly, advances in neuroimaging such as fRMI has allowed for
research aimed at determining possible neuroanatomical underpinnings of extraversion. For example, in a comprehensive review by Canli (2004), extraversion measured by the NEO-PI-R was correlated with greater activation in the amygdala, caudate, medio-frontal gyrus, and right fusiform gyrus with positive (but not negative) stimuli. Another robust finding about extraverts is that they experience more positive affect than introverts and that they condition to rewarding stimuli faster (Wilt & Revelle, 2009).

In her book *Quiet: The power of introverts in a world that can’t stop talking*, Susan Cain (2012) describes how at the turn of the century the U.S. transformed from a culture of character to a culture of personality, opening up a “Pandora’s Box of personal anxieties.” She states that in the culture of character citizens tended to value discipline, honor, and seriousness. With the advent of the industrial revolution, and the growth of urban life, Americans began working with strangers and became concerned with how others perceived them, and “every American was to become a performing self” (Cain, 2012, p. 21). Overtime, she argues, having a ‘good’ personality became widespread along with the idea of being a good salesman, not only for corporate products, but also for ourselves. She further argues that we now live in a value system she calls the “Extrovert Ideal—the omnipresent belief that the ideal self is gregarious, alpha, and comfortable in the spotlight” (Cain, 2012. p. 4). This, she states, leaves introversion as “…a second-class personality trait, somewhere between a disappointment and a pathology” (Cain, 2012, p. 4). Furthermore, she provides examples of research studies that have confirmed this bias. For example, a study by Swann Jr. and Rentfrow (2001) described that based on a measure of how people respond in the classroom environment (measured by the Brief Loquaciousness and Interpersonal Responsiveness Test (BLIRT) early in the semester,
classmates rated high blirters (based on speed, frequency and effusive way people respond) to be more competent and likeable. Similarly, Paulhus and Morgan (1997) found that at the onset of a leaderless group discussion setting, shy people were perceived as less intelligent by their more talkative classmates. Although shyness is not the same at introversion (but may look the same to outsiders) the point of including that study was that students’ trait expression of being less talkative could also be characteristic of introversion. She then reminds us that many introverts, such as Chopin, Proust, Steve Jobs, Einstein and many others, have contributed much to our world. Finally she reports that we might be surprised to learn that one third to one half of Americans are likely introverts and that many of us might be “faking our extraversion,” in order to make it in this “Extrovert Ideal” culture. This societal pressure to “perform,” she says has led to the increase of anxiety disorders we have seen in the last decades and affects students in the classroom and employees alike. She presents the following example, related to the fear of public speaking, now considered a pathology if it interferes with one’s job, and reports: “It’s not enough,” one senior manager at Eastman Kodak told the author Daniel Goleman, “to be able to sit at your computer excited about a fantastic regression analysis if you’re squeamish about presenting those results to an executive group.” And adds “Apparently it’s OK to be squeamish about doing a regression analysis if you’re excited about giving speeches.” (Cain, 2012, p. 31).

To relate personality to mentoring, a few studies have examined personality traits as they relate specifically to the initiation of mentoring, and these have been conducted mostly in samples of professionals. For example, Aryee, Lo and Kang (1999) surveyed 184 Hong Kong Chinese Graduate employees to examine the relationships between
protégés’ extraversion, among other personality characteristics including work locus on control, self-monitoring and type A personality, protégés’ initiation mentoring relationships and mentoring received. Results showed that protégé-initiated mentoring relationships did mediate the relationship between extraversion and mentoring received. The purpose of this study then was to examine initiation as the mediator between specific facets of personality and mentoring received in a doctoral student population. Similarly while most prior studies have focused on broader personality traits, in this study specific facets were examined to provide a more precise understanding of influential variables in the receipt of mentoring. Since the central premise of this study was to examine facets of extraversion/introversion and its impact on this initiation of mentoring and mentoring received, all facets of this personality trait were measured. Hypotheses related to extraversion/introversion are the following: All facets of extraversion measured (friendliness, gregariousness, assertiveness, and cheerfulness) will be positively related to protégé-initiation of mentoring and to mentoring received.

1. All facets of extraversion (friendliness, gregariousness, assertiveness, cheerfulness) will be positively related to initiation of mentoring and to mentoring received.

2. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ friendliness and mentoring received.

3. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ gregariousness and mentoring received.
4. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ assertiveness and mentoring received.

5. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ cheerfulness and mentoring received.

Neuroticism.

*Neuroticism* (N) is one of the most pervasive and studied domains of personality scales and contrasts adjustment or emotional stability. Someone high in neuroticism generally describes a tendency to experience negative affect. The six facets of neuroticism are anxiety (worry, fearful, tense), angry hostility (frustration, readiness to experience anger), depression (sad, guilty, hopeless), self-consciousness (share, embarrassment, shy), impulsiveness (inability to control cravings and urges), and vulnerability (unable to cope with stress, hopeless). Subjective wellbeing (SWB) has also been studied extensively and research has shown that SWB to be associated with neuroticism and extraversion, although stronger for neuroticism. Longitudinal studies have found that people typically return to baseline SWB even after positive or negative life events. However, Gomez et al. (2009) found SWB to be related to neuroticism for negative life events and openness for positive life events. Perhaps not unrelated, personality traits have also been found to be influential to perceived availability of social support, including appraisal support (someone to talk to about problems), belonging support (people to do things with), self-esteem support (positive comparison to evaluate self), and tangible support (someone who can provide material aid). Swickert, Hittner, and Foster (2010) administered the NEO-PI to a group of 366 college students to determine which FFM personality traits were related to perceived social support. In line
with the existing literature, they found that neuroticism was negatively related to perceived social support while extraversion was positively related to perceived social support. This may also be important for graduate students engaged in mentoring relationships, in that social support has been found to play a stress-buffering role (hence linked to SWB). As graduate school tends to be a high stress time for many students (Walfish et al., 2001), it may be important to find how mentors may be providing some types of social support to students through mentoring, and if this may link to specific outcomes. Finally, Judge, Locke, and Durham (1997) presented a theory of core self-evaluations, as basic conclusions that individuals hold about themselves, that include self-esteem, generalize self-efficacy, locus of control, and emotional stability. A few studies have addressed these personality characteristics as they relate to mentoring relationships in organizational environments.

Fagenson-Eland and Baugh (2001) examined four personality characteristics, need for achievement and dominance, self-esteem and tension dissipation (described as an ability to dissipate job-related tension), as predictors of mentoring relationships in a sample of 100 employees in small high tech companies and found that individuals who reported having several mentors also showed a higher need for achievement and dominance and higher self-esteem.

Turban and Dougherty (1994) conducted a study with 147 managers and professionals and measured emotional stability among other personality characteristics including locus of control and self-monitoring. They proposed that individuals high in emotional stability would display higher self-esteem and be more likely to seek mentoring and feedback, and wouldn’t feel threatened with potential rejection (Fagenson-
Eland & Bauch, 2001). Conversely, those high in negative affectivity would tend to avoid potential mentoring relationships. Results showed that individuals high in emotional stability initiated mentoring more and reported receiving more mentoring as a result. Hence their results suggested that it is not only that protégés are chosen by mentors, but protégés themselves can influence the mentoring process by initiating such relationships. Finally, they called for additional research into additional protégés’ personality traits that might also influence their attempts to initiate mentoring relationships.

In terms of specific facets in neuroticism most related to the initiation of mentoring, it would seem logical that self-consciousness would be most relevant since individuals who endorse this facet endorse being uncomfortable around others, sensitive to ridicule, prone to feelings of inferiority, shy or prone to social anxiety, all of which would likely keep them from attempting to initiate mentoring relationships with faculty. Another facet of interest in neuroticism is angry hostility, which measures an individual’s readiness to experience anger and is often related to agreeableness in that disagreeable individuals often score high on this scale. This readiness to experience anger could be partly related to Type A behavior, which has been shown to correlate with mentoring received. In their study with 184 Hong Kong Chinese employees, Aryee, Lo and Kang (1999) examined the relationships between protégés’ extraversion, among other personality characteristics including work locus on control (attribute causes of events to self or external environment), self-monitoring (sensitivity and adaptation to situational cues/requirements) and type A personality, protégés’ initiation mentoring relationships and mentoring received. Type A behavior has been described as a combination of traits including competitiveness, a proneness to showing higher levels of hostility and
aggression, a need to race against time and ambitiousness (Yazici & Altun, 2013). Aryee et al. (1999) found that protégé-initiated mentoring relationships were related to both Type A behavior and extraversion and they suggested that this might be explained by an individual’s desire to control their environment, as well as showing proactive behavior.

In order to further understand the impact of specific neuroticism facets on the initiation of mentoring, two facets will be explored including self-consciousness and anger. While all facets of neuroticism are likely to hold some influence on an individual’s behaviors in relationships, self-consciousness influences one’s likeliness to share, experience embarrassment and feel shy, and is therefore very relevant to whether or not a student would attempt to initiate a relationship with a faculty member. Anger might also influence a student’s attempt to initiate a relationship with a faculty member as previously demonstrated in Aryee et al.’s study (1999) as a trait of Type A personality. Examining this specific facet on its own might help further our understanding of how Type A personality influence individuals in their initiation of mentoring relationships (i.e. is it anger, or is it achievement-striving?). While anxiety is likely to be an influential facet in the initiation of relationships, social anxiety is a proposed factor of self-consciousness (Higa, Phillips, Chorpita, & Daleiden, 2008) and therefore posited to be most relevant in this study. Therefore, the current study will examine two facets of each, neuroticism, agreeableness and conscientiousness.

The related hypotheses for the trait of neuroticism are:

1. Self-consciousness and anger will be negatively related to initiation of mentoring and to mentoring received.
2. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ self-consciousness and mentoring received.

3. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ anger and mentoring received.

Agreeableness.

Like extraversion, agreeableness (A) is primarily a dimension of interpersonal tendencies. The agreeable person is fundamentally altruistic, sympathetic to others and eager to help them, and believes that others will be equally helpful in return. By contrast, the disagreeable or antagonistic person is egocentric, skeptical of others’ intentions, and competitive rather than cooperative. The six facets of agreeableness are trust (belief that others are honest and well-intentioned), straightforwardness (sincere), altruism (concern for others, willingness to help), compliance (defer to others, forgive and forget), modesty (humble and self-effacing, but not necessarily low in self-esteem), and tender-mindedness (sympathy or concern for others). As a dimension of interpersonal tendencies, agreeableness has been shown in a couple of studies to be related to mentoring received. A protégé who demonstrates high agreeableness and perhaps more specifically trust in others is more likely to initiate mentoring relationship perhaps due to expecting positive results from the investment (social exchange theory), as they would expect others to be helpful in return. Although agreeableness has also been shown to be an indicator of mentoring provided (a mentor’s personality trait; see Paludi, et al., 1988, and Schlosser & Kahn, 2007, pp. 53 and 63), perhaps because altruism, a specific facet of agreeableness, would predict someone’s desire to help and be concerned about others, it may similarly
be an attractive trait in a protégé from the point of view of a potential mentor. In addition, the facet of modesty may also present as an attractive quality in a protégé to a potential mentor. Conversely, it would be interesting to learn if someone high in modesty might be less likely to initiate mentoring relationships due to perhaps not wanting to take up someone’s time, especially a faculty member who may be viewed as a person in authority. This may be more relevant to international students who may endorse different cultural values such as power distance orientation (see Hofstede, 2001, p. 58).

Interestingly, Ashton and Lee (2001) argued that a sixth factor found in many cultures, honesty/humility provided a sufficiently independent separate factor that adds unique variance to the structure not explained through the five-factor model. Perhaps separate analyses of this FFM agreeableness facet will provide some insight into its role in mentoring relationships for those who may endorse different cultural values.

Bozionelos and Bozionelos (2010) conducted a study with 272 white-collar workers to examine the relationship between personality (FFM traits measured by the Cattell 16PF5) and mentoring received. They hypothesized that mentoring received would be positively related to extraversion, openness, agreeableness and conscientiousness and negatively related to neuroticism. Interestingly, they found a positive correlation between openness and mentoring received as well as between agreeableness and mentoring received. They did not find a significant relationship between extraversion and mentoring received. This finding is contradictory to a previous study that found extraversion to be positively correlated to mentoring received (Aryee et al., 1999). Finally, Afolabi (2014) investigated the influence of protégés personality and gender on mentoring relationships among 100 Nigerian nurses. He found that
neuroticism was negatively related to mentoring relationships, and agreeableness was positively related to mentoring. He found no gender influence on mentoring relationships. Prior research on the influence of gender on mentoring relationships has been inconclusive finding both differences (Sosik & Godshalk, 2000), for example in terms of male mentors providing more career development related functions, and no differences between gender (Afolabi, 2014). All facets of agreeableness have been posited to be influential in how individual navigate interpersonal relationships, however trust and modesty would seem more likely related to the initiation and establishment of interpersonal relationships, while straightforwardness, altruism, compliance and tender-mindedness may be more likely related to the maintenance of such relationships and perhaps more relevant in a different stage of Kram’s mentoring framework. Therefore, the two facets of agreeableness explored in this study are trust and modesty.

