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Beauty And The Beast: The Attractiveness Bias In An Online Peer Mentoring Program

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BEAUTY AND THE BEAST: THE ATTRACTIVENESS BIAS IN AN ONLINE PEER MENTORING PROGRAM

by

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ABSTRACT

The bias against attractiveness is fairly implicit and furthermore, powerfully impacts people's subsequent impressions of and behaviors toward others (Cash, Gillen, & Burns, 1977; Dion et al., 1972). Pallet, Link and Lee (2010) examined the effect of various facial spatial configurations on attractiveness and found that raters rated faces as most attractive when the eye-to-mouth ratio approximated 36% of the face length (the "golden ratio"), which coincides with the measurements of an average and thus more attractive face. The present study examined the extent to which the distance of these objectively measured facial features affected mentors' perceptions of their protégés, the subsequent mentoring given to them, and the protégés' own behavior (e.g. seek feedback, request specific information).The gender composition of the mentor-protégé dyad was expected to moderate these relationships. I also examined whether, given the expected effects of facial measurements, withholding access to visual cues would affect mentor perceptions and behavior. Participants were 118 mentor/protégé dyads from a large Southeastern university who volunteered to participate in a formal online peer mentoring program. After seeing their protégés' profiles (and for those in the experimental condition, a picture), mentors chatted with their protégés once a week for 30 minutes for a total of 4 weeks. Results indicated that protégés with facial features moderately distant from the golden ratio were perceived as more similar by mentors in same-gender dyads and received greater mentoring than did protégés closest and farthest from the golden ratio. In opposite-gender dyads, however, mentors reported greater similarity toward those that were farthest from the golden ratio but provided the greatest mentoring to those closest to the golden ratio. The relationship

between facial measurements and protégé proactivity was moderated by whether or not their mentor had access to their picture. While protégés closest to the ratio were more proactive in the picture condition, those that were farthest from it were more proactive in the non-picture condition. Proactivity was as expected associated with greater levels of mentoring, which was ultimately related to a more fulfilled and beneficial relationship for protégés (i.e. less stress, greater self-efficacy and satisfaction). The results of this study indicate that facial measurements are associated with both differences in mentor and in protégé behavior and that the specific nature of these relationships differs as a function of gender composition. Implications for practice and theory will be discussed.

“The journey of a thousand miles begins with a single step.”

Lao-Tzu

I dedicate my dissertation to all of the Latinos and minorities with the ambition and passion to work toward seemingly insurmountable goals. Keep on keeping on, always.

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE: INTRODUCTION

Statement of the Problem

How important is physical appearance? Beginning in childhood, people are exposed to fairy tales and fantasy stories that describe beautiful people as being virtuous and kind while portraying those that are unattractive as wicked (Myers, 2010). Not surprisingly, the attractiveness bias is quite pervasive from a very young age, affects members of both genders (e.g. Cavior & Dokecki, 1973; Langlois, Kalakanis, Rubenstein, Larson, Hallam, & Smoot, 2000) and does not differ based on familiarity of the rater with the target, rating experience of the rater (Hosoda, Stone-Romero, & Coats, 2003; Marlowe, Schneider, & Nelson, 1996) or age of the target (Ritter, Casey, & Langlois, 1991). Research shows that people make the distinction between attractive and unattractive faces as early as the age of 3 (Dion, 1973).

Discrimination based on someone's appearance (i.e. lookism), while not as mainstream as discrimination against traditional groups (e.g. race, sex, national origin, etc.), still has wide-reaching implications in every arena of life that requires human interaction. In fact, there is some theoretical support (i.e. status generalization theory) that describes attractiveness as a status symbol which is associated with social desirability and competence in many different arenas (Webster & Driskell, 1983). Research on attractiveness has been done in a wide variety of settings including organizational evaluation and decision making (Agthe, Spörrle, & Maner, 2010; 2011; Anderson & Nida, 1978; Cash, Gillen, & Burns, 1977; Dipboye & Gehrlein, 1993; Nedelec & Beaver, 2011), advertising (Buunk & Dijkstra, 2011), romantic and platonic relationships (Eastwick, Eagly, Finkel, & Johnson, 2011; Fehr, 2004), mental health counseling

(Cash & Kehr, 1978), the classroom (Clifford & Walster, 1973; Gurun & Vespia, 2007; Hammermesh & Parker, 2005) and online social networks/dating (Brand, Bonatsos, Di'Orazio, & DeShong, 2012). There is also some research in the helping literature that has found that the attractiveness bias is especially pertinent in situations where one is being evaluated for competence as well as being the recipient of help (Agthe, Spörrle, Försterling, 2008). For example, Benson, Karabenick, and Lerner (1976) found that participants were more likely to return "lost" graduate school applications accompanied by a picture of an attractive individual than an unattractive individual. Relatedly, Harrell (1978) found that more help was given to those who self-disclosed and were attractive versus unattractive. A similar situation may exist when a more experienced individual considers whether to offer developmental support to an organizational newcomer; such relationships fall within the umbrella of developmental relationships referred to as mentoring. Traditional definitions of mentoring have been described as the relationship between a more experienced, senior-ranked mentor and an inexperienced, junior-ranked protégé (Kram, 1985). However, modern definitions have expanded to include the provisioning of instrumental and emotional support from superiors, subordinates, peers, groups, and professional organizations, among others (Eby, 1997; Kram & Isabella, 1985). Because mentoring is a time-intensive activity, mentors must decide whether and to what extent they should provide help to protégés, thus making it vulnerable to bias such as the one discussed herein.

Attractiveness within a mentoring context may manifest itself in a variety of ways. Specifically, mentors with attractive protégés of the opposite sex may be inhibited from providing psychosocial support due to a concern over third party observers' perceptions that they

have romantic intentions. Mentors may actually develop such intentions toward an attractive protégé as well. Protégé attractiveness may also affect mentors' perceptions of their protégé (e.g., similarity, competence) and these perceptions can, in turn, lead them to provide different levels of mentoring support. Finally, attractive protégés, as a result of years of being treated differently, may have developed interpersonal styles (e.g., proactivity, confidence) that lead them to better utilize their mentors' expertise.

Inhibitions due to fears about the opinions of third-party observers of a mentoring relationship are less of an issue when the relationship is conducted at a distance through electronic communication. Such distance also makes it less likely that attractiveness will increase the likelihood of actual romantic relationships developing. However, protégé attractiveness may still affect mentoring relationships conducted at a distance if attractive protégés interact differently with their mentors or if their mentor has access to a visual image of the protégé and falls prey to the attractiveness bias.

Electronic mentoring (e-mentoring), also known as online mentoring, virtual mentoring or tele-mentoring, is the provisioning of both instrumental (i.e. career development) and emotional (i.e. psychosocial support) developmental support through computer-mediated mediums. Computer-mediated communication encompasses a variety of both asynchronous communications (e.g. e-mail, online discussion forums) as well as synchronous communications which incorporate a mixture of text-based chat, audio and/or video (Eröz-Tuğa & Sadler, 2009; Smith-Jentsch, Scielzo, Yarbrough, & Rosopa, 2008). Whereas traditional CMCs may not alert mentors to superficial characteristics of the protégé, such as attractiveness, many modern-day CMCs have the capability to provide visual-enhanced messaging across a variety of computer

platforms (e.g. Google, Facebook, Yahoo messaging, Skype, AOL instant messenger, iChat, and ooVoo).