The hypotheses related to agreeableness are the following:

1. Protégés’ trust and modesty will be positively related to initiation of mentoring and to mentoring received.
2. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students trust and mentoring received.
3. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students modesty and mentoring received.
4. International students who endorse higher modesty will be negatively related to protégé-initiation of mentoring relationships with faculty (cultural characteristic adaptation?)
Conscientiousness.

A great deal of personality theory, particularly psychodynamic theory, concerns the control of impulses. During the course of development most individuals learn how to manage their desires, and the inability to resist impulses and temptations is generally a sign of high Neuroticism among adults. But self-control can also refer to a more active process of planning, organizing, and carrying out tasks; and individual differences in this tendency are the basis of conscientiousness. The six facets of conscientiousness are competence (capable, effective, prudent), order (organized, tidy), dutifulness (governed by conscience), achievement striving (work hard, high aspiration levels), self-discipline (self-motivated, carry through tasks), and deliberation (think carefully before acting).

Turban and Dougherty (1994) measured their participants’ global self-esteem and found this variable positively related to protégé-initiated mentoring and mentoring received. Fagenson (1992) in an earlier study was one of the first researchers to investigate the individual differences that distinguished protégés from non-protégés. She suggested that protégés might be more ambitious, more comfortable in social situation, and perhaps have more of a desire to control their environment. She tested her hypotheses with 100 mentors and protégés from two small high tech companies. Results showed that protégés reported higher needs for power and achievement, but she found no difference between protégés and non-protégés in their need for affiliation. Similarly, Allen and Day (2004) found a relationship between career motivation and career mentoring received. Therefore the two facets that seem most relevant to conscientiousness are self-efficacy and achievement striving. Hypotheses related to these facets of conscientiousness are:
1. Self-efficacy and achievement striving will be positively related to initiation of mentoring and to mentoring received.

2. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ self-efficacy and mentoring received.

3. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ achievement striving and mentoring received.

Openness.

As a major dimension of personality, openness to experience is much less well known than neuroticism and extraversion. The elements of openness, active imagination, aesthetic sensitivity, attentiveness to inner feelings, preference for variety, intellectual curiosity, and independence of judgment, have often played a role in theories and measures of personality. The six facets of openness are fantasy, aesthetics, feelings, actions, ideas and values. While openness has not been linked to protégés personality and mentoring received, one research study found that mentor’s openness was related to mentoring provided.

Bozionelos (2004) explored various relationships between perceptions of career success, mentoring received, mentoring provided and personality characteristics from a mentor’s perspective. As most research in mentoring has focused on protégés’ outcomes, there is a scarcity of research regarding mentoring from the mentor’s point of view. In addition, it has also been demonstrated that those who have benefitted from mentoring, are more likely to provide mentoring themselves, perhaps because they are more aware of possible rewards from becoming mentors (Ragins & Scandura, 1999). It also seems
evident that a mentor’s personality traits would affect the mentoring relationship and some studies have investigated the roles of motivation, willingness and perceived competence to mentoring but few have focused on specific personality traits included in the FFM. Bozionelos (2004) included all five traits in his study and hypothesized that all, extraversion, openness, agreeableness, conscientiousness, would be positively related to mentoring provided except neuroticism that would be negatively related to mentoring provided. Results indicated, as previously suggested, that individuals who have been mentored are more likely to provide mentoring in the future. In terms of personality characteristics, openness was the only trait associated with mentoring provided. Thereby indicating that individuals open to new experiences may be more likely to mentor others. The author suggested that perhaps the mentor’s personality has limited effect on mentoring provided and that another fruitful area of research should focus on perceptions of barriers in providing mentoring. No hypotheses were developed for this personality trait however examining this particular trait in mentors would add greatly to the literature on mentors’ motivations to provide mentoring.

Conclusion and the present study

Reviewing the literature on mentoring in graduate education, its prevalence, initiation of mentoring, personality and introversion has laid the groundwork for this study. Despite multiple benefits that result from mentoring relationships between students and faculty in graduate school, its prevalence appears to plateau somewhere between 50 and 70 percent leaving us to wonder why so many are missing out on relationships that can be so beneficial to students. Benefits related to mentoring relationships between students and faculty reported in the literature include increased
satisfaction in graduate school, higher retention, faster time to completion, increased research productivity, academic acculturation and development of a professional identity in a new field. While many contextual and individual barriers to mentoring have been identified, such as lack of time, lack of organizational support, lack of role models, highly hierarchical structures, and unequal power distribution, research is just beginning to tackle specific influences such as personality traits.

A few mentoring research studies have focused on individual personality traits (Turban & Lee, 2007). Some have shown that personality traits are related to mentoring relationships’ initiative and prevalence (Bozionelos, 2004; Bozionelos & Bozionelos, 2010; Dougherty & Turban 1994; Aryee et al., 1999). In their review chapter of the Role of Personality in Mentoring Relationships, Turban and Lee (2007) stated, “extraversion may be less important for the initiation of formal versus informal mentoring relationships” (p. 45). As such, this study and hypotheses presented here aim to investigate the effect of specific facets of introversion, as well as several other facets of personality traits in doctoral students on protégé-initiation of mentoring relationships with faculty. These personality traits have shown promise to help us understand how mentoring relationships between them are initiated, thereby filling a gap in the mentoring literature specific to doctoral programs in the social sciences.

The following hypotheses will be explored in the study:

1: Protégé-initiation of mentoring relationships with faculty will be positively related to mentoring received.

2. All facets of extraversion (i.e., friendliness, gregariousness, assertiveness, cheerfulness) will be positively related to protégé-initiation of mentoring and mentoring received.
3. Self-consciousness and anger (neuroticism) will be negatively related to initiation of mentoring and mentoring received.

4. Self-efficacy and achievement striving (Conscientiousness) will be positively related to initiation of mentoring and mentoring received.

5. Trust and modesty (agreeableness) will be positively related to initiation of mentoring and mentoring received.

6. International students who endorsed higher modesty will be negatively related to protégé-initiation of mentoring with faculty.

7. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ friendliness and mentoring received

7a. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ gregariousness and mentoring received

7b. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ assertiveness and mentoring received

7c. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ cheerfulness and mentoring received

8. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ self-consciousness and mentoring received

8a. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ anger and mentoring received

9. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ achievement striving and mentoring received

9a. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ self-efficacy and mentoring received

10. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ trust and mentoring received

10a. Protégé-initiation of mentoring relationships with faculty will partially mediate the relationship between doctoral students’ modesty and mentoring received
CHAPTER III

METHODS

This chapter provides information regarding participants for the study, procedures followed, measures and statistical analyses conducted. Participant selections and procedures are discussed first, followed by a review of the measures that were utilized. Included in the measures section is a presentation of relevant reliability and validity studies.

Participants

Data were collected from one hundred and ninety participants between April 27, 2016 and October 1, 2016. Cases with significant amounts of missing data were deleted prior to analyses. These included twenty-six participants who failed to complete at least one entire independent measure scale. Out of the remaining 164 participants, two additional cases were removed for not meeting inclusion criteria of being enrolled in a social science doctoral program. This resulted in a usable sample of one hundred and sixty-two participants (77% female and 22% male and one participant who chose not to respond). Participants were enrolled in various social science programs around the country, however the majority of students were enrolled in psychology programs (77%) at public universities (78%). Most participants were citizens of the United States (89%). The age of the participants ranged from 22 to 66 (M = 30.51). Participants identified as Caucasian (69%), African-American (11%), Asian-American (6%), Hispanic (6%) and
Participants reported their sexual orientation as heterosexual (78%), bisexual (12%), homosexual/gay/lesbian (6%) and a few chose not to respond. Participants were provided with a definition of a mentor and asked to respond to the question “I have a faculty mentor” according to the definition. Out of the 162 participants, 30 participants stated that they did not have a mentor.

Procedures

Approval from the Institutional Review Board was obtained prior to data collection and all relevant approval information was provided to study participants. A survey combining all relevant demographic and preliminary questions and all measures was administered through Qualtrics. Qualtrics is a survey platform that is often used in research studies and the one often used by researchers at the University of Akron. Participants who responded to the survey were first screened for eligibility, with inclusion criteria for the study being that they had to be enrolled for at least two semesters in a doctoral program in the social sciences. Any identifying information (such as email to provide feedback on personality trait if participants requested it, or if participant chose to enter a drawing for a gift card) was kept separately from the survey results in order to prevent any breach of confidentiality. The survey was sent out to the university of Akron community through the Graduate Student Government as well as specific graduate departments listservs. Data was collected through direct contact with department chairs and training directors around the country, listed in the APA doctoral programs directory (via email) as well as through snowball sampling to access additional doctoral populations around the country. Snowball sampling is a recruitment method.
meant to access specific populations through the use of social networks (Browne, 2005) such as Facebook.

Once approval from the IRB had been granted, potential participants received an email inviting them to take part of the study. At the onset they were presented with an informed consent form and relevant information including IRB approval information, study rationale, participant eligibility, study risks and benefits, approximate time survey would take, confidentiality information and primary investigator contact information. Participants were also offered an incentive, consisting of winning 1 of 5 Starbucks gift cards worth $20.

Measures

Demographic questionnaire.

Participants started the survey by answering demographic questions including age, sex, ethnicity, country of citizenship, native language, and year in graduate school, field of study, relationship status, and type of institution.

Definition of mentoring.

Review of the literature on mentoring pointed to a number of methodological issues including a lack of consistent definition of mentoring. To ensure that all participants had the same understanding of the construct measured, the following definition of mentoring was provided at the start of the survey: Mentoring is a personal developmental relationship with an experienced faculty member who may or may not be your advisor and may or may not be in your own program, but who serves as a role model, guide, teacher and encourager and at times provides you with personal and career counsel and advice. In addition this mentor might involve you in their research
endeavors or cooperate on professional presentations and/or introduce you to colleagues in your field of study.

The completed survey included demographic questions, a measure of mentoring received that included a forced yes/no question about the participant’s perception of having a mentor, or not having a mentor (based on the definition provided), a measure of mentoring initiation and finally a measure of relevant personality traits based on the Five-Factor model.

Mentoring Functions Questionnaire (MFQ-9).

Mentoring received was assessed using the MFQ-9 (Castro, Scandura, & Williams, 2004), a 9-item questionnaire assessing mentoring functions received. While a few scales have been developed to measure mentoring received based on Kram’s (1985) seminal research (Dreher & Ash, 1990; Noe, 1988; Ragins & McFarlin, 1990), none had extensive evaluations of their psychometric properties except the scale developed by Scandura (1992) which was eventually refined into the MFQ-9. Students who answered yes to the yes/no question about having a mentor were required to complete the MFQ-9 to assess the degree of mentoring they received by type of functions. As discussed in the literature review section, mentoring research has been riddled with methodological problems including, a lack of consistent definition, as well as a lack of tested assessment measures (Gilbreath, Rose, & Dietrich, 2008). Most research has been conducted using either qualitative data, or author created surveys designed for their own research purpose (Johnson, 2014).

Scandura (1992) developed a mentoring functions scale for a study on mentorship and career mobility, based on extensive reviews of Kram’s (1988) research. Based on
initial pilot studies with a sample of 25 managers (not included in the final survey) at the research site, she created an 18-item Mentorship scale. A factor analysis found a three-factor solution, including, career functions, role modeling functions, and psychosocial functions. Scandura and Ragins (1993) used this mentoring measure in a study that examined the effects of gender role orientation on mentorship in male-dominated occupations. As part of their study, they conducted further analyses on the scale, including an initial factor analysis that resulted in a 15-item scale and also confirmed a 3-factor solution.

Castro, Scandura, and Williams (2004) conducted an extensive validity and reliability study on Scandura and Ragins’ (1993) Mentoring measure. In a first study, with a sample of 169 students from a southeastern university, they assessed the measure for content validity by conducting a principal axis factor analysis. Results from the first study supported the content validity of Scandura and Ragins’ measure. In a second study, with a sample of 255 employed MBA students, they assessed scale reliability, concurrent validity, and convergent and discriminant validity. Results from study 2 analyses led the authors to reduce the scale to a 9-item measure and repeat the analyses. The reliability score of the revised 9-item scale was .91 with scores on the 3-item factors ranging from .82 to .85. Fit statistics indicated that the three-factor model fit best. The determination of the optimal 9-item scale was based on theoretical construct definitions, the item-total correlations, factor loadings and content adequacy results. They renamed the scale the Mentoring Functions Questionnaires, or MFQ-9. Finally, a third study, with a sample of 795 CPAs, examined the convergent and discriminant validity, reliabilities, and item total correlations of the MFQ-9. Results indicated that overall the model was a good fit and all
factor loadings were significant, although a few items were slightly below the .70 rule of thumb cutoff (.69 and .68). They indicated that this might be attributed to their specific sample and reminded the reader that all the items had strong content adequacy demonstrated in studies 1 and 2. The authors also found strong convergent and discriminant validity after reducing the 15 items to a 9-item scale. Convergent validity was demonstrated by examining covariation among the measure’s items, looking at the item loadings, correlations with Ragins and McFarlin’s (1990) mentoring measure and using Fornell and Larcker’s (1981) average variance indicator to determine the proportion of variance in the latent variables. Overall, the MFQ-9 presents a reliable and valid measure of mentoring functions provided. Pellegrini and Scandura (2005) also explored the factorial stability of the MFQ-9 across a group of unsatisfied protégés and a group of satisfied protégés and found that CFA supported the previous three-factor structure. The MFQ-9 however demonstrated some nonequivalence on item-pairs across the two groups suggesting that although this may be due to something about the way these two groups reported their mentoring experiences, further examination of the instrument use with satisfied protégés may be warranted. Hu (2008) examined the MFQ-9 measurement equivalence across gender. This study supported the three-factor structure and also indicated that both groups responded in the same manner and demonstrated equivalence between each item and its underlying construct.

The MFQ-9 has also been examined for equivalence across two diverse cultural settings, the U.S. (195 employed MBA students) and Taiwan (309 full-time workers) (Hu, Pellegrini, & Scandura, 2011). While interest in the benefits of mentoring is increasing globally, the MFQ-9 was developed in the U.S. with North American samples.
In mentoring, as with any personal relationships, the concept of culture is an important construct as it determines expectations and interactions. Therefore, determining whether or not a measure demonstrates strong psychometric properties across cultures is an important endeavor, if one wants to infer any conclusions based on cross-cultural studies with instruments such as the MFQ-9. To determine measurement equivalence/invariance, the authors conducted a series of multi-group confirmatory factor analysis (MGCFA) and examined fit indexes. The results demonstrated strong discriminant validity of the three-factor model as well as full metric and partial scalar invariance suggesting that some comparisons can be made across cultures using the MFQ-9. As an example, Hu, Baranik, & Wu (2014) examined the relationship between two individual factors, mentors’ altruism and protégés’ core self-evaluations, and one situational factor, mentors’ perceived dissimilarity to their protégés in relation to overall mentoring received. They conducted this study with a group of 196 dyads (mentor/protégé) Executive MBA Taiwanese students using the MFQ-9 measure and reported a cronbach’s α of .93 for their sample.

Initiation of mentoring relationships.

No measure of protégés’ initiation of mentoring (in a graduate school environment) have been developed to date. Therefore, a 4-item scale developed by Turban and Dougherty (1994) and slightly modified to make it applicable to student-faculty mentoring was used. Modifications included the following changes: instead of stating ‘To what extent have you sought to become acquainted with higher-level managers, the term ‘higher level managers’ was replaced with ‘experienced faculty.’
In response to calls in the literature regarding how protégés characteristics influence mentoring received, Turban and Dougherty (1994) set out to investigate how individual personality characteristics influence their initiation of mentoring relationships and in turn, their mentoring received. They chose personality characteristics that indicated proactive behaviors, as those would likely be related to initiation of mentoring. To measure initiation of mentoring received, they developed a four-item instrument to which participants responded on a seven-point scale (that they did not describe), the extent to which they had:

1. sought to become acquainted with higher-level managers,
2. made personal efforts to have their work become visible to higher-level managers,
3. taken the initiative to seek counseling and advice from higher-level managers, and
4. taken the initiative to find mentors in their organizations

In their sample of 147 respondents, they obtained a Cronbach’s α of .82. In addition, they conducted a principal component analysis to investigate method variance and found that all four items of their initiation of mentoring scale loaded on a single factor.

Their measure was adapted and used in at least two additional studies. Aryee, Lo and Kang (1999), conceptualized that extraversion was positively related to protégé-initiated mentoring relationships and mentoring received. Specifically, they looked at the mediating influence of protégé-initiated mentoring relationships on the relationship between personality and situational characteristics and mentoring received. To measure protégé-initiated mentoring relationship, they used a 5-item scale adapted from Turban and Dougherty (1994). They utilized a 5-point response format specified as 1 ‘to a very little extent’ to 5 ‘to a very great extent.’ They did not, however, specify the fifth item
added to Turban and Dougherty’s measure. They reported a scale’s alpha reliability of 0.84.

Blickle, Witzki, and Schneider (2009) also conducted a study examining self-initiated mentoring with 121 early career employees in administrative and managerial jobs, in the larger context of career proactivity. To measure self-initiated mentoring they used the scale created by Turban and Dougherty (1994). They described using the scale with responses ranging from 1= ‘never’ to 5= ‘very frequently.’ They provided the 5-items used by Aryee et al. (1999) and added a sixth one:

1. I have sought to become acquainted with higher level managers
2. I have made personal efforts to have my work become visible to higher level managers
3. I have taken the initiative to seek counseling and advice from higher level managers
4. I have taken the initiative to find experienced higher level managers to assist with my career development
5. I have taken the initiative to find experienced higher level managers to promote my career interests
6. I try to build good personal relationships with higher level managers

In this study, Blickle et al. (2009) reported a Cronbach’s $\alpha$ for their sample of 0.81.

Personality traits and facets based on the Five-Factor Model.

The five-factor personality traits of extraversion, neuroticism, agreeableness and conscientiousness, specific facets included were measured using the IPIP-120 created from the Goldberg’s International Personality Item Pool (IPIP; Goldberg, 1999) and derived from the IPIP-NEO (Goldberg, 1999). The IPIP-NEO, a 300-item inventory,
was created to measure the 30 facets scales of the NEO Personality Inventory (NEO-PI-R, Costa & McCrae, 1992). Early studies demonstrated strong reliability and validity on this inventory, including a mean alpha reliability of .80, greater than the original NEO-PI-R scale one of .75. The IPIP-NEO was translated into several languages (e.g., German, Japanese, Danish and others), and a study with the Estonian version confirmed its’ reliability, as well as convergent validities with corresponding NEO-PI-R scales. In addition, the IPIP-NEO showed higher readability than the original NEO-PI-R scale (Mottus, Pullman, & Allik, 2006). The IPIP-NEO has also been utilized in studies on anxiety and depression (Sutton et al., 2011), cortisol levels (Adam et al., 2010), leadership style (Ali, Nisar, & Raza, 2011) and many others. However, one of the biggest drawbacks of the 300-item is its length. This scale is even longer than the original 240-item NEO-PI-R and the length can be prohibitive to researchers who wish to administer a battery of measures (Johnson, 2014).

To that end, Johnson (2014) developed a new instrument, the IPIP-NEO-120 designed to measure all six facets of the FFM personality traits. The development of a 4-item (from the existing 10-item) per facet scale was completed in four phases using a large internet-sample (N=21,588) that the author used in a previous study (Johnson, 2005). The first phase was completed to generate corrected item-total correlations for each of the 10 items of each facet scale using the reliability application from SPSS Base 10.0 (SPSS, 1999). This was used to remove the lowest item-total correlation item and repeated until only 4 items remained. The second phase involved using the Rational-Intuitive strategy (from Goldberg’s Major strategies of scale construction, 1972), to identify any items with 1) repetitiveness from near-duplicate items, 2) fidelity to the
content of items on Costa and McCrae’s (1992) NEO-PI-R and 3) references to
disabilities or anything that might pose a legal issue if used for personnel selection, and
replaced them with items that maintained the highest alpha reliability. The third phase
involved computation of alphas by sex for domain and facet scales. Most scales reached
the rule-of-thumb standard Cronbach’s $\alpha$ of 0.70 (Johnson, 2014).

Johnson (2014) then completed further statistical analyses to assess psychometric
properties of the IPIP-NEO-120. Using four samples he determined reliability by
analyzing alpha reliability coefficients by comparing the 10-item scales with his 4-item
scales and as expected found slightly lower alphas for the 4-item scales. He determined
however that the results, .68 for a community sample and .75 for an internet sample were
sufficient for research however he cautions the reader that .95 would be necessary for
determining life decisions that impact individuals. To determine primary validity, he
computed correlations between the original NEO-PI-R (Costa & McCrae, 1992) scale and
the IPIP-NEO-300 and IPIP-NEO-120 with results of .73 for the longer 10-item scales,
and .66 for the shorter 4-item scales, suggesting they measure highly similar constructs.
Similarly correlations between scales and acquaintances ratings found slightly lower for
the shorter scales, but highly similar correspondence between self and acquaintance
scores on most domains across scales. Finally, Johnson (2014) also conducted three
principal components analyses to examine the factor structure of the IPIP-NEO-120 and
found its structure was a good representation of its parent scale, the NEO-PI-R (Costa &
McCrae, 1992).

Maples, Guan, Carter, and Miller (2014) also created a new 120-item version of
the IPIP-NEO based on a different scale construction method than Johnson (2014). They
created a brief version of the IPIP-NEO, the IPIP-120, using item response theory (IRT). IRT ensures that the items chosen have the highest reliability and was conducted using the IRTPRO software program (Cai, Thissen, & du Toit, 2011). The authors then conducted a series of analyses to compare the validity and reliability of four FFM measures, namely, the NEO-PI-R, the 300-item IPIP-NEO, Johnson’s 120-item IPIP-J, and the newly created IPIP-120. The authors concluded that all four scales demonstrated strong internal consistency, strong convergent validity, as well as acceptable discriminant validity, and strong criterion validity across two samples. The authors concluded that both 120-item IPIP measures present a strong alternative to the longer 300-item IPIP-NEO or potentially costly and not as flexible NEO-PI-R. The IRT-Based IPIP-120 items of interest for this study are listed in Appendix D. The following area the coefficient alphas for the scale and subscales used in this study: Neuroticism (.90), N2 (Anger: .87), N4 (self-conscious: .74); Extraversion (.89), E1 (Friendliness: .81), E2 (Gregariousness: .79), E3 (Assertiveness: .85), E6 (Cheerfulness: .80); Agreeableness (.87), A1 (Trust: .86), A5 (Modesty: .76); Conscientiousness (.90), C1 (self-efficacy: .63), C4 (Achievement-striving: .80). Scoring for the items will be computed using the instructions provided on the IPIP website which provide free access to the scales as well as additional information about psychometrics (retrieved from: http://ipip.ori.org/newScoringInstructions.htm).

Analyses

Hypotheses included correlations to test relationships between personality facets and doctoral students initiation of mentoring as well as between initiation and mentoring received. A second set of hypotheses were based on a simple mediation model
investigating relationships between personality facets, protégé-initiation of mentoring and mentoring received. In the first model, the mediator variable (initiation of mentoring relationships) was theorized to be the explanation (how) endorsing specific facets of multiple personality traits exerts its effect on mentoring received. In addition to the mediation models, multiple regression analyses were conducted to develop parsimonious models to determine the best predictors of both initiation and mentoring received. Control variables included demographics of age, gender, year of study, citizenship, sexual orientation, ethnicity, field of study, native language, and type of institution.
CHAPTER IV
RESULTS

Data were collected from one hundred and ninety participants between April 27, 2016 and October 1, 2016. Participants were recruited through emails sent to APA psychology departments listed on the APA website as well as a few department chairs of other social science departments around the country. Approximately 30% of the data was gathered through links initially shared on Facebook. All participants provided consent prior to completing the survey and thereby indicated that they were doctoral students in a social science program and had completed at least two semesters. In accordance to recommendations by Tabachnick and Fidell (2007) prior to starting main data analyses, data cleaning and missing data analyses, were conducted and data were also analyzed for univariate and multivariate normality. Correlations between variables of interest were then analyzed, followed by mediation analyses and finally a series of hierarchical regressions were completed to determine a possible combination of variables that were hypothesized to most influence doctoral students receiving mentoring from faculty members.

Data Cleaning and Missing Data

As suggested by Tabachnick and Fidell (2007), analyses were conducted to assess the accuracy of data collected, then the type and amount of missing data, followed by assessing for outliers and normality of scales. Schlomer, Bauman and Card (2010),
suggested that missing data analysis needs to be part of a systematic first step in data analysis and must include accurate reporting of this analysis as well as its management. Similarly, Parent (2013) suggested that data be screened to identify any missing data points. One hundred and ninety participants completed the survey by October 1, 2016. Cases with significant amounts of missing data were deleted prior to analyses. These included twenty-six participants who failed to complete at least one entire independent measure scale. Out of the remaining 164 participants, two additional cases were removed for not meeting inclusion criteria of being enrolled in a social science doctoral program. This resulted in a usable sample of one hundred and sixty-two participants. As recommended by Parent (2013), a missing values analysis was then conducted to explore patterns in missing data and to determine the best method to manage this missing data. In addition to a thorough visual scanning of data, Little’s tests (1988) were conducted for each of the scales to determine patterns in missing data. Results indicated that item level missing data ranged from .6% to 1.2% and was missing completely at random (MCAR). Tabachnick and Fidell (2007) suggested that 5% or less of missing at random data in a large sample (>100) presents less serious problems and that almost any missing data procedure will yield similar results. Parent similarly reported that it may be unnecessary to use advanced methods with item-level missingness and that simple methods produce similar levels of accuracy to more complex procedures. In this sample, missing data did not extent beyond item-level missingness and was recorded at less than 2% and hence was determined to be negligible. As recommended by Parent, available item analysis (AIA) was conducted to compute mean substitutions for 13 total item-level missing data
points among the 10 personality subscales and 6 item-level missing data points in the
initiation scale.