Research suggests that the more that online communications resemble face-to-face communication with a greater number of cues, the more interpersonal warmth and affection between communication partners there will be (Walther, Slovacek, & Tidwell, 2001). However, it has also been argued that the absence of visual cues in e-mentoring can reduce the negative impact of mentor-protégé differences in status, gender, race, or other characteristics that may inhibit open communication (Ensher, Heun, & Blanchard, 2003; Smith-Jentsch, et al., 2008). Thus, visual cues may facilitate communication between individuals who are similar but hinder communication for individuals who are dissimilar. Similarly, prior research has shown that only the attractive benefit when a visual image is provided; unattractive individuals actually fare better when no image of them is provided (Masman, 1978). It follows then that if an attractiveness bias exists within mentoring relationships, the absence of visual cues may improve outcomes for the unattractive but reduce outcomes for the attractive protégé.

A number of researchers have tried to quantify facial features that are systematically viewed as more attractive (e.g., Pallet, Link, & Lee, 2010). Prior research has also demonstrated a variety of characteristics of the beholder (e.g. importance of self-attractiveness, self-esteem, gender of target, etc.) that bias the perceiver's reaction to someone's physical appearance (Agthe, Spörrle, & Maner, 2011; Crocker, Luhtanen, Cooper, & Bouvrette, 2003; Park & Maner, 2009). The present study will be the first of its kind to examine how objectively measured facial features are related to protégé and mentor behavior in the context of an online mentoring program and further, how gender composition moderates these relationships.

The present research has three main objectives: 1. To examine the extent to which objectively measured facial features associated with attractiveness in prior research (Pallet et al., 2010) affect mentors' perception of similarity to their protégés and the subsequent mentoring that protégés perceive receiving; 2. To examine the degree to which protégés with facial features closer to the "golden ratio," as defined in prior research, demonstrate greater proactivity in utilizing their mentor (e.g. seek feedback, request specific information); and 3. To examine whether objectively measured facial features of the protégé moderate the impact of providing online mentors with a visual image of their protégé on the similarity mentors feel toward them proximally, and distally the mentoring given. Given that there is no governmental legislation prohibiting discrimination on the basis of attractiveness, findings from this research will have important implications for administrators of e-mentoring programs, and more broadly, virtual communications (Corbett, 2007).

CHAPTER TWO: LITERATURE REVIEW

What is Physical Attractiveness?

As dubbed in a seminal study by Dion, Berscheid, and Walster (1972), the "what-is-beautiful-is-good" stereotype (also known as the physical attractiveness stereotype; Miller, 1970) is a fairly pervasive bias whereby attractive individuals are perceived as possessing more positive qualities and fewer negative qualities than their unattractive counterparts. With the effect of attractiveness having so many wide-reaching consequences, it comes as no surprise the great lengths- plastic surgery, braces, make-up, extensive skin treatments- that people go through to make themselves as attractive as possible. The attractiveness bias is fairly implicit and instant and because attractiveness is so readily and easily discernible, powerfully impacts people's subsequent impressions of and behaviors toward others (Cash, Gillen, & Burns, 1977; Dion et al., 1972; Olson & Marshuetz, 2005; Regan, 2011; van Leeuwen & Macrae, 2004).

What about someone's face makes them beautiful? A series of characteristics - averageness, symmetry, baby-like features, smooth skin, clear eyes- have been found to be related to higher levels of attractiveness, but the research is inconsistent (e.g. Alley & Cunningham, 1991; Langlois & Roggman, 1990; Perrett, May, & Yoshikawa, 1994; Valentine, Darling, & Donnelly, 2004). Despite not being able to definitively isolate features that make a face beautiful, in general there tends to be a consensus across cultures on what constitutes beauty as indicated by high inter-rater reliability on ratings of attractiveness (Langlois et al., 2000). There are three main ways of measuring attractiveness, two subjective and one objective. One subjective method involves averaging ratings by judges usually on a Likert scale from 1 to 10

(Feingold, 1992). A second subjective method is based on self-report and asks individuals to rate themselves on a similar Likert scale; these ratings also tend to be associated with a wider range of outcomes than do measures of physical attractiveness as rated by others (Feingold, 1992). Interestingly, the relationship between attractiveness as perceived by others and as self-reported does not seem to be that highly correlated (r = .24), signifying that they are tapping at different aspects of the attractiveness construct (Feingold, 1992). Additionally, these reports of attractiveness are vulnerable to self-esteem, mood, and a variety of other affective variables (Agthe et al., 2011; Crocker et al., 2003; Park & Maner, 2009).. A third objective method involves measuring the distances and ratios of specific facial features thought to be determinants of attractiveness. Specifically, Pallet, Link and Lee (2010) examined the effect of various facial spatial configurations on attractiveness and found that raters rated faces as most attractive when the eye-to-mouth ratio was 36%, which coincides with the measurements of an average face. These measurements can easily be captured from photographs of individuals and are inherently more objective than perceptions of attractiveness.

Across a variety of settings, rater/rate characteristics, and times, attractive individuals are preferred over unattractive individuals and tend to be seen as kinder, more outgoing, popular, likeable, competent, intelligent, sexually experienced and interesting (Dijkstra, Cillessen, Lindenberg, & Veenstra, 2010; Dion et al., 1972; Eagly, Ashmore, Makhijani, & Longo, 1991; Feingold, 1992; Goldman & Lewis, 1977; Kanazawa, 2011; Riggio & Woll, 1984; Ritter et al., 1991; Styczynski & Langlois, 1977). In the employment setting, attractive individuals are also perceived as more competent, receive more interview offers, are more likely to be hired, and get higher salaries (Cash et al., 1977; Hosoda et al., 2003; Rohner & Rasmussen, 2011; Watkins &

Johnston, 2000). Research in other settings has also found support for the positive bias: attractive individuals receive higher instructor ratings; are seen as more persuasive and influential; as holding attitudes similar to raters; receive more positive rulings in court; and are perceived as better writers (Baker & Churchill, 1977; Cash & Kehr, 1978; Cavior & Dokecki, 1972; Hamermesh & Parker, 2005; Landy & Sigall, 1974; Zebrowitz & McDonald, 1991). This phenomenon has also been observed in a variety of settings including mental health counseling, the classroom, organizations and romantic/platonic relationships (e.g. Cash & Kehr, 1978; Clifford & Walster, 1973; Dipboye & Gehrlein, 1993; Eastwick et al., 2011). In the context of casual helping, researchers have found that attractive targets are more likely to have small favors performed for them (Wilson, 1978), get directions (Harrell, 1978), get lost items returned (Benson, Karabenick, & Lerner, 1976) and more recently, receive higher survey response rates when accompanied by a cover letter with a photo depicting an attractive female (Donmeyer, 2008). As we can see, there is an abundance of evidence in support of the effect of attractiveness. In turn, research has sought to explain just how perceptions related to attractiveness are initially formed, why they continue to persist across time as well as under what conditions these effects are strongest. The next section delineates the primary theories associated with these effects.

Attractiveness Theory

It has already been discussed that attractiveness is primarily associated with positive qualities in almost every realm. Two main theories- implicit personality theory and the self-fulfilling prophecy- can be used to explain these effects. Implicit personality theory refers to individuals' mental schemas which specify the relationship between a personal characteristic,

such as attractiveness, and how it relates to particular personality attributes (Hosoda et al., 2003). For example, if an individual repeatedly interacts with attractive individuals that also happen to be kinder and sociable, they will learn to apply that categorization to the whole category of attractive people and think as such on subsequent interactions with attractive people, regardless of their level of familiarity with them. As will be discussed later, these perceptions can powerfully affect the manner in which individuals are interpersonally attracted to and behave toward each other.