Data Normality

Data were then analyzed for assumptions of normality and outliers. Data was
screened for univariate outliers by converting scales to Z scores. Four cases were found
to have Z scores with an absolute value greater than 3.29, the cutoff score indicating that
a data point is an outlier (Tabachnick & Fidell, 2007). Two cases were outliers on the
initiation scale and two cases were outliers on the achievement-striving subscale.

However, Tabachnick and Fidell (2007) recommend that when univariate outliers are
found it may be necessary to first determine if multivariate outliers exist and if so
determine why these multivariate outliers are extreme cases in order to decide how to
proceed. Therefore, screening for multivariate outliers was accomplished by computing
Mahalanobis distance scores and checking probabilities. One case was considered a
multivariate outlier as a result of these analyses (Mahalanobis D2 score p < .001). Since
only one multivariate outlier was found, it was examined individually and found to
correspond to one of the univariate outliers on the initiation scale. In order to maintain as
many participants in the sample as possible without compromising the integrity of the
data, extreme scores on these four univariate outliers were modified according to
Tabachnick and Fidell (2007). They suggest several options to reduce the influence of
outliers if the decision is made that these outliers are sampled from the target population.
One of these options is to transform or change the outlier score of a data point so that it is
closer to the next extreme score in the distribution and slightly less deviant. This option
was chosen to handle 4 outliers that were deemed to be part of the target population (two
were identified as outliers on the initiation scale and two were identified as outliers on the achievement striving scale). The mean score of these scales did not change significantly after the transformation hence keeping the integrity of the data (before transformation \( m = 16.29 \) and after transformation \( m = 16.31 \); achievement striving scale before transformation \( = 16.75 \) and after transformation \( m = 16.77 \)). After obtaining new z scores on these scales, no more univariate outliers were detected. The usable sample then remained at one hundred and sixty-two participants.

Finally, Tabachnick and Fidell (2007) also recommended screening for normality. As such, all means, minimum and maximum scores for each scale were explored and skewness and kurtosis was examined through statistical analyses and through histograms to ensure that they were not indicative of normality issues. Several researchers have suggested that values of skewness and kurtosis between -2 and +2 are considered acceptable (Gravetter & Wallnau 2016). Several variables showed some degree of negative skewness, however their absolute skewness value was less than 1 and, because of the sample size, they were deemed acceptable in terms of normality. As reported by Tabachnick and Fidell (2007), in large samples (>100) a variable with some degree of skewness is unlikely to cause substantive difference in analyses. Skewness and kurtosis for all scale scores can be found in Table 1. Finally, multicollinearity was also explored by examining the correlation matrix (see table 5) to ensure that no variables were too highly correlated (>0.90). In the final sample of 162, no bivariate correlations were identified as being above \( r = 0.6 \). Of the 162 participants, thirty-six identified as male (22.2%) and 125 identified as female (77.2%), with one participant leaving this question
blank. The age of participants ranged from 22 to 66 with a mean of 30.51 (see table 2 for additional participant demographics).
Table 1. Skewness and Kurtosis Values for All Scale Scores

<table>
<thead>
<tr>
<th>Scale</th>
<th>Skewness</th>
<th>SE of Skewness</th>
<th>Kurtosis</th>
<th>SE of Kurtosis</th>
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<tr>
<td>MQ-9</td>
<td>-.683</td>
<td>.191</td>
<td>-.914</td>
<td>.379</td>
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<tr>
<td>Initiation</td>
<td>-.893</td>
<td>.191</td>
<td>.434</td>
<td>.379</td>
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<tr>
<td>Friendliness</td>
<td>-.614</td>
<td>.191</td>
<td>-.273</td>
<td>.379</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>-.485</td>
<td>.191</td>
<td>-.210</td>
<td>.379</td>
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<tr>
<td>Gregariousness</td>
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<td>.191</td>
<td>-.742</td>
<td>.379</td>
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<tr>
<td>Cheerfulness</td>
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<td>.191</td>
<td>.140</td>
<td>.379</td>
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<td>Self-consciousness</td>
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<td>-.380</td>
<td>.379</td>
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<tr>
<td>Anger</td>
<td>.274</td>
<td>.191</td>
<td>-.555</td>
<td>.379</td>
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<td>Achievement striving</td>
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<td>.496</td>
<td>.379</td>
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<td>Self-efficacy</td>
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<td>.676</td>
<td>.379</td>
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<td>Trust</td>
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<td>.191</td>
<td>.397</td>
<td>.379</td>
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<td>Modesty</td>
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<td>.191</td>
<td>.017</td>
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Table 2. Participant Characteristics

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<tr>
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<td>3.1</td>
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Table 2. Participant Characteristics (Continued)

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<td>Missing</td>
<td>3</td>
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</table>

*Note. % = percentage of the total sample.*

Preliminary Analyses

Group comparisons (mentor vs. no mentor).

Participants who responded “no” to the question “I have a faculty mentor” after reading the definition provided, were not asked to respond to the MFQ-9 since questions such as “My mentor takes a personal interest in my career” or “I consider my mentor to be a friend” or “I admire my mentor’s ability to motivate others” would not be applicable. Out of the 162 participants, 30 participants stated that they did not have a mentor and hence did not respond to the MFQ-9. These cases were handled in two ways according to
Allison (2001) and Cohen and Cohen (2003). First, missing and non-missing cases (on mentoring received) were compared on all variables available (see Chi-Square and T-tests sections below). Second, a substituted value was used following a procedure Allison (2001) refers to as “Dummy variable adjustment,” typically 0. Consultation with two statisticians regarding how to include all participants in analyses confirmed that this was an appropriate way to handle the 30 cases with intentionally missing data, as long as the scale was anchored from 0-4, with 0 corresponding to “strongly disagree” (Snell, personal conversation, December 8, 2016; Einsporn, statistics consultation, December 15, 2015). In addition, because the main research question was to help advance the field in understanding possible differences between doctoral students who endorse having a mentor and those who do not, and to learn more about possible barriers about accessing such mentoring, group comparisons were necessary to further understand any differences that might exist between these two groups.

Chi-square for categorical demographics.

Demographic variables between the two groups were compared using Pearson’s Chi-square to identify differences between participants who stated they had a mentor (N=132) and those who stated they did not have a mentor (N=30). No significant differences were found between these two groups on gender \(X^2(1)=.688, \ p=.407\), ethnicity \(X^2(1)=0.676, \ p=.411\), discipline (psychology, other social science) \(X^2(1)=1.63, \ p=.201\), type of institution (Public, Private, Professional) \(X^2(2)=3.91, \ p=.141\) citizenship (USA, non-US) \(X^2(1)=.055, \ p=.815\), or language (English, Other language)\(X^2(1)=0.13, \ p=.721\). However, the percentage of students who reported having a mentor differed by reported sexual orientation \(X^2(1)=4.92, \ p=.026\), with a
larger percentage of non-heterosexual students reporting having a mentor than would be expected by chance.

Independent Samples t-test for Demographic, Personality and Initiation Variables

Independent-samples t-tests were also conducted to compare demographic variables of age and number of semesters enrolled as well as years of study. There was a significant effect for age, \( t(158) = -3.67, p< .001 \), with doctoral students reporting having no mentor being older (\( M=34.87, SD=11.05 \)) than those reporting having a mentor (\( M=29.5, SD=6.02 \)). However, no significant effect for number of semesters enrolled or years of study was identified between the two groups, (semesters enrolled: \( t(158)=-.559, p=.577 \), or years of study, \( t(159)=-1.00, p=.318 \)). Independent-samples t-tests were also conducted to compare personality facets between the two groups. There was a significant effect for friendliness, \( t(160) = 2.93, p=.004 \), and assertiveness, \( t(160) = 2.16, p = .032 \), with mentored students endorsing a higher level of friendliness (\( M=15.49 \)) versus non-mentored students (\( M=13.70 \)), and mentored students endorsing higher level of assertiveness (\( M=14.84 \)) versus non-mentored students (\( M=13.45 \)). No significant differences were found in the other two facets of extraversion, gregariousness \( [t(160)=1.97, p=.051] \) or cheerfulness \( [t(160)=.03, p=.975] \), in two facets of neuroticism, anger \( [t(160)=1.05, p=.295] \) and self-consciousness \( [t(160)=-1.65, p=.102] \), in two facets of agreeableness, trust \( [t(160)=.92, p=.358] \) and modesty \( [t(160)=-1.11, p=.269] \), or in two facets of conscientiousness, self-efficacy \( [t(160)=-.25, p=.806] \) and achievement-striving \( [t(160)=.66, p=.507] \). Finally, an independent-sample t-test was also conducted to compare level of initiation between the two groups. There was a significant effect for initiation \( t(160)=4.051, p<0.01 \), with mentored students reporting higher initiation,
Table 3. Means, Standard Deviations, and Cronbach’s Alphas for All Scales

<table>
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<th>Scale</th>
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<th>SD</th>
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<td>3.13</td>
<td>.777</td>
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<td>MFQ-9</td>
<td>20.16</td>
<td>11.77</td>
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Descriptive statistics and Pearson’s correlations

Descriptive statistics, including means, standard deviations, and Cronbach Alpha coefficients for each scale and personality facets are presented in Table 3. Cronbach Alpha coefficients at the facet levels, as well as for both the initiation and mentoring received scales, are similar to those found in previous studies (Hu et al., 2011; Maples et al., 2014; Turban & Dougherty, 1994).

In the current sample, the initiation scale had a mean of 16.31 and standard deviation of 3.04. Turban & Dougherty (1994) reported a mean of 4.23 and a standard deviation of 1.27, among 147 managers and professional participants responding to their survey investigating initiation of mentoring as a mediator between personality characteristics, including locus of control, high self-monitoring, and high emotional stability. Alpha in the current sample was .78 and was reported as .82 among the participants in their 1994 study. The MQ-9 had a mean of 2.24 and standard deviation of
1.30 in the current sample and a Cronbach’s Alpha of .925. In a study assessing measurement equivalence of the MFQ-9 across a U.S. and Taiwanese setting, Hu, Pellegrini, and Scandura (2011) reported Cronbach Alpha coefficients of .89 in the U.S. sample (N=195) and .91 in their Taiwanese sample (N=309). Hypotheses 1 through 5 were tested using Pearson product-moment correlations. The correlation matrix (see Tables 4 & 5) demonstrates results showing that while most variables were related to each other as hypothesized, about half showed a significant relationship in the predicted direction.

Table 4. Bivariate Correlations Between Personality, Age, Initiation and Mentoring Received

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Note. N = 160 (age) 162 (all others). * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).
Table 5. Correlations

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Table 5. Correlations

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<td>.559**</td>
<td>.043</td>
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<td>Table 5. Correlations</td>
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<td>Anger (N)</td>
<td>Achievement-Striving (C)</td>
<td>Self-efficacy (C)</td>
<td>Trust (A)</td>
<td>Modesty (A)</td>
<td>Mentoring received</td>
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</table>

Hypothesis 1 stated that protégé-initiation of mentoring would be positively related to mentoring received. Results showed support for this hypothesis, hence a significant relationship between initiation and mentoring received, as hypothesized, $r = .427 \ p < .001$.

Hypothesis 2 stated that all facets of extraversion measured would be positively related to protégé-initiation of mentoring and to mentoring received. Results show partial support for this hypothesis. Results demonstrated significant relationships in the expected direction for two of the four hypothesized extraversion facets including friendliness, $r = .219, \ p < .001$ and assertiveness, $r = .202, \ p < .05$, both being positively
related to mentoring received. Similarly, results demonstrated significant relationships between friendliness and initiation, \( r = .199, p < .05 \), and between assertiveness and initiation \( r = .328, p < .05 \). No significant relationships were found between cheerfulness or gregariousness and initiation, or between cheerfulness and gregariousness with mentoring received.

Hypothesis 3 stated that self-consciousness and angry hostility would be negatively related to initiation of mentoring and to mentoring received. Results demonstrated partial support for this hypothesis, finding a significant negative relationship between self-consciousness and initiation of mentoring, \( r = -.311, p < .001 \). No significant relationships were found between self-consciousness and mentoring received, and there was no significant relationship found between anger and initiation or between anger and mentoring received.

Hypothesis 4 stated that self-efficacy and achievement striving would be positively related to initiation and mentoring received. Results demonstrated partial support for this hypothesis. Results demonstrated a significant relationship between self-efficacy and initiation, \( r = .202, p < .001 \), and between achievement striving and initiation, \( r = .313, p < .001 \), and between achievement striving and mentoring received, \( r = .192, p < .05 \). No significant relationship was found between self-efficacy and mentoring received.

Hypothesis 5 stated that trust and modesty would be positively related to initiation of mentoring and mentoring received. Results did not support this hypothesis. No significant relationships were found between trust and initiation nor between trust and
mentoring received and no significant relationships were found between modesty and initiation or between modesty and mentoring received.

Hypothesis 6 suggested that international students who had endorsed higher modesty would be negatively related to protégé-initiation of mentoring with faculty. Results did not support this hypothesis. There was no significant difference between endorsement of modesty by US and non-US students in the studied sample. In addition, as stated in hypothesis 5, no significant relationship was found in the total sample between modesty and initiation.

Table 6. Hypotheses & results

<table>
<thead>
<tr>
<th>Hypothesis</th>
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Table 6. Hypotheses & results (Continued)

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<td>Initiation mediates relationship between Cheerfulness $\rightarrow$ Mentoring received</td>
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<td>Hypothesis 8</td>
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<td>Hypothesis 9a</td>
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<tr>
<td>Hypothesis 10a</td>
<td>Initiation mediates relationship between Modesty $\rightarrow$ Mentoring received</td>
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Partial Correlations to control for age

In addition to Pearson’s correlations, partial correlation analyses were conducted to control for the effect of age, because age was found to be a variable of interest in preliminary analyses between mentored students and non-mentored students. Results from this analysis revealed that the significant relationships were the same for the two groups with the exception of two correlations that were found to be significant. A significant relationship was found between self-consciousness and mentoring received, $r=-.162$, $p < .05$, (vs. -.117), and between self-efficacy and mentoring received $r=.156$, $p < .05$ (vs. .123) when controlling for age.

Mediation analyses

Hypotheses 7 through 10 were tested using Hayes’ PROCESS in SPSS (AFHayes.com, Hayes, 2013), and were followed by SOBEL statistic analyses to test if
both types of analyses would produce the same results. These hypotheses were based on the central study questions asking if specific facets of personality in doctoral students in the social sciences, could predict their initiation of mentoring relationships with faculty and did initiation in turn predict mentoring received? The predicted mediator in all of these hypotheses was initiation of mentoring by doctoral students. Therefore, the main question was “does initiation of mentoring with faculty members mediate the relationship between personality facets and mentoring received?” Statistically, if there is in fact a mediated relationship between personality facets and mentoring received the direct effect between these two variables would decrease after including initiation as a mediator.

Because it offers a computer intensive, robust analytical technique that can be applied to non-normal data, bootstrapped confidence intervals in Hayes’ (2013) PROCESS is the preferred method for testing mediation. However, other methods (e.g. Sobel, joint significant test) have been shown to provide the same results in over 90% of cases (Hayes & Scharkow, 2013). In this study, both Sobel tests and Hayes’ PROCESS tests were used and resulted in the same findings, as discussed below. Initiation acted as a mediator for 5 of the 10 predicted personality facets including friendliness, assertiveness, self-consciousness, self-efficacy, and achievement striving.

Hypothesis 7 stated that protégé-initiation of mentoring relationships with faculty would partially mediate the relationship between doctoral students’ friendliness and mentoring received. Results of the PROCESS test indicated that there was a significant indirect effect of friendliness on mentoring received through initiation of mentoring relationships, ab= .034, BCa CI [0.02,0.16]. The mediator could account for about a third of the total effect, PM=.36. Results of the Sobel test also demonstrated that the
relationship between friendliness and mentoring received was significantly mediated by initiation of mentoring relationships (Sobel statistics = 2.19, standard error .01, p=.02).

Hypothesis 7a stated that protégé-initiation of mentoring relationships with faculty would partially mediate the relationship between doctoral students’ gregariousness and mentoring received. Hayes’ PROCESS results indicated that initiation did not mediate the relationship between gregariousness and mentoring received. Similarly, the Sobel test demonstrated no mediation.

Hypothesis 7b stated that protégé-initiation of mentoring relationships with faculty would partially mediate the relationship between doctoral students’ assertiveness and mentoring received. Results of HAYES’ PROCESS Test indicate that there was a significant indirect effect of assertiveness on mentoring received through initiation of mentoring relationships, ab= .05, BCa CI [0.05,0.24]. The mediator could account for about two-third of the total effect, PM=.66. Results of the Sobel test demonstrated that the relationship between assertiveness and mentoring received was significantly mediated by initiation of mentoring relationships (Sobel statistic = 3.37, standard error .01, p<.001).

Hypothesis 7c stated that protégé-initiation of mentoring relationships with faculty would partially mediate the relationship between doctoral students’ cheerfulness and mentoring received. Results of Hayes’ PROCESS test indicated that initiation did not mediate the relationship between doctoral students’ cheerfulness and mentoring received. Results of the Sobel test also demonstrated that the relationship between cheerfulness and mentoring received was not mediated by initiation of mentoring relationships.
Hypothesis 8 stated that protégé-initiation of mentoring relationships with faculty would partially mediate the relationship between doctoral students’ self-consciousness and mentoring received. There was a significant indirect effect of self-consciousness on mentoring received through initiation of mentoring relationships, ab= -.05, BCa CI [-.25, -.55]. The mediator could account for 100% of the total effect, PM=1.16, indicating a full mediation. Results of the Sobel test demonstrated that the relationship between self-consciousness and mentoring received was significantly mediated by initiation of mentoring relationships (Sobel statistic $z = -3.29$, standard error .01, p < .001).

Hypothesis 8a stated that protégé-initiation of mentoring relationships with faculty would partially mediate the relationship between doctoral students’ anger and mentoring received. Results of Hayes’ PROCESS test indicated that initiation did not mediate the relationship between doctoral students’ anger and mentoring received. Results of the Sobel test also demonstrated that the relationship between anger and mentoring received was not mediated by initiation of mentoring relationships.

Hypothesis 9 stated that protégé-initiation of mentoring relationships with faculty would partially mediate the relationship between doctoral students’ achievement striving and mentoring received. Results of Hayes’ PROCESS test indicated that there was a significant indirect effect of achievement striving on mentoring received through initiation of mentoring relationships, ab= .06, BCa CI [0.06, 0.22]. The mediator could account for about a two-third of the total effect, PM=.66. Results of the Sobel test demonstrated that the relationship between achievement striving and mentoring received was significantly mediated by initiation of mentoring relationships (Sobel statistic $z = 3.32$, standard error .01, p < .001).
Hypothesis 9a stated that protégé-initiation of mentoring relationships with faculty would partially mediate the relationship between doctoral students’ self-efficacy and mentoring received. Results of Hayes’ PROCESS test indicated a significant indirect effect of self-efficacy on mentoring received through initiation of mentoring relationships, \( ab = .05, \text{ BCa CI} [0.02, 0.18] \). The mediator could account for about two-thirds of the total effect, \( PM = .69 \). Results of the Sobel test demonstrated that the relationship between self-efficacy and mentoring received was significantly mediated by initiation of mentoring relationships (Sobel statistic \( z = 2.38 \), standard error .01, \( p < .001 \)).

Hypothesis 10 stated that protégé-initiation of mentoring relationships with faculty would partially mediate the relationship between doctoral students’ trust and mentoring received. Results of Hayes’ PROCESS test indicated that initiation did not mediate the relationship between doctoral students’ trust and mentoring received. Results of the Sobel test also demonstrated that the relationship between trust and mentoring received was not mediated by initiation of mentoring relationships.

Hypothesis 10a stated that protégé-initiation of mentoring relationships with faculty would partially mediate the relationship between doctoral students’ modesty and mentoring received. Results indicated that initiation did not mediate the relationship between doctoral students’ modesty and mentoring received. Results of the Sobel test also demonstrated that the relationship between modesty and mentoring received was not mediated by initiation of mentoring relationships.

**Hierarchical Regression**

In addition to the tests of the above hypotheses, a series of hierarchical multiple regression analyses were conducted to identify the best set of predictors for both
initiation and for mentoring received. These analyses were conducted based on theories presented in the paper as well as hypotheses tested in this study, and preliminary analyses comparing the two groups of participants (mentors vs. no mentors). As reported earlier, bivariate correlations demonstrated significant relationships between initiation and the following personality facets: assertiveness, achievement striving, self-consciousness, self-efficacy and friendliness. Similarly, bivariate correlations demonstrated significant relationships between mentoring received and initiation and between mentoring received and the following personality facets: friendliness, age, assertiveness, and achievement striving. Based on prior research, hypotheses and correlation results, these variables were entered into a hierarchical regression analysis to determine how much unique variance they added to the model.

In the first model, a three-stage hierarchical multiple regression was conducted with initiation as the dependent variable. Assertiveness was entered at stage one of the regression. Achievement-striving was entered at stage two and self-consciousness was entered at stage three.

Research has previously demonstrated that students are more likely to obtain mentoring if they demonstrated pro-active behaviors towards their target (Turban & Lee, 2007; Waldeck et al., 1997); therefore, out of the personality facets presented above, it seemed that assertiveness would be the most relevant in terms of demonstrating initiation-type of behaviors. While achievement striving has been shown to influence initiation of mentoring (see Aryee et al., 1999), and may help motivate one’s assertive behavior, assertiveness was depicted as a behavior that would most likely influence the actual behaviors of initiation of mentoring. While no one has previously examined
specific facets of personality traits in doctoral students, correlations in this study
demonstrate a significant (< 0.01) relationship between initiation and assertiveness,
achievement-striving and self-consciousness. In addition, preliminary analyses between
the two groups of doctoral students (those who endorsed having a mentor vs. those who
did not) revealed significant differences in age, friendliness, assertiveness, and initiation.
For these reasons, in the model predicting initiation, variables entered included
assertiveness, achievement striving and self-consciousness in that order.

In the second model, to further understand the best set of predictors for mentoring
received, a three-stage hierarchical multiple regression was conducted with mentoring
received as the dependent variable. Initiation was entered in stage one, followed by age
in stage two and friendliness in stage three. Initiation was clearly demonstrated in prior
research, and in correlations presented in this paper, along with preliminary analyses to
be a key component of mentoring received. Age was a variable found to be a
differentiating factor between the group of students stating they had a mentor and those
who did not. While initiation was found to mediate the relationship between friendliness
and mentoring received, it was still considered as a possible predictor for mentoring
received specifically because it was found to be a differentiating variable between the
two groups. Hierarchical regression analyses then helped in further differentiating among
variables that most influence initiation and mentoring received.

The hierarchical multiple regression analyses revealed interesting findings. While
assertiveness contributed significantly to the regression model as a single variable,
$F(1,160) = 19.29, p < .001$ and accounted for 10.8% of the variance, adding achievement
striving explained an additional 4.2% of the variance with a significant R2 change, $F$
(1,159)=7.94, p < .001, for a total of 15% of the variance. However, when self-consciousness was added to the model, while contributing an additional 3% of the total variance and a significant R2 change, F (1,158) = 5.85, p = .017) for an overall amount of variance of 18% (or a moderate effect size), it rendered assertiveness non-significant. It appears that self-consciousness might moderate the assertiveness variable. Therefore results indicated that the best set of predictor variables for initiation included assertiveness, and achievement striving. On the other hand, it appears that being self-conscious would predict a significant lack of initiation.

The hierarchical multiple regression analysis revealed that the best set of predictors for mentoring received included initiation, age and friendliness. Initiation was chosen as the variable most likely to influence mentoring received as depicted through the review of the literature (Aryee et al., 1999; Turban & Lee, 2007; Waldeck et al., 1997) as well as from results in this study from correlations and preliminary analyses comparing the two groups of doctoral students (mentor vs. no mentor). At stage one, initiation contributed significantly to the regression model, F (1, 158)= 34.99, p < .001 and accounted for 18.1% of the variance in mentoring received. Adding age explained an additional 5.7% of variance for a total of 23.8% and contributed significantly to the regression model, F (1, 157) = 11.70, p < .001. Finally, adding friendliness contributed an additional 2.1% of the variance and this change in R2 was significant, F (1, 156)= 4.48, p = .036, for a total variance of 25.9%, or a moderate effect size. Assertiveness and achievement-striving did not contribute significantly to the variance in the set of predictors for mentoring received, once again confirming the role of initiation as a mediator between these specific personality facets and mentoring received.
Table 7. Results of Hierarchical Regression Analysis Predicting Initiation of Mentoring

<table>
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<th>SE b</th>
<th>β</th>
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<td>.09</td>
<td>.22**</td>
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<td>.07</td>
<td>-.20*</td>
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</table>

Note. R² = .11 for Step 1; ΔR² = .05 for Step 2; ΔR² = .03 for Step 3
*p<.05, ** p<.01, *** p<.001

Table 8. Results of Hierarchical Regression Analysis Predicting Mentoring Received

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</tr>
<tr>
<td>Constant</td>
<td>-.32</td>
<td>.68</td>
<td></td>
</tr>
<tr>
<td>Initiation</td>
<td>.18</td>
<td>.03</td>
<td>.41***</td>
</tr>
<tr>
<td>Age</td>
<td>-.04</td>
<td>.01</td>
<td>-.24***</td>
</tr>
<tr>
<td>Friendliness</td>
<td>.06</td>
<td>.03</td>
<td>.15*</td>
</tr>
</tbody>
</table>

Note. R² = .18 for Step 1; ΔR² = .06 for Step 2, ΔR² = .02 for Step 3
*p<.05, ** p<.01, *** p<.001
CHAPTER V
DISCUSSION

The current study adds to the literature on mentoring, and more specifically on mentoring in higher education, by testing several mediation models proposing that the initiation of mentoring relationships by doctoral students with faculty mediates the relationship between specific personality facets and mentoring received. While research on mentoring has been extensive in business settings, it has been more scant in its applications to higher education, especially at the graduate and doctoral level. Research on mentoring in higher education, specifically on how personality factors influence such relationships was depicted as a gap in the mentoring literature (Campbell & Campbell, 2007; Green & Bauer, 1995; Turban & Lee, 2007). As such, this study contributes to our understanding on how specific personality facets influence the degree of mentoring doctoral students receive and such understanding can help us address some of the potential barriers that doctoral students face when seeking mentoring. Furthermore, specific to the field of counseling psychology, this study can help inform some of the ways in which we can be more intentional in ensuring that doctoral students who want to obtain mentoring during their studies are able to do so.