Individuals can also elicit the behaviors they expect from others based on their pre-conceived notions. According to the self-fulfilling prophecy, individuals who believe that certain types of people will behave in a certain way will act in a way that eventually brings out the expected behavior (Chaiken, 1979; Sheppard, Goffin, Lewis, & Olson, 2011). Eventually, the positive treatment that attractive individuals continue to receive throughout their lives should lead them to internalize the positivity that has always been associated with their physical appearance (e.g. Merton, 1948). Thus the self-fulfilling prophecy first begins with others' expectations and their subsequent behavior toward attractive others which then elicits more positive responses and eventual internalization of these expectations.

A study by Snyder, Tanke and Berscheid (1977) provides support for the self-fulfilling prophecy with respect to attractiveness. Researchers gave college male students fake pictures of either attractive or unattractive females with whom they were to have a telephone conversation. The females were not aware of the attractive/unattractive picture assignment and responded as they normally would. Subsequent objective coding of the phone conversations revealed that males were friendlier and more sociable to the "attractive" female targets than they were to the

"unattractive" female targets. As a result, females in the "attractive" picture condition behaved in a friendlier, more likeable and sociable manner. Thus, the attractiveness manipulated in the pictures activated different stereotypes that led the males to treat the supposed attractive and unattractive females significantly different and in turn, led the targets to behave differently. If participants perceived as more attractive were treated more positively and acted correspondingly after just a short interaction period, it would follow that prolonged exposure to more positive treatment could have a more lasting effect on an individual's personality and behavior. In accordance with this idea, research has found that attractive individuals indeed have more favorable ratings of themselves in terms of competence, mental health and self-confidence as compared to their less attractive counterparts (Langlois et al., 2000). Attractiveness has also been associated with greater levels of happiness and self-esteem for women (Mathes & Kahn, 1975).

It is not the case, however, that higher levels of attractiveness are always associated with the most positive qualities. In fact, the positive inferences associated with attractiveness are a function of the gender composition of the rater and ratee; that is, the most attractive individuals receive more positive reactions by opposite-gender individuals but moderately attractive individuals receive more positive reactions from same-gender individuals (Anderson & Nida, 1978). Just like most people perceive themselves to be at least better-than-average drivers and smarter than the average person, so do they also perceive themselves to be at least moderately attractive (Horton, 2003). According to the self-serving bias, we perceive ourselves in a positive light to maintain a positive self-concept, so it follows that we would react more favorably towards others whom we perceive to be more similar to us on certain characteristics (i.e. those

that are moderately attractive) (Cavior & Dokecki, 1973; Insko, Thompson, Stroebe, Shaud, Pinner, & Layton, 1973).

As already discussed, the attractiveness bias has been observed in a variety of settings but is noticeably absent in one particular field, mentoring, which is the focus of the present study and will be described next.

What is Mentoring?

Traditionally, mentoring has been described as the relationship between a more experienced, senior-ranked mentor and an inexperienced, junior-ranked protégé for the purpose of supporting and developing the protégé emotionally as well as instrumentally (Kram, 1985). The two main functions that mentors provide to their protégés are psychosocial support (PS) and career development (CD). Psychosocial support includes functions such as confirmation, friendship, counseling, and acceptance (Kram, 1983). It is the aspect of the mentorship that supports emotional development and understanding. On the other hand, career development includes activities such as coaching, offering protection, exposure and visibility, and giving challenging assignments (Kram, 1983). This function supports the growth of the protégé as a professional or student in developing their skill set and achieving their goals. Not all mentoring relationships are characterized by the provision of both of these mentoring functions, but the most successful relationships are (Noe, 1988). While somewhat correlated, CD and PS are relatively independent dimensions that correspond with different mentor characteristics and relationship dynamics (Kram, 1985). For example, the provision of CD has been more closely

associated with the mentor's position and level of influence within the organization while the provision of PS is based on the quality of the emotional bond forged between the mentor and protégé (Kram & Ragins, 2007).

Most of the research on mentoring benefits has focused on protégés for both objective and subjective outcomes. In terms of objective outcomes, mentoring has been associated with better performance (Tonidandel, Avery, & Phillips, 2007), higher salaries (Chao, 1997; Ragins & Cotton, 1999), and a greater number of promotions (Allen, Eby, Poteet, Lentz, & Lima, 2004). Subjective outcomes include higher levels of job/career satisfaction and career involvement (Allen et al., 2004; Chao, 1997; Seibert, 1999); greater organization commitment and less turnover (Aryee & Chay, 1994; Payne & Huffman, 2005); higher expectations for advancement, higher motivation and increased self-esteem (Koberg, Boss, & Goodman, 1998), learning (Eby & Lockwood, 2005) and a greater amount of organizational citizenship behaviors (OCBs; Allen et al., 2004; Eby, 2010).

Although much of the focus in mentoring research has been on the perceptions and outcomes associated with protégés, there is a growing base of literature that explores the benefits that mentors incur from the mentoring relationship, as it is often perceived to be a reciprocal relationship (Jacobi, 1991). Apart from tangible benefits like higher salary and promotion rates (Eby, 2010), mentors derive a sense of satisfaction and fulfillment from helping to develop someone else's competence (Bozionelos, 2004; Ragins & Scandura, 1999). Those who have served as mentors also report a higher sense of competence, confidence and esteem among their peers (Kram, 1985). Other positive mentor outcomes include recognition by others for mentoring, improved job performance, greater behavioral intentions to mentor in the future, and

a higher extent of mentor learning (Bozionelos, 2004; Eby, Durley, Evans, & Ragins, 2006; Hirschfeld, Thomas, & Lankau, 2006).

In addition to the benefits that mentoring provides for mentors and protégés, it also has implications for organizations. These include lower turnover rates and higher levels of job performance, organizational commitment, job satisfaction, a stronger organizational culture and higher quality recruitment due to increased organizational attractiveness (Allen & O'Brien, 2006; Wilson & Elman, 1990).

Formal Mentoring

Due to the myriad benefits to protégés, mentors and the organization that informal mentoring has, formal mentoring programs have increasingly been implemented in organizations (e.g. Allen & Eby, 2008; Allen & Finkelstein, 2003; Allen & O'Brien, 2006; Armstrong, Allinson, & Hayes, 2002; Lankau, Hirschfeld, & Thomas, 2005; Wanberg, Kammeyer-Mueller, & Marchese, 2006). In comparison to informal mentoring relationships, formal mentoring relationships are initiated by a third party, have a more contractual and shorter-term duration and are implemented for different purposes in line with organizational goals (Ragins & Cotton, 1999). Some of these organizational goals include newcomer socialization (Allen, McManus, & Russell, 1999), job satisfaction and decreased turnover (Ragins & Cotton, 1999). Although research has consistently found that informal mentoring tends to have greater benefits than formal mentoring, formal mentoring is still better than no mentoring (Allen, Eby, & Lentz, 2006; Chao, 1997). For example, Chao, Walz and Gardner (1992) found that both types of mentoring lead to greater amounts of organization socialization and job satisfaction than no mentoring.