In graduate education, mentoring has been shown to contribute positively to student retention, degree completion, career development, professional identity as well as transitions of new professionals into the field (Campbell, 2007; Huwe & Johnson, 2003;
Johnson, 2007). Several studies have promoted mentoring as a way to address specific challenges in our field such as hiring and retaining minority faculty, addressing the lack of research in our field and increasing retention in graduate programs (Hollingsworth & Fassinger, 2002; Koro-LJungberg & Hayes, 2006; Sedlacek et al., 2007). Several studies have promoted mentoring as a way to address specific challenges in our field such as minority faculty, research lack of in our field, (cite). Furthering our understanding in how mentoring relationships develop can help us become more intentional in providing opportunities for mentoring students, set expectations that students may have to initiate those relationships, and providing a supportive environment for mentoring.

While mentoring has been shown to be very beneficial to students, including increased research productivity (Johnson, 2007), higher degree completion (Tenenbaum et al., 2001), its prevalence has been reported to be lower than expected (Johnson, 2014; Mullen, 2007) leaving us to question what barriers stand in the way of such key relationships. Several barriers have been presented as preventing such relationship from developing including lack of time, lack of environmental support and rewards, and personality factors (Ehrich et al., 2004; Johnson, 2014; Kram, 1988). This study followed research recommendations put forth by Turban & Lee (2007) who suggested that exploring the specific influence of personality facets may be helpful to help us “pinpoint the source of personality effects” (p. 25). Furthermore, Lunsford (2012) suggest that doctoral education is an ideal environment to study mentoring as it is a context in which mentoring is proclaimed to exist and be offered with relative frequency.

To address the main study questions, which were to examine the relationships between specific doctoral students’ personality facets and mentoring received, as well as
testing initiation of mentoring as a mediator between doctoral students’ personality facets and mentoring received, three levels of analyses were conducted. First, relationships between personality facets and initiation as well as mentoring received were examined using Pearson’s correlations. Second, initiation models were tested using Hayes’ PROCESS (based on bias-corrected bootstrapping, Hayes 2013) and finally, hierarchical regressions analyses were conducted to propose the most parsimonious models to determine predictors of initiation of mentoring by doctoral students and mentoring received by faculty in the social sciences. In addition, mediations results were confirmed using the SOBEL test application. This chapter discusses results from these analyses and the overall findings, implications for theory and for graduate programs, as well as suggestions for future research, and finally reviews the limitations encountered in the study.

Pearson’s correlations were used to test the first six hypotheses, which were to test the correlations between each specific personality facet and initiation of mentoring and between each personality facet and mentoring received. Results supported half of these hypotheses and demonstrated significant correlations between personality facets and initiation (friendliness, assertiveness, self-consciousness, self-efficacy, achievement striving) and between personality facets and mentoring received (friendliness, assertiveness, achievement striving). The strongest finding was a confirmation of the first hypothesis, demonstrating a significant positive relationship between initiation of mentoring by doctoral students and mentoring received. The correlation coefficient of .427 indicated a large effect size. Cozby (2001) provided a general guide to interpreting correlations to indicate effect sizes suggesting that near .15 indicates a small effect size,
near .30 indicates a medium effect size, and above .40 indicates a large effect. Initiation had been proposed by many as a key factor in the development of mentoring relationships (Kram, 1988) and suggested to be especially key in higher education (Huwe & Johnson, 2003; Mullen, 2007). This result was also consistent with past research, including Clark et al. (2000) who found that 43% of protégés in their study with 787 recent clinical psychology graduates stated that they had initiated the mentor relationships, while 35% stated the relationship was mutually initiated and only 14% stating that they were assigned. The current study expands these findings by demonstrating that initiation by doctoral students is a key component of ensuring the receipt of mentoring by faculty. Understanding the importance of initiation as a key mediator will help us better prepare students for receiving the mentoring they want. Similarly, it also serves to inform program faculty and administrators about what is needed to best promote and provide an environment supportive of the development of mentoring relationships.

Consistent with the second hypothesis, several facets of extraversion were significantly related to both initiation and mentoring received. These included a significant relationship between friendliness and initiation, a correlation coefficient of .199, indicating a small effect, and between friendliness and mentoring (.219) also indicating a small effect. A significant relationship was also found between assertiveness and initiation, the correlation coefficient suggesting a medium effect, and between assertiveness and mentoring received, the correlation coefficient suggesting a small effect. Past research demonstrated inconsistencies related to this finding. For example, Aryee et al. (1999) found a significant relationship between extraversion and mentoring received in their sample of 184 Hong Kong employees. In addition, they found this
relationship to be mediated by protégé-initiated mentoring relationships. They measured extraversion using a 10-item version of the Eysenck Personality Questionnaire (Eysenck, Eysenck and Barrett, 1985) measuring multiple facets of extraversion. Unlike Aryee et al., Bozionelos and Bozionelos (2010), also examined mentoring received, in a sample of 272 university employees in the Northwest of England, but found no significant relationship between mentoring received and extraversion. Using the Five-Factor Model personality framework, they hypothesized that mentoring received would be positively related to extraversion, openness, agreeableness, and conscientiousness and that mentoring received would be negatively related to neuroticism. Like Aryee et al., they did not assess specific facets of these personality traits, but measured the overall trait with the British edition of the Cattell 16PF5 (Cattell, Cattell and Cattell 1993). Interestingly, they found a significant relationship between openness and mentoring received and between agreeableness and mentoring received. They found no significant relationship between the other three personality traits (neuroticism, extraversion and conscientiousness) and mentoring received. By exploring specific facets of extraversion in this sample, we are able to extrapolate the specific characteristics, or behaviors of extraversion that may explain an individual (doctoral students in this case) influential behavior that may lead them to obtain mentoring. In this case, we find that while cheerfulness and gregariousness are facets of extraversion, it is students’ engagement in assertive and friendly behavior that most likely predict their initiation of mentoring and in turn influence their receipt of such mentoring. This can be helpful because while extraversion facets such as gregariousness may be difficult to change, assertiveness can be applied in one’s communication style.
Hypothesis three tested the correlation between two facets of neuroticism (self-consciousness and anger) and initiation of mentoring and with mentoring received, and was partially supported. Results indicated a significant negative relationship between self-consciousness and initiation of mentoring, suggesting a medium effect size. No significant relationship was found between self-consciousness and mentoring received, or between anger and initiation, or between anger and mentoring received. Bozionelos and Bozionelos (2010) also hypothesized that mentoring received would be negatively related to neuroticism and while they did not test specific facets of neuroticism, they found no significant relationships between the two. In this study, self-consciousness only appears to be related to mentoring received in that doctoral students who endorse a high level of self-consciousness do not initiate mentoring relationships with faculty and in turn, without a high level of initiation, they do not receive mentoring indicating a full mediation model. Understanding this can help us set expectations for initiation of mentoring, inviting students to approach faculty for mentoring, and may help decrease the impact of one’s self-consciousness.

Hypothesis four tested the correlation between two facets of conscientiousness (self-efficacy and achievement striving) with initiation of mentoring and with mentoring received, and was also partially supported. Results found significant positive relationships between self-efficacy and initiation of mentoring, suggesting a small effect size, between achievement-striving and initiation of mentoring, suggesting a medium effect size, and between achievement-striving and mentoring received, suggesting a small effect size. In organizational research, conscientiousness was found to correlate to job performance (Bozionelos and Bozionelos, 2010). Similarly it would seem likely that
individuals who choose to pursue a doctorate degree would be achievement oriented (and striving) and perhaps more likely to invite opportunities for improvement or advice seeking. Prior studies have found significant correlations between need for achievement and mentoring received (Fagenson, 1992) and between Type A personality and initiation of mentoring (Aryee et al., 1999). Bozionelos and Bozionelos (2010) did not however find conscientiousness to be significantly related to mentoring received.

Hypothesis five tested the correlation between two facets of agreeableness (trust and modesty) with initiation of mentoring and mentoring received. This hypothesis was not supported. Similarly, hypothesis six suggested that international students who had endorsed higher modesty would be negatively related to protégé-initiation of mentoring with faculty. While this study sample was not large enough to assess specific differences between international and domestic doctoral students, it is reasonable to theorize that international students may endorse different values. As such, this would be a valuable future area of research.

Hypotheses seven through ten tested mediations between specific personality facets and mentoring received. These hypotheses were based on the central study questions asking if specific facets of personality in doctoral students in the social sciences predict their initiation of mentoring relationships with faculty and does that in turn predict mentoring received? The predicted mediator in these hypotheses was initiation of mentoring by doctoral students and as such initiation served as the explanation connecting specific personality facets and mentoring received.

Five of the ten hypotheses proposing that initiation of mentoring would mediate a relationship between ten specific personality facets and mentoring received were
supported. These five personality facets included friendliness, assertiveness, self-consciousness, achievement striving and self-efficacy. Assertiveness, friendliness, and achievement striving were both directly and indirectly related to mentoring received. In essence, students who endorse these personality facets also are likely to endorse mentoring received, mostly explained through their initiation of a mentoring relationship however a significant relationship still exists without their initiation. However self-consciousness and self-efficacy only had a significant indirect relationship with mentoring received through initiation, indicating a full-mediation, meaning that in this case students who endorse either high self-efficacy or high self-consciousness are only endorsing mentoring received through their initiation of mentoring relationships. Without initiation, students who endorse either self-efficacy or self-consciousness are unlikely to endorse mentoring received. Therefore, this helps us further understand the key role that initiation plays in ensuring that doctoral students receive mentoring.

Analogous to these findings, Aryee et al., (1999) found that protégé-initiated mentoring relationships mediated broader personality factors (extraversion, work locus of control and Type A personality) with mentoring received. Initiation then is an important variable that helps explain how these specific personality facets lead one to received mentoring. These results suggest complex relationships between these personality facets, initiation and mentoring received and warrant further research consideration, particularly in environments where mentoring is beneficial but not formalized.

Finally, results from hierarchical regression analyses suggested that initiation of mentoring with faculty was best predicted by a combination of assertiveness, and achievement striving. However, adding self-consciousness as a predictor of initiation
while increasing the overall variance, appeared to suppress assertiveness which is no longer significant in this model (see Table 7). It may in fact be described as a moderator in that it changes the strength of the assertiveness variable on initiation and this could present a new model to test. A moderator can increase or decrease the strength of a relationship or change its direction. In this case, it appears that self-consciousness may be significantly decreasing the strength of the relationship between assertiveness and initiation. Similarly, it would be interesting to explore whether self-efficacy might also be a moderator variable between achievement striving and initiation. This might further explain the full mediation found in prior analyses between both self-efficacy and self-consciousness and initiation of mentoring relationships.

The best predictors for mentoring received included age, initiation and friendliness. While prior research has demonstrated that initiation is an important variable in mentoring received (Huwe & Johnson, 2003; Mullen, 2007), the findings related to specific facets of personality are new and present several implications as well as opportunities for further research as discussed below. Similarly, age presents an unexpected variable in its influence on mentoring received, and warrants further study.

As predicted, overall findings demonstrated that initiation of mentoring by doctoral students is a key factor in students received mentoring. Similarly, as predicted, results suggested that initiation mediates the relationship between specific personality facets and mentoring received. Not surprisingly, facets in personality traits that are known to be key in how individuals manage personal relationships such as extraversion and neuroticism were found to be significantly related to mentoring received. Moreover, this study went a step further by examining the specific facets within those personality
traits that may be more influential in students’ initiation of mentoring. These specific facets include assertiveness, friendliness, achievement striving and self-consciousness. While assertiveness contributes positively to initiation of mentoring, self-consciousness appears to moderate the relationship and result in a lesser degree of initiation. In fact it appears that being self-conscious significantly decreased the strength of the relationship between assertiveness and initiation of mentoring perhaps acting as a moderator.

Interestingly, in this sample, age was an unexpected factor that differentiated those who stated they had a mentor and those who stated they did not. And while those who stated they had a mentor did also endorse a higher level of initiation, the two groups did not differ significantly in either self-consciousness or achievement striving. They also showed a significant difference in level of friendliness and assertiveness. It is interesting to note however that in the overall sample, age is positively correlated with assertiveness, achievement striving, and negatively correlated with self-consciousness and anger, suggesting perhaps that older students may be better able to manage their emotions and focus on their goals and studies. On the other hand, it is possible they may also be juggling multiple roles, leaving them with less time to spend on campus initiating new relationships. Furthermore, being an older student may also present some unique challenges in terms of norms and expectations.

Much research on older workers has been conducted in the field of organizational behavior. With the ending of the traditional career path where an employee joined an organization and stayed with the same organization for life (Hall & Mirvis, 1996), today’s workplace has presented new challenges in terms of career management. While older workers can face age related discrimination, research has also demonstrated clear
benefits to hiring older workers such as continued improved performance in many careers, as well as higher commitment, fewer absences and less turnover. However, challenges also exist in the workplace for older workers and those around them, including managing age norms and expectations. In terms of mentoring, Levinson’s conception of the mentor was, until recently, portrayed as being between a younger protégé and an older, wiser, and more experienced mentor. While very little mentoring research has focused on age, Whitely, Dougherty, and Dreher (1992) found that age influenced the amount of career mentoring protégés received, stating that older protégés endorsed receiving less career mentoring than younger ones. This could be explained by the fact that perhaps mentor and protégé pairs that are similar in age may be more likely to develop a relationship based on similarities rather than on an intentional goal to find a career mentor. Finkelstein, Allen, and Rhoton (2003) suggested that Lawrence’s organizational theory of age can help explain the influence of age on mentoring. The theory states “age distributions drive the development of age norms that produce age effects” (p. 252). Indeed, violations of age norms (what is “normal” in a particular field or organization for a particular job) can result in social responses at either a micro or macro level and can affect relationships among workers. Judgments can be made because of violated norms and may result in certain behaviors. For example, it is possible that while considering whether or not to mentor an older student through the lens of social exchange theory, (subjectively analyzing costs and benefits of a relationship versus other alternatives) a faculty may clearly view benefits from a possible relationship, however might anticipate judgment from colleagues for mentoring someone viewed as breaking an age norm (he or she is too old to pursue a tenure-track faculty career and may
question the mentor’s motivation) and ultimately decide not to encourage such a relationship. Furthermore, Finkelstein et al. (2003) presented results from a content analysis they conducted to depict advantages and disadvantages of similar-age mentoring. Advantages included shared experiences and ability to relate, and opportunities for learning for both mentee and mentor. Disadvantages included relationship boundary issues and possible competition [between mentor and mentee] further adding potential barriers.

In terms of this study, this may also help explain some of the variance not explained by the findings. While doctoral students initiation may account for nearly 20% of the variance explained in obtaining mentoring, many variables that contribute to mentoring are left unexplained. Since mentoring relationships are complex personal and developmental relationships, mentor related factors will also be part of the equation. Mentor personality traits and facets likely also influence the initiation and development of such relationships. In addition, the environment in which these relationships occur is also likely a key factor in their prevalence. As noted in the literature review, Kram (1988) predicted that the environment in which mentoring relationships occur would have a strong influence on mentoring. For example, she suggested that high competitive and low trust environments would not support the development of mentoring and as noted above, violation of norms would influence workers’ behavior. For example, a highly competitive environment that rewards faculty mostly on the basis of research productivity may view mentoring as a poor investment of time. In addition, cross-gender relationships may add another layer of challenge and be “frowned” upon through unspoken norms in an academic department, fearing perhaps the judgment of other faculty, or the discomfort
of unclear boundaries if the pair relates more on a personal level. To think of this in
terms of social exchange theory, the benefits of entering a mentoring relationship with an
older, non-traditional student, may not outweigh the costs or possible risks as viewed by a
potential faculty mentor.

Implications for theory

Kram’s theory of mentoring includes initiation as the first stage of the
relationship. While her original study that led her to her theoretical framework for
mentoring was conducted in an organizational setting, this study was conducted in a
higher education environment and also demonstrated that initiation was a key component
to the development of mentoring relationships. In fact, initiation was shown to serve as a
mediator between specific personality facets and mentoring received and as a key
predictor of mentoring received. This finding reinforced her finding in that initiation is
the initial stage of mentoring relationships between doctoral students and faculty, at least
in the development of informal mentoring relationships. As such, it would be helpful to
understand how the stages of mentoring as depicted in Kram’s theoretical framework
would change if graduate programs implemented formal mentoring programs to ensure
access to mentoring for all their students. Would initiation still be a separate stage? If
not, would different personality facets become more relevant and influential in mentoring
relationships? While formal mentoring programs would ensure the start of a mentoring
relationship, it would not necessarily predict its success, and it could be hypothesized that
specific (perhaps different?) personality facets would be related to mentoring received.

Social exchange theory posits that there exists a subjective cost-benefit analysis
when one considers investing in a relationship (Emerson, 1976) and may help us
understand why two individuals choose to initiate a relationship. This may offer an explanation as to why a faculty member may be more likely to engage in mentoring behavior with students who display initiative, as this could be interpreted as a potential future benefit in their possible relationship. Similarly, learning theory could also help us understand the benefits that one derives from a mentoring relationship in that reflection, an important part of learning theory (Price & Money, 2002) has been discussed as an important and growth-promoting aspect of mentoring, and perhaps even more so in non-traditional age mentoring since one of the advantages found in mentoring pairs of similar age include opportunities for learning for both mentor and mentee (Finkelstein et al., 2003).

As discussed earlier, Tinto’s (1993) integration theory states that graduate persistence is “shaped by the personal and intellectual interactions that occur within and between students and faculty and the various communities that make academic and social systems of the institution” (p. 231). Furthering our understanding of these key relationships between students and faculty can help us address crucial issues around persistence and degree completion. It has been shown that somewhere between 40-60% of students who start a doctoral program do not complete it. This can be an enormous cost to programs both in terms of monetary investment and time (Creighton, Creighton, & Parks, 2010). Furthering our understanding of influential factors, such as mentoring that can help us improve retention is therefore in our best interest.

Implications for Doctoral Programs

The findings in this study have several implications for doctoral programs in the social sciences regarding the practice of mentoring. Implications can be divided into
three areas, namely, implications for students, especially in light of findings in this study, implications for potential mentors, and implications for doctoral programs (in terms of its environment). Implications for doctoral students center on communicating expectations to students that they may have to initiate mentoring relationships if they desire to find mentors, especially when programs rely on informal mentoring. Furthermore, if students find it difficult to be assertive regarding their mentoring needs, or have issues around self-consciousness that may keep them from initiating these relationships, they may have to seek some help or training in these areas. Implications for mentors center around being open and encouraging of mentoring relationships, being aware of the time commitment mentoring requires, and negotiating rewards for mentoring students in their programs. Finally, implications for programs include developing a commitment to mentoring that is reflected in their cultures and that offers incentives for faculty to mentor.

Findings in this study revealed that initiation by doctoral students is a key variable to obtain mentoring. In turn, assertiveness was found to be a key predictor to initiation, while self-consciousness was found to predict the lack of initiation, perhaps as a moderator between assertiveness and initiation. Knowing this can help inform students that, to obtain mentoring, they may have to initiate this process and demonstrate pro-social behaviors towards potential mentors as well as demonstrate assertiveness in obtaining it. Similarly, knowing that being self-conscious may keep them from initiating and pursuing the mentoring they want can help students address this through counseling or other resources. Furthermore, if opportunities for mentoring are limited in their own programs, they may decide to pursue a formal mentoring program offered through a
professional organization. They may also choose to pursue individual counseling to address issues around self-consciousness, or participate in a graduate students support group if one is offered. Obtaining encouragement through a support group may help students overcome barriers such as self-consciousness. To encourage initiation of mentoring relationships by students, doctoral programs can communicate the expectations that students will want to initiate mentoring relationships with faculty. Benefits of mentoring can be explained at orientation, along with the communication of expectations that students may need to initiate informal mentoring. Setting these expectations early, may help students overcome either a lack of assertiveness, or help to decrease their self-consciousness about initiating relationships with faculty.

Communicating support for mentoring and benefits of mentoring to students and faculty alike at orientation may be encouraging of mentoring relationships because it communicates a commitment to mentoring from the program. Knowing that assertiveness is a key predictor of initiation, programs may encourage students to seek assertiveness training (a skill that can be worked on in individual or group counseling), if culturally appropriate (Kashima, Kim, Gelfand, Yamaguchi, Choi, & Yuki, 1995). Similarly, students can seek help to address issues around self-consciousness if they believe this might keep them from initiating mentoring relationships with faculty.

Self-consciousness is posited to have two main components, private self-consciousness and public self-consciousness. Private self-consciousness refers to an awareness of one’s own thoughts and feelings, whereas public self-consciousness refers to awareness of the self as a social object and possible public scrutiny. High public self-consciousness has been associated with high social anxiety (Stein, 2015). While self-
consciousness is a facet of neuroticism in the FFM, it does not measure specific aspects of self-consciousness, however it is likely that as it relates to initiation of mentoring relationships, it refers to public self-consciousness. While self-consciousness is a specific facet of a personality trait, individuals are able to change and address these traits and facets through counseling. In fact, with our increased knowledge of neurocircuitry and neurochemistry, studies have shown improvement in social anxiety with treatments such as group CBT, or emotional regulation techniques (Stein, 2015).

Another implication for students may be to recommend that they seek multiple mentors. Students are likely to have different mentoring needs, for example, career needs related to developing research skills, or clinical mentoring needs related to become a stronger supervisor. Having multiple mentors addressing different need areas may be more realistic than expecting that one mentor fulfill all the mentoring needs of a student. Similarly, students may want to consider joining a professional organization. Many professional organizations offer a student affiliate option and many offer mentoring programs. Students can also consider developing peer-mentoring relationships. Students who are a few years ahead in a program can offer valuable knowledge and guidance as well as encouragement. Many successful examples of peer mentoring programs have been portrayed in the mentoring literature (Chesler & Chesler, 2002; Collings, Swanson and Watkins, 2014; Woods, Poropat, Barker, Hills & Borbasi, 2013). Similarly, students in the same cohort can provide support for each other as well as knowledge and expertise in different areas. By the time students enter a doctoral program many have obtain different life and work experiences that can help them be effective peer mentors. Similarly, it is likely that students who reach the start of a doctoral program already have
benefitted from some mentoring and it may be helpful to them to continue to invest in those relationships. Sending an occasional update on their progress, or simply checking in with a mentor are small gestures that can continue to nurture existing mentoring relationships. Finally, it is well for students to remember that as in any relationships, investing time and effort is a requirement for their success.

While this study focused on personality facets of students, it is clear that mentors also have a strong influence on the formation and development of mentoring relationships, as do program environments. Research on the influence of mentors’ personality is scant, however, Bozionelos (2004) study of personality traits in mentors revealed that openness was a significant trait in the provision of mentoring, as was having benefitted from prior mentoring. Again, knowing that mentoring provides benefits, not only to protégés but also to mentors can help motivate potential mentors to be available and open to mentoring students. Finally it is important for potential faculty mentors to also understand the time demand of mentoring relationships and as such to no over-extend themselves by trying to become a mentor to all their students. Mentoring relationships take time and commitment and time has been posited to be one of the biggest barriers to mentoring.

Programs’ commitment to mentoring may also have a large impact on its prevalence. As such, graduate programs may benefit from assessing their own commitment to mentoring. It is important for mentoring to be part of the overall mission of a department as the required need for time and other resources is significant and the commitment to mentoring must come from top administration. Once a decision and commitment to mentoring is made, it can inform the direction and form (e.g., informal
versus formal program) mentoring can take for implementation. To communicate their commitment to mentoring, programs must provide incentives for mentoring, as it is a commitment that takes both time and continued efforts, especially from mentors. By providing incentives, or fewer demands on their time, faculty may be more open to mentoring and may even look forward to it (Thomson, Nakamura, Siegel, & Csikszentmihalyi, 2014). Such incentives could include establishing a grant fund for collaborative research, establishing an award for mentoring to acknowledge outstanding mentors (Wright & Wright, 1987) offering merit pay, or providing adjustments to teaching loads (Mullen, 2003). By the same token, if programs are serious about implementing mentoring, it should also be tied to promotion and tenure. Once a program has decided to either encourage more informal mentoring between its students and faculty or to develop a formal program, and it has committed to it by providing incentives for mentors, steps to ensure its success must include developing buy-in and providing continuous training. Buy-in for mentoring could be as easy as communicating the many benefits that research has demonstrated for both mentees and mentors, including increased research productivity for both mentors and mentees, a renewed sense of purpose and commitment for mentors, and increased research visibility for the mentor when his/her mentee becomes productive in their own research, as well as provide mentors a way to give back (reciprocity) with gratitude, (Simões & Alarcao, 2014; Kamvounias, McGrath-Camp, and Yip, 2008) and perhaps even a way to share and practice one’s strengths.