Formal Mentoring to Socialize Organizational Newcomers

As outlined previously, a number of studies have found significant relationships between the provision of mentoring and subjective and objective outcomes. One of the outcomes of having a mentor is that the protégé may learn how to adjust to and become better socialized within their organization (Chao, 1997; Ostroff & Kozlowski, 1993). Organizational socialization is usually defined as a process through which newcomers to an organization (in this case, freshmen/transfer students) learn the knowledge, expectations, skills, attitudes and behaviors necessary to succeed in a particular organization and also avoid embarrassments or negative experiences associated with acting opposite to the organizational (university) culture intact (Van Maanen & Schein, 1979). In our sensitive economic times, having mentoring programs can help ease the anxiety and transition associated with merging, downsizing and other large-order corporate changes in the corporate setting that may be stressful (House, 1981). Specifically, mentoring programs can aid in socializing newcomers which has the potential to increase the effect of training, result in higher retention rates, satisfaction and overall, a more productive workforce (Ostroff & Kozlowski, 1993).

Social learning theory can be used to explain the process through which newcomers learn from incumbents of the organization. Specifically, mentors serve as models of behavior that protégés can then emulate as well as knowledgeable individuals that can communicate the rules and expectations of the organization (Bandura, 1977). Additionally, protégés also learn to see their mentors as valuable sources of information and thus may gain an upper hand over their non-mentored peers (Allen et al., 1999). Katz and Kahn's (1978) classic role theory further supports this phenomenon in that it espouses that individuals look to others in the organization (in this

case, mentors) for guidance as to how they should behave. This process unfolds over time as the relationship develops more and protégés get a better sense of how to succeed in their role (as a new university student), both by experiencing fewer stressors and having an increased sense of competence (Kendall, 2007). In addition to the benefits that this has for protégés, mentors can also benefit from socializing others by helping to create a more competent workforce which can ultimately lessen the need for extra work or re-training as well as creating a sense of well-being from the knowledge that one helped another develop professionally.

Although traditional views of mentoring were limited to hierarchical relationships informally initiated in which a senior individual provided psychosocial and career support, modern interpretations of mentoring have expanded to include mentoring from supervisors, peers, groups, and professional organizations, among others (Eby, 1997; Kram & Isabella, 1985). Specifically, peer mentoring- which will be the subcategory of mentoring used in this study- is mentoring that takes place between individuals who are at the same level (Tonidandel et al., 2007). Sanchez, Bauer, and Paronto (2006) found that peer mentoring for college freshmen was associated with satisfaction with the university as well as the intention and the actual behavior of graduating from the university. Peer-mentoring is an increasingly popular intervention for socializing organizational newcomers. In the following section, I will argue that the attractiveness bias is particularly likely to affect mentoring processes in this type of peer-to-peer relationship.

Peer Mentoring

The lack of hierarchy inherent in peer relationships may facilitate a greater amount of communication, support and cooperation than a traditional mentoring relationship and has been found in commercial as well as educational organizations (Kram & Isabella, 1985). Due to the lack of hierarchy, the functions provided by peer mentors, while similar, are not identical to those provided by hierarchical mentors (Tonidandel et al., 2007). For example, some of the career development functions provided in peer relationships include information sharing, career strategizing and content-related feedback (Tonidandel et al., 2007). In addition, peers can provide the traditional forms of psychosocial support functions including emotional support, friendship and personal feedback. Peer mentoring is often used as a means of socializing newcomers because it has been found to aid in coping with stress and generally getting better acclimated to the organization and its culture (Allen et al., 1999; Chao, 1997). Some of the outcomes associated with academic peer mentoring, specifically, include greater satisfaction with one's university and greater intentions to graduate, academic performance, and social integration (Hixenbaugh, Dewart, Drees, & Williams, 2006; Leidenfrost, Strassnig, Schabmann, Spiel, & Carbon, 2011; Sanchez et al., 2006).

As it pertains to the attractiveness bias, peer mentoring relationships may be especially vulnerable due to the fact that protégés may eventually surpass the peer mentor in competing for graduate school admission, jobs, etc. In fact, people are more likely to spontaneously and inadvertently evaluate themselves (and negatively) in comparison to those with whom they perceive themselves to be categorically similar, such as those of their same gender or status (Gilbert, Giesler, & Morris, 1995; Parks-Stamm, Heilman, & Hearns, 2008). Thus, the

attractiveness bias is especially likely to influence peer mentor perceptions and behavior toward their protégés.

Electronic Mentoring

Computer-mediated communication (CMC) has increasingly been used as either a supplement or replacement to face-to-face workplace interactions (Dixon & Panteli, 2010; Ensher et al., 2003). Electronic mentoring (e-mentoring), also known as online mentoring, virtual mentoring or tele-mentoring, is the provisioning of both instrumental (i.e. career development) and emotional (i.e. psychosocial support) developmental support through computer-mediated mediums (Smith-Jentsch et al., 2008). The demand for electronic mentoring partially arose in response to the need for an alternate form of mentoring necessitated by modern-day society's emphasis on a global economy, teams, flattening hierarchies, technological dependence and increased diversity (Bierema & Merriam, 2002; de Janasz, Sullivan, & Whiting, 2003; Higgins & Kram, 2001; Kram & Ragins, 2007).

E-mentoring programs have been used successfully in a variety of settings including high schools, universities and different types of commercial organizations (Ensher et al. 2003; Hixenbaugh et al., 2006). Some of the benefits for implementing e-mentoring programs include a greater convenience for communicating, the availability of electronic records of the communication for subsequent objective coding, reduced administrative costs, and a larger and more diverse pool of mentors for protégés (de Janasz, Ensher, & Heun, 2008; Ensher et al., 2003). In fact, research has shown that mentors and protégés are more interactive and mentors perceive themselves to be more similar to protégés when interacting online than face-to-face

(Smith-Jentsch et al., 2008). By using a formal online peer mentoring program, the administrator has the ability to control exactly what cues are present before mentors and protégés meet, thus allowing a purer observation of the effect of the absence and/or presence of specific cues on mentoring processes and outcomes. Specifically the benefits gained from increasing presence and communication richness by incorporating visual cues may be outweighed by the biases that these same visual cues may activate. As has already been discussed, the attractiveness bias is a fairly implicit and strong cognitive bias whose effect may be even stronger and more difficult to overcome in a virtual setting where the effect of the cues present may be exaggerated.

E-mentoring also has advantages from a research methodology perspective. The most common and subjective method of measuring mentoring processes involves asking either the mentor or the protégé to answer a variety of questions indicating the extent to which they felt they provided and received these functions, respectively (Noe, 1988). However, mentor and protégé reports about their relationships tend not to be highly correlated (Sosik & Godshalk, 2004). Thus, it is clear that individual differences affect perceptions and it is therefore unclear from these measures what actually transpired. E-mentoring allows for a second more objective method of measuring mentoring processes. Independent coders can rate transcribed interactions between protégés and mentors (Smith-Jentsch et al., 2008). Smith-Jentsch and colleagues (2008) indexed mentoring functions by counting the number of times that mentors made statements in line with the functions, representing *quantity*. One of the advantages of objectively coding the transcripts for the mentoring functions is to circumvent the limitation of mono-method bias inherent in multiple self-report measures. It also captures the relationship as it unfolds as opposed to relying on the mentor's or protégé's memory after the fact. Finally, when both

objective and subjective ratings of the mentoring process are collected one can investigate the manner in which biases affect participants' perceptions. For instance, Smith-Jentsch, Scielzo, Yarbrough, and Rosopa (2008) demonstrated that objectively coded mentor behaviors were perceived differently by protégés as a function of their mentors' gender.

Despite its benefits, there are a few obstacles that CMC programs face that may not be present in regular face-to-face programs. According to Ensher and colleagues (2003), some of the main issues regarding e-mentoring include: a greater likelihood of miscommunication due to the absence of non-verbal cues, the requirement for competency in writing and with technology, the occurrence of technological malfunctions, and issues of privacy and confidentiality. Furthermore, solely text-based online communication lacks non-verbal cues like an identifiable person, facial expressions and body language, which enriches communication in a face-to-face setting by increasing interpersonal attraction and accountability (Ensher et al., 2003). In addition, the lack of non-verbal cues may make impressions derived from the textual exchanges especially impactful and hard to undo. In a mentoring context, this may hinder the development of a trusting and close relationship between protégé and mentor (Bierema & Merriam, 2002).

The anonymity inherent in solely text-based online mediums also lowers inhibitions which may lead mentors and protégés to disclose more thoughts and ideas, which can be positive or negative. On the one hand, Smith-Jentsch and colleagues (2008) argued that individuals interacting through CMC have fewer inhibitions and a lower instance of stereotypes that are more likely to be activated by interacting with a person face-to-face (e.g. race, gender, attractiveness), which in turn may be associated with the development of richer relationships (Smith-Jentsch et al., 2008). However, on the other hand, it may also lead them to write

emotionally-laden and offensive messages that they would most likely not say in person (Gackenbach, 1998).

Summary

The attractiveness bias is especially unique amongst all the other cognitive biases in that it is consistently displayed by individuals regardless of their age, gender, ethnicity, social class, training/education, (e.g., Dion et al., 1972; Dion, 1973; Eagly et al., 1991). However, this bias is usually not included within the biases that lawyers and psychologists usually consider as most important (e.g. race, ethnicity, gender). The fact that there is no governmental legislation prohibiting discrimination on the basis of attractiveness (Corbett, 2007) makes this topic particularly interesting to study. Further, this bias has been reproduced in different settings ranging from the classroom to the employment setting, amplifying the potential circumstances for which this bias can have negative consequences.

The mentoring setting is one setting in particular where attractiveness may taint the intentions and/or behavior of even well-meaning mentors. Although the effects of attractiveness tends to become secondary as the individual gathers more information about the other, and in a perfect world mentors would develop such a rich relationship that attractiveness no longer plays an issue, in an imperfect world mentoring relationships do not always arise so spontaneously. Specifically, organizations are increasingly relying on formal mentoring programs that may be partially or fully conducted through computer-mediated communication and whose mentors may be at a similar level of hierarchy as the protégé. Formal e-mentoring programs may vary in extent of richness of cues available throughout the interactions and it is when visual cues are

present that the attractiveness bias can be especially potent because the short duration usually associated with formal programs may not be sufficient time to undo the strong first-impression reactions.

The present study takes place within the context of a formal peer mentoring program conducted solely through electronic communication, includes objectively measured facial features, the use of coded transcripts to judge protégé behavior and the manipulation of mentor access to visual cues. The next sections will provide support for my specific experimental hypotheses.

Hypotheses and Rationale

Attractiveness within Mentoring

As it relates to the mentoring context, mentors may react differently to attractive protégés because they are concerned about outsiders' perception of the nature of the relationship between the attractive protégé and the mentor, as is often found in cross-gender relationships (Hurley, 1996). Secondly, the psychologically intimate and close relationships that may occur as a result of a very supportive mentoring relationship may also trespass the developmental nature of the relationship and may lead the mentor to develop romantic feelings for the attractive protégé (Hurley, 1996). Thirdly, the positive bias associated with attractiveness already discussed in a variety of situations may also lead mentors to develop greater liking and have higher expectations for the competence of the protégé (Dion et al., 1972). Lastly, the self-fulfilling

prophecy predicts that attractive protégés may actually behave differently irrespective of others' new perceptions/behaviors (Merton, 1948). To address the first point, e-mentoring relationships are less visible to outsiders and are thus less likely to be affected by others' perceptions of the relationship. Additionally, short-term mentoring relationships that are conducted solely rather than partially through electronic media are less likely to develop into romantic relationships. Thus, the present study will not investigate these two potential mechanisms. However, e-mentoring relationships can still be affected by mentors' biases and by differences in the protégés' behavior arising from their own attractiveness. These latter two theoretical mechanisms will be investigated in the present study.

Attractiveness and Mentor Perceptions

Mentoring is a goal-directed behavior with a variety of different underlying motives (i.e., forces within the individual that directs the individual's behavior; Batson & Shaw, 1991). Making the decision to mentor others is an important one because it requires time and energy commitments from the mentor as well as posing the risk to the mentor's reputation and competence if the protégé does not perform well (Mullen, 1994; Ragins & Scandura, 1999, 1999). Allen (2003) identified three major reasons underlying the decision to provide mentoring — to benefit others, for self-enhancement and due to intrinsic satisfaction. Mentors that choose to mentor to benefit others want to help, whether it is to share information, to increase the competence of others, or to provide emotional and/or developmental support. Self-enhancement motives, on the other hand, focus on the individual providing the mentoring and the solely personal benefits that they may gain from mentoring others (i.e. personal learning, recognition,

promotions). Lastly, mentors with intrinsic motivation to mentor are driven by the gratification associated with contributing to someone else's emotional/professional growth. Because the decision to mentor and to choose the extent of mentoring functions to be given is based on the mentor's motives, it is amenable to first impressions of the protégé, especially for mentors not mentoring for purely intrinsic reasons.

When interacting with someone new, people gather information and form impressions based on a variety of verbal, visual and other cues (Adaval, Isbell, & Wyer, Jr., 2007). Festinger's (1954) Social Comparison Theory suggests that individuals tend to evaluate themselves by comparing themselves to others on characteristics such as personality, attitudes, skills, etc. These comparisons help determine the affinity that one feels towards another. In particular, research has found that mentors tend to provide greater psychosocial and career support to protégés who they like more and whom they perceive to be more similar (Ensher & Murphy, 1997). In turn, physical attractiveness has been found to be strongly related to perceived attitude similarity, which is then related to a greater sense of attraction. Since attractiveness has been linked to perceived similarity (Byrne, 1971; Cavior & Dokecki, 1973) I posit here that it will partially mediate the relationships between physical apperance of the protégé and subsequent behaviors from the mentor.

Attractiveness and Gender Composition

Although same-gender dyads have traditionally been associated with better outcomes within mentoring research (e.g. Allen et al., 1999), research on the attractiveness bias has shown that raters react less positively to highly attractive targets of the same gender. The positive bias

related to attractiveness usually occurs toward highly attractive opposite-gender targets; however, a negative (comparison) bias arises toward highly attractive same-gender targets (Agthe, Spörrle, & Maner, 2011). This effect, known as the beauty-is-beastly effect, reflects one of the potential dark sides of too high levels of attractiveness, especially for women (Heilman & Saruwatari, 1979). In the dating realm- where most of the research on the negative implications of attractiveness has been done- the negative processing of attractive same-sex individuals has been found to be a strong and automatic cognitive bias (Maner, Miller, Rouby, & Gailliot, 2009; Maner, Gailliot, Rouby, & Miller, 2007; Rohner & Rasmussen, 2011).

Research has found that some of the negative implications of being too attractive include making same-gender others feel threatened, attracting unwanted attention from the opposite gender and as a female, being perceived in an ultra-feminine manner and subsequently being evaluated negatively for male-typed tasks and jobs (Cash et al., 1977; Feingold, 1992; Heilman & Saruwatari, 1979; Maner et al., 2007). In addition, Dermer and Thiel (1975) found that highly attractive people may be perceived as vain and egotistical, as likely to have extramarital affairs and to request a divorce, and as unsympathetic to the oppressed of the world. After repeated negative interactions, highly attractive individuals may grow weary of others' jealousy or unwanted attention and in turn become more reserved. Thus, even if not seen, highly attractive protégés may not be as open as those that are moderately attractive toward a same-gender partner.

Evolutionary theories posit that highly attractive members of one's gender are perceived as potential threats in the pursuit of mates whereas attractive members of the opposite gender are perceived as potential mates (Försterling, Preikschas, & Agthe, 2007; Maner et al., 2009). This

sexual attribution bias, as it has been named, has two components. The first component applies to the same gender: in efforts to defend against potential competitors and pursue potential mates, individuals are likely to devalue internal attributions (e.g. skill, ability) and emphasize external attributions (e.g. luck) in explaining success. The second component, conversely, applies to the opposite gender: in an effort to glorify attractive opposite gender others, individuals end up devaluing external attributions and emphasizing internal attributions in explaining successes (Försterling et al., 2007). In further support, people tend to show more positive moods after being exposed to highly attractive opposite-gender others and negative moods after being exposed to highly attractive same-gender others (Kenrick, Montello, Gutierres, & Trost, 1993).

Another study by Anderson and Nida (1975) found that raters gave the highest evaluations to those of the same gender with moderate attractiveness and those of the opposite gender with high attractiveness. Again, in line with previous research, those with low attractiveness were rated the lowest. In further support, Agthe, Spörrle, and Maner (2010) found that when rating the opposite gender on suitability for scholarships and jobs, each gender rated the most attractive targets as most competent when compared to their less attractive counterparts. However, when rating the same gender, moderately attractive participants rated highly attractive targets lower than moderately attractive targets. As already discussed, because most individuals perceive themselves to be above average in attractiveness, people are more likely to perceive moderately attractive same-gender others as more similar and thus more likeable. Further, they should be more likely to attribute the highest ratings to the moderately attractive individuals. On the other hand, highly attractive targets are only preferable in opposite-gender interactions and give rise to diminished sense of well-being in same-gender interactions.

For the purposes of my study protégé attractiveness as measured by facial measurements will be separated into thirds- those closest to the golden ratio (highly attractive); those moderately distant from the golden ratio (moderately attractive); and those farthest from the golden ratio (least attractive). Inspection of group means from a pilot study (n =26) using the identical population proposed to be used in my research lends support of this. Specifically, within same-gender female dyads, protégés that were moderately distant from the golden ratio were perceived as being more likeable (M = 6.44) compared to those that were farthest and closest to the ratio (M = 5.00 for both). Similarly, compared to those that were closest (M = 2.96) and farthest (M = 3.62) from the golden ratio, those that were moderately distant from the golden ratio perceived that they received greater amounts of career development (M = 4.36). Similarly, female protégés with female mentors reported receiving greater psychosocial support if they were moderately distant (middle third of population) from the golden ratio (M = 5.03) than they did if they were closest (M = 4.07) or farthest (M = 4.26).

Thus, in line with the above theory, the following hypotheses are posited:

Hypothesis 1: Protégés whose facial features are closest to the "golden ratio" (top third of distribution) will be rated as more similar than protégés farther from the "golden ratio" by mentors of the opposite gender.

Hypothesis 2: Protégés whose features are moderately distant from the "golden ratio" will be rated as more similar than protégés closer (top third) and farther (bottom third) from the "golden ratio" by mentors of the same gender.

Hypothesis 3: Protégés whose facial features are closest to the "golden ratio" (top third of distribution) will receive greater amounts of mentoring than will protégés farther from the "golden ratio" if their mentor is of the opposite gender.

Hypothesis 4: Protégés whose features are moderately distant from the "golden ratio" will receive greater amounts of mentoring than protégés closer (top third) and farther (bottom third) from the "golden ratio" if their mentor is of the same gender.

Hypothesis 5: Mentor-perceived similarity to the protégé will partially mediate the relationship between the protégés' facial measurements and the mentoring that protégés receive.

Attractiveness and the Impact of Visual Cues

So far, I have discussed the indirect ways through which attractiveness will manifest itself in an online mentoring context. In this section, I will be discussing the impact of withholding visual cues from mentors. Social presence theory (Short, Williams, & Christie, 1976) was one of the first theories to be applied to computer-mediated communication in regards to the effects of social cues, or lack thereof. The theory conceptualizes social presence as an individual's perception of the salience of the partner with whom they interact virtually. It specifies that the relationship between individuals will experience decrements as the number of cues (e.g. verbal, visual) present decreases. This relationship is linear; that is, the greater the number of cues, the greater the sense of social presence regardless of the quality of the cues. Uncertainty reduction theory can be used to explain the effect that providing extra information prior to strangers meeting has on their subsequent relationship. Specifically, uncertainty reduction theory states that when there is a greater amount of information (as applied initially to face-to-face interactions), strangers feel less discomfort, a greater sense of predictability and affection toward each other (Berger & Calabrese, 1975 in Walther et al., 2001).

Previous research has found that even the mere provision of a photograph in an online setting leads to greater affection and comfort within the relationship (Lawrence & Mongeau, 1996; Walther, Slovacek, & Tidwell, 2001) and also to positive feelings which may lead to judging the target more favorably (Eagly et al., 1991), however these types of studies are still

few in numbers. Additionally, research examining differences between different types of visual stimuli (e.g. static vs. dynamic presentation of faces) has found that while some characteristics such as emotions and body weight are not as readily apparent in static versus dynamic faces, there is high agreement among raters on what constitutes attractiveness across conditions (Rubenstein, 2005). Lastly, Hagiwara (1973) found that that the biases against the attractive and unattractive are especially strengthened when a person's physical appearance is manifested concretely in a picture as opposed to indirectly through their communication skills.

Although not as extensive as the literature on the positivity bias associated with attractiveness, some research suggests that unattractiveness is penalized to a greater extent than attractiveness is rewarded (Griffin & Langlois, 2006; Masman, 1978). Unattractive individuals are judged as less helpful, intelligent, competent, interesting, and sociable, and generally possess more negative personality traits, regardless of gender interactions (Clifford & Walster, 1973; Feingold, 1992). People attribute negative qualities to unattractive individuals even when it goes beyond their expertise (Dion et al., 1972), regardless of the interaction of characteristics between the rater and rate. For example, a study by Jones, Hansson and Phillips (1978) found that psychological disturbances were more readily attributed to unattractive targets than attractive targets. In relation to visual cues, there is also some support for the idea that the presence of visual cues may actually lead to less positive outcomes for an unattractive individual (Masman, 1978). Research by Landy and Sigall (1974) attests to this. Participants read either a well- or poorly- written essay with no picture, a picture of an unattractive target, or a picture of an attractive target. The highest ratings were given to attractive targets, moderate to non-pictured targets and lowest to unattractive targets.

These findings have implications for the provision of visual cues within e-mentoring relationships. Namely, adding visual cues should add to the provisioning and perception of greater mentoring functions through the fostering of more personal relationships for some but not for others. The provisioning of visual cues allows for the observation of whether the effect of physical appearance on subsequent interactions is due to the targets' internalization of behavior or the raters' expectations and subsequent behavior toward the target. Research on exposure to visual cues and in particular, the face, has found that even after less of a second of exposure to the face- can reliably judge many different characteristics such as levels of attractiveness, maturity, intelligence, competence and personality attributes (Currie & Little, 2009; Zebrowitz, 1997; Willis & Todorov, 2006). In line with the above theory and empirical findings, the following hypotheses are posited:

> *Hypothesis 6*: Providing opposite-gender mentors with a picture of their protégé will have a positive impact on perceptions of similarity for protégés moderately distant from the "golden ratio" but a negative impact for protégés closest and farthest from the "golden ratio."
>
> *Hypothesis 7*: Providing same-gender mentors with a picture of their protégé will have a positive impact on perceptions of similarity for protégés with facial features closest to the "golden ratio" but a negative impact for protégés farthest from the "golden ratio."

Protégé Behavior Associated with Attractiveness

Social exchange theory purports that mentors actively weigh the costs of remaining in the relationship and providing high-quality functions to the benefits of self-fulfillment (Allen, 2004; Copranzano & Mitchell, 2005). However, the onus is not solely on the mentor to produce a high quality relationship; a protégé is an active participant of the relationship as well. Self-directed

learning theory suggests that learners in a learning context, in this case protégés, are the ones that take the most active role in educating themselves (Garrison, 1997). One of the protégé qualities that can increase the effectiveness of a mentoring relationship is proactivity. Proactivity refers to the extent to which individuals seek to actively affect and change aspects of their environment to fit their needs (Batement & Crant, 1993; Crant, 1995; Thomas, Whitman, & Viswesvaran, 2010). Proactivity is akin to beliefs about control, which are one's perceived competence and efficacy in carrying out certain goals (Andreoletti, Zebrowitz, & Lachman, 2001; Turban & Dougherty, 1994).

Proactive individuals actively seek out opportunities, show initiative, take action and persevere until they bring about the action that they seek (Batement & Crant, 1993). According to social exchange theory, people remain in relationships where the benefits outweigh the costs and leave those where the opposite exists (Homans, 1958; Thibaut & Kelly, 1959). For example, the cost of providing effort required in mentoring someone may be outweighed by the benefit of personal fulfillment of helping someone. Thus it follows that a proactive protégé will be more actively involved in learning what they think will meet their needs from the mentor. Attractive people's positive historical interactions with others will have led them to have greater ease in developing relationships and confidence that they can gather the information necessary in order to reach their own goals.

The relationship between proactivity and attractiveness is not completely straightforward. On the one hand, studies have shown that attractive individuals are perceived as more independent, achieving, ambitious and as having more control of their own fate, which is in support of implicit personality theory regarding attractiveness and positive variables (Krebs &

Adinolfi, 1975; Miller, 1970). This relationship has even been found amongst children. A study by Dion and Berscheid (1974) found that compared to unattractive children, attractive children were more likely to be perceived as self-sufficient and more capable of accomplishing what they wanted to. Research has also found that attractive individuals were better communicators and induced greater persuasion and agreement than their unattractive counterparts (Chaiken, 1979). Thus, as more effective communicators, a more attractive protégé will be more adept at expressing themselves and asking for help (both relationship- and task-oriented) from their mentor during the course of the relationship. These findings are in line with the general idea that attractive people are perceived as possessing more socially desirable traits, regardless of whether or not they in fact do possess them (Shea, Crossman, & Adams, 1978). Also, given that highly attractive individuals have a history of being treated more favorably as a result of their physical appearance, these individuals are likely to have developed the skills to be more interactive and by extension, proactive in their e-mentoring relationships. On the opposite end of the attractiveness spectrum, an interesting relationship arises with proactivity. It has already been discussed that people generally associate negative qualities with those that are unattractive. Just like those that are attractive possess an arsenal of positive interactions with others due to their physical appearance, unattractive individuals learn through their repeated experiences that their appearance is stigmatizing and as a result perceive higher external constraints (Andreoletti et al., 2001). These expectations of negative prejudices from others may lead unattractive individuals to overcompensate by learning to employ different strategies to overcome these expectations, which may then lead them to develop a greater sense of control over their environment to offset the obstacles they face. Thus unattractive protégés may have practiced the skills of manipulating

their environment to work in their advantage, and thus would be more proactive. Because both the highly attractive and the unattractive have developed these skills before going into the mentoring relationship, their proactive behavior should manifest itself regardless of whether or not their mentors see pictures of them.

Using the pilot data as support of the above claims, I found that when examining female-to-female dyads those protégés that were moderately distant from the golden ratio were perceived as least proactive when compared to those closest and farthest from the golden ratio. Similarly, those moderately distant from the golden ratio reported being more confident in their ability to effectively interact with their e-mentors. All in all, these pilot data suggest that those that are highly attractive and those that are unattractive both perceive that they have a greater sense of control as well as are perceived as such, which supports the above theory and research findings. . Given the above arguments, the following hypothesis is posited:

> *Hypothesis 8*: Protégés with facial features moderately distant to the "golden ratio" will demonstrate fewer proactive behaviors during their e-mentoring sessions than those that are (a) closest and (b) farthest to the "golden ratio."

Proactive behaviors within a mentoring context include initiating information exchange, frequently contacting the mentor, and openly asking for developmental help (Kendall, 2007). Openly seeking these behaviors increases the likelihood of receiving the sought-out help, ultimately resulting in greater mentoring outcomes (Ashford & Black, 1996; Turban & Dougherty, 1994). Turban and Dougherty (1994) found that protégés did indeed receive greater mentoring functions when they were higher in proactive personality than their counterparts. In line with the self-fulfilling prophecy, it is expected that protégés that demonstrate more

proactivity through taking the initiative to ask for help, communicating their ideas and responding to mentors, will in turn lead mentors to view them as such and reciprocate accordingly by providing more mentoring functions (i.e. career development and psychosocial support). The following hypothesis is posited:

> *Hypothesis 9*: Protégés who demonstrate higher levels of proactivity during their e-mentoring sessions and in turn will receive greater amounts of mentoring from their mentor.

Outcomes of E-Mentoring

There are many benefits that participants of a formal mentoring program can derive related to adjusting to a new environment. For example, Ostroff and Kozlowski's (1993) study compared mentored and non-mentored individuals on different organizational socialization outcomes and found that mentored individuals learned more about organizational issues and practices through the observation and teaching of their mentors as compared to their non-mentored counterparts. Along with other aforementioned research, there seems to be a trend where the mentoring functions received leads to important protégé socialization variables, which in this study are operationalized as stress, academic self-efficacy and relationship fulfillment.

Stress

An individual experiences stress when they encounter a situation that requires sustained cognitive, emotional or physical effort (de Jonge & Dormann, 2006). Social support theory discusses the positive effect that having supportive relationships, such as a mentor, can have in either preventing, reducing or helping with the coping of various stressors (Cohen & Wills, 1985;

House, 1981). House (1981) described four different types of social support that are analogous to the mentoring functions originally delineated by Kram (1983). These include emotional (e.g. trust, listening, concern) and appraisal (e.g. affirmation, feedback), which can be identified with the PS function of mentoring; and informational (e.g. advice, information) and instrumental (e.g. time, modifying environment), which can be identified with the CD function of mentoring. Allen et al.'s (1999) study on the socialization effect of a formal peer mentoring program found that stress was reduced as result of the program. As discussed earlier, the socialization process which mentors can contribute to, aids in aligning the expectations of the new members to the reality, thus minimizing role stress (Thomas & Lankau, 2009). It follows that my next hypothesis stated:

> *Hypothesis 10*: Protégés who receive greater amounts of mentoring from their mentors will report lower levels of stress associated with the mentoring.

Academic Self-Efficacy

Self-efficacy is an individual's belief that they can carry out a specific task or activity successfully (Bandura, 1977). Individuals with higher self-efficacy are more likely to initiate tasks, persist until completion and set higher goals than those with lower self-efficacy. According to Bandura's (1977) social learning theory, there are four major ways of developing a strong sense of self-efficacy: past experiences, vicarious experiences, verbal persuasion and physiological arousal. The more successes that one has had in the past, the greater the belief that one would be able to succeed in the future. The second method involves learning through others' experiences. When one witnesses others' failures and successes, they are directly exposed to information regarding how to avoid or manage the failures and how to navigate the successes.

The third method is through verbal persuasion; verbally encouraging an individual that they can succeed if they put in effort is likely to bolster their self-confidence on succeeding. Lastly, self-efficacy can be increased through emotional arousal. In other words, when an individual is not experiencing high levels of negative emotional arousal (e.g. stress, anxiety, fear of failure), they are better able to concentrate on the task at hand. Within a mentoring relationship, two of these methods of affecting self-efficacy can be effectively utilized by mentors: vicarious experiences and verbal persuasion. Additionally, mentors can provide encouragement and thus motivate their protégés to succeed in whatever challenges they may be experiencing. Through the mentor's assurances and advice and perhaps also through their way of framing challenges, protégés often end up having higher self-esteem, self-efficacy and an enhanced self-image (Smith, McAllister, & Crawford, 2001). Mentoring theory also supports the idea that the mentor's guidance, acceptance and friendship relates to their protégé's sense of competence and self-worth (Kram, 1985). In support of the above theories, research has found that self-efficacy is related to higher levels of job satisfaction and performance, problem-solving, and resilience in the face of failure, GPA and retention in the academic setting (Judge, & Bono, 2001; Robbins, Lauver, Le, Davis, & Langley, 2004). It follows that my next hypothesis stated:

> *Hypothesis 11*: After controlling for pre-mentoring self-efficacy, protégés who receive greater amounts of mentoring from their mentors will report higher post-mentoring self-efficacy.

Relationship Fulfillment

Previous research has found a significant and positive relationship between the career and psychosocial support one receives from his/her mentor and fulfillment with the mentorship

(Allen, Russell, & Maetzke, 1997; Ensher & Murphy, 1997). In her original research, Kram (1985) suggested that the greater the amount of the functions provided by mentor, the more beneficial the relationship would be to the protégé. It follows that the more positive interactions that protégés have with their mentors, the more positive their attitudes towards the relationship (Tenenbaum, Crosby, & Gliner, 2001). The amount of the mentoring functions provided by the mentors may indicate to the protégés the extent to which the mentor is invested in the relationship in terms of time and energy, thus leading to a greater sense of fulfillment to the committed mentor (Allen et al., 1997). Thus, my final hypothesis stated:

> *Hypothesis 12*: Protégés who receive greater amounts of mentoring from their mentors will be more fulfilled with their mentoring relationships.

Summary

In conclusion, this study will examine the extent to which objective facial features of a protégé affect mentors' perception of perceived similarity as well as the subsequent levels of support they provide. Specifically, I am positing that mentors are more likely to perceive same-gender protégés with facial features moderately distant from the golden ratio as more similar and will ultimately provide them with greater amounts of emotional and instrumental support. On the other hand, within opposite-gender dyads, mentors will show greater perceived similarity to protégés with facial features closest to the golden ratio. Finally, providing mentors a picture of their protégé will exacerbate the moderately-attractive-is-good effect for same gender dyads and the highly- attractive-is-good effect for opposite-gender dyads. The effect of providing a picture of someone considered unattractive will lead to less positive outcomes than not providing a

picture at all. Lastly, the least attractive and most attractive individuals will be most likely to engage in more proactive behaviors during their E-mentoring sessions and this should be seen whether or not the mentor is provided their visual image. See Figure 1 for a model of the hypothesized relationships.

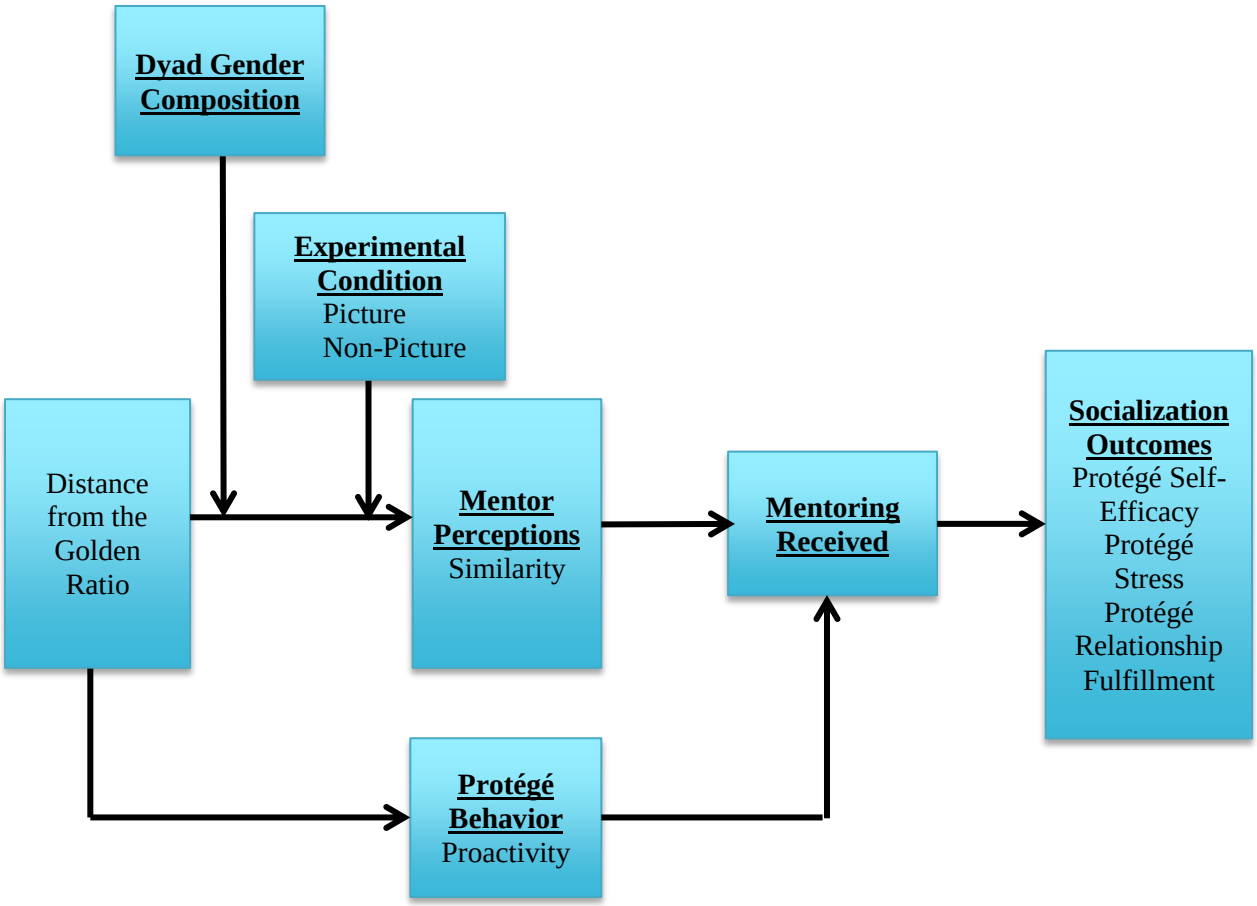


Figure 1. Hypothesized Relationships Between Study Variables

CHAPTER THREE: METHOD

Experimental Design

Various forms of recruiting methods were employed in order to attain a pool of mentors with diverse ages, ethnicities, class standings and majors in 3 separate data collection periods (Fall 2009, Fall 2010 and Spring 2012). In all cases, protégés were recruited after all the mentors had been recruited