Furthermore, as our programs are diversifying, a commitment to multiculturalism must be made in order to provide mentoring equally to all students (Davis, 2008),
especially as role models for many minority students continue to be underrepresented (Eby, 2013). For example, Park-Saltzman and colleagues (2012) suggested specific strategies to train faculty who mentor international students, as international students bring challenges that faculty may not be experienced or familiar with such as acculturation issues (Singaravelu & Pope, 2007; Wedding et al., 2009). While providing training is necessary, being open to change and approaching mentoring as an opportunity for learning and growth is also a necessary condition for mentors. Many (e.g., Eby, 2013; Solem & Foote, 2009; Johnson, 2008) have offered recommendations for mentoring training, including integrating such topics as navigating multiple roles that mentors may encounter (advocate, gatekeeper, evaluator, supporter, etc.). Finally, incorporating outcome measures is also an important step in program implementation and evaluation.

Suggestions for future research

It became clear while working on this study that our field is unique in that it presents a unique dichotomy that may also influence the type of mentoring one might need. This is likely a finding specific to our field and its dichotomy. While we espouse a scientist-practitioner model, there are typically two distinct career paths that often do not seem to take on the same focus. Those who choose to go in traditional academic careers typically focus on research while those who choose to pursue careers in clinical practices typically focus on clinical skills and application to practice. While these practices are informed by research, and while some of the research focuses on clinical outcomes, there has been some discourse about the noted decline in outcomes-based research in the field of counseling psychology (e.g., Lichtenberg, 2011). Much of the training in counseling psychology is focused on obtaining a large number of clinical hours in order to obtain an
APA accredited internship. Clinical supervision may lead itself to a natural evolution to a mentoring relationship. However, in order to obtain mentoring in research, it appears students may have to seek and initiate this outside of program requirements. Understanding if research mentoring is indeed less prevalent than mentoring in clinical areas could present another future research opportunity for the field of Counseling Psychology.

The finding of age as a significant difference between doctoral students who reported having a mentor and students who reported not having a mentor is also something that warrants further study. As noted by Finkelsteing, et al. (2003), the changes occurring in the workplace such as the advent of multiple career paths and the protean career will increase newcomers in the workplace that may be older and non-traditional as they may start a second or third career. In turn this may result in mentors that are younger (established in their first career) and mentees that are older. Increasing our understanding of age effects affecting mentoring relationships may be helpful in addressing barriers to mentoring and this presents another opportunity for future research. Qualitative studies could help explore some of the questions and variables discussed earlier in this chapter.

Another potential direction for further research is to examine other personality facets, especially those that might be related to facets found to be significant in this study. Focusing on personality facets is helpful to help understand and guide how we can be more intentional about addressing barriers to mentoring. For example, knowing that assertiveness is the facet of extraversion that is the most relevant predictor to initiation of mentoring can help us develop and communicate expectations to students as well as
training programs. Similarly, further understanding of self-consciousness and its possible role as a moderator between assertiveness and initiation of mentoring would help us address another possible barrier to mentoring.

Finally, it is clear that mentoring relationships involve two sides and that personality facets of the mentor also influence the development of these relationships. Some research has started to explore mentors’ motivations as well as personality. For example, Bozionelos (2004) investigated that influence of personality traits on mentoring provided in a group of university employees and found that only openness was significantly related to mentoring provided. However, this is very limited and has not been conducted with faculty. In addition, the interaction between both sets of personality facets is also an area that warrants further study.

Limitations

Like all studies, this study has some limitations that must be acknowledged. First, the use of self-report measures introduces possible self-selection bias with participants who may already have had an interest, positive experiences, or more intense feelings about mentoring. This could explain the imbalance between doctoral students who reported having a mentor versus those who did not. Utilizing a variety of methods for data collection such as interviews could be an approach used in future research that would lead to the possibility of more comprehensive and robust exploration of data. For example, a study using mixed methods would decrease the reliance on one type of data collection, and could help explore other variables such as age that were found to be of significance in this study.
In addition, while the sample was large enough for the type of analyses conducted and drop out was not a major concern, sampling methods relied on snowball techniques and resulted in a sample of convenience. Doctoral students in social sciences represent a specific group and may endorse specific personality facets perhaps not as typical in other student populations. For example, there was some skewness detected in achievement-striving, perhaps not surprisingly given that pursuing a Ph.D. is a high risk and long-term investment that might predict a high level of achievement-striving. Furthermore, the majority of participants were enrolled in a psychology program at a public institution. The majority of the sample was also Caucasian, heterosexual, and U.S. citizens, therefore limiting the generalizability of the results. Certain hypotheses, such as hypothesis six which was that international students who had endorsed higher modesty would be negatively related to protégé-initiation of mentoring with faculty, and findings such as age being a variable of interest would warrant further research with a larger and more diverse sample of doctoral students.

The cross-sectional design also presents limitations, particularly in its ability to predict any causal relationships among variables. Such causality cannot be concluded without experimental or longitudinal research designs. For example, longitudinal research could help us explore how time in program or specific classes or training may influence the development of mentoring relationships. This may be especially important since mentoring relationships are depicted to be developmental (J. Johnson, 2014) and likely to change with time. Hence collecting data at different time points in the program could help us pinpoint the development of mentoring relationships and better differentiate between the different types of mentoring, or between different functions provided as
some have mentioned that career functions are typically provided prior to psychosocial functions (J. Johnson, 2014; Kram, 1988).

Measures used also presented some limitations. Having a mentor was measured using a single close-ended question, and resulted in intentionally missing data on the group of doctoral students who reported not having a mentor. In future studies, a non-applicable option could be added to the mentoring received scale. It is possible for example that someone may state they don’t have a mentor but may have identified a faculty member that serves as a role model, a more passive role that may still provide some benefit to a doctoral student as they develop their professional identity. It may also be difficult for some respondents to differentiate between a lucky match with an advisor (personality match?) and their own efforts to seek a mentor through initiation of their own.

Although the MQ-9 has been shown to be a reliable instrument, most of its reliability studies were done with samples of organizational employees, as was the initiation scale. Developing or refining existing initiation and mentoring scales to include variables more applicable to higher education samples and thereby increasing reliability in this specific population, is another way to improve the research and would result in more robust data collection. Finally, the primary nature of this study is theoretical and as such developing best practices for applications of mentoring in doctoral programs would be a nice addition to this study.

Conclusion

The current study adds to the literature on mentoring in general, and in programs in the social sciences by helping us understand some of the barriers that may prevent
doctoral students from receiving the mentoring they often want. Mentoring in graduate programs has been found to be positively related to retention, program satisfaction and research productivity. Results demonstrated that initiation of mentoring by doctoral students is a key component of mentoring received and that initiation serves as a mediator between specific personality facets and mentoring received. These facets include assertiveness, friendliness, achievement striving, self-consciousness and self-efficacy. Furthermore, assertiveness and achievement striving were found to be key predictors of initiation and that in turn initiation and age are key predictors in mentoring received. Self-consciousness however was also found to render assertiveness non-significant when added as a predictor for initiation. As such it may serve as a moderator between assertiveness and initiation and warrants further exploration. With this understanding and increased awareness of some influential factors of successful mentoring, programs can be more intentional about communicating expectations to students. For example, by knowing that initiation of mentoring relationships by students is a key predictor of mentoring received, programs can communicate early in the program (i.e. orientation) that it is important for students to be assertive in seeking mentoring opportunities. In addition, programs can provide incentives to faculty who desire to mentor, and communicate to faculty that mentoring is a program priority and that their time devoted to mentoring will be rewarded. This may in turn encourage faculty to be more available to develop positive relationships with doctoral students. Training programs for both faculty and students could also be developed, or mentoring opportunities could be integrated into existing curricula. Finally, formal mentoring programs have been developed and outcome assessment has shown that they can be a very effective way to
provide successful mentoring to various groups of students. These and other similar initiatives will in turn result in increased mentoring opportunities in doctoral programs and help increase retention and satisfaction in our programs and may well rejuvenate research in our field of counseling psychology.
REFERENCES


Wedder, Orrego, Plax, & Kearney (1997). Graduate student/faculty mentoring relationships: Who gets mentored, how it happens, and to what end.


APPENDIX A

FIGURES

Figure 1. Graphical representation of the general mediation model

- $a$ = effect of personality traits on protégé’s initiation
- $b$ = effect of protégé’s initiation on mentoring received
- $c$ = total effect of personality traits on mentoring received without mediator
- $c'$ = total effect of personality traits on mentoring received with mediator
Figure 2. Multiple regression model of personality traits facets (in doctoral students) and protégé-initiated mentoring with faculty
APPENDIX B

DEMOGRAPHIC QUESTIONNAIRE

1. What is your gender?:

2. What is your age?:

3. How do you identify?
   __ White/Caucasian
   __ Black/African American
   __ Asian American
   __ American Indian/Alaskan Native
   __ Native Hawaiian/Other Pacific Islander
   __ Multiracial, please specify ___________________
   __ Other, please specify _______________________

4. Are you of Hispanic or Latino descent?   Yes  No

5. What is your doctoral field of study?
   How many semesters have you been enrolled? __
   Year in program? ___

6. What is your type of institution? __ Private __ Public __ Professional

6. What is your country of citizenship?

7. What is your native language?
8. What is your sexual orientation?

- Heterosexual
- Bisexual
- Homosexual/Lesbian/Gay
- Other: please specify _______
APPENDIX C
INTRODUCTION TO SURVEY AND MFQ-9

Based on the definition provided, please indicate if you believe you have a faculty mentor:

*Mentoring is a personal developmental relationship with an experienced faculty member who may or may not be your advisor and may or may not be in your own program, but who serves as a role model, guide, teacher and encourager and at times provides you with personal and career counsel and advise. In addition this mentor might involve you in their research endeavors or cooperate on professional presentations and/or introduce you to colleagues in your field of study.*

I have a faculty mentor   Yes   No

If no, please indicate the reason you believe you do not have a mentor [open ended]

If you do not have a mentor please skip to section x on initiation of mentoring

If yes, is your faculty mentor available to you at mutually convenient times?

How and how often do you communicate with your mentor? Check all that apply __ daily __ weekly __ monthly __face to face __email __texts

Does your mentor share personal experiences with you?

Do you cooperate on research projects with your mentor?

Do you feel that you mentor is open and appreciate of your differences?

Does your mentor provides you with critical feedback and challenges you?
Do you think having a mentor is important to your career? Why or why not?

Do you feel that your program encourages mentoring between students and faculty? Why or why not?
MFQ-9 (Castro, Scandura and Williams, 2004)

DIRECTIONS: For each of the following 9 statements please indicate the degree to which you feel it applies to you in graduate school, using the following responses:
Strongly disagree, disagree, neutral, agree, strongly agree

Vocational Support
1. My mentor takes a personal interest in my career.
2. My mentor helps me coordinate professional goals.
3. My mentor has devoted special time and consideration to my career.

Psychosocial support
4. I share personal problems with my mentor.
5. I exchange confidences with my mentor.
6. I consider my mentor to be a friend.

Role modeling
7. I try to model my behavior after my mentor.
8. I admire my mentor’s ability to motivate others.
9. I respect my mentor’s ability to teach others.
APPENDIX D

SURVEY QUESTIONS

Survey questions for initiation of mentoring by graduate students

Adapted measure (Turban & Dougherty, 1994) for protégé’s initiation of mentoring

DIRECTIONS: Please respond to the following questions indicating one of the following: Strongly disagree, disagree, neutral, agree, strongly agree

1. I have looked for ways to become acquainted with faculty

2. I made personal efforts to have my work (i.e., research) become visible to a faculty member

3. I have taken the initiative to seek guidance, counsel and advice from a faculty member

4. I have taken the initiative to find a mentor in my graduate program
APPENDIX E

IPIP-NEO-120

(Johnson, 2014)

**Extraversion (E) Facets**

E1: Friendliness

Make friends easily

Feel comfortable around people

Avoid contacts with others

Keep others at a distance

E2: Gregariousness

Love large parties

Talk to a lot of different people at parties

Prefer to be alone

Avoid crowds

E3: Assertiveness

Take charge

Try to lead others

Take control of things

Wait for others to lead the way

E6: Cheerfulness

Radiate joy
Have a lot of fun

Love life

Look at the bright side of life

**Neuroticism (N) Facets**

N2: Anger

Get angry easily

Get irritated easily

Lose my temper

Am not easily annoyed

N4: Self-Consciousness

Find it difficult to approach others

Am afraid to draw attention to myself

Only comfortable with friends

Am not bothered by difficult social situations

**Agreeableness (A) Facets**

A1 Trust

Trust others

Believe that others have good intentions

Trust what people say

Distrust people

A5 Modesty

Believe that I am better than others
Think highly of myself
Have a high opinion of myself
Boast about my virtues

Conscientiousness (C) Facets

C1 Self-Efficacy
Complete task successfully
Excel in what I do
Handle tasks smoothly
Know how to get things done

C4: Achievement striving
Work hard
Do more than what’s expected of me
Do just enough work to get by
Put little time and effort into my work

Total items: 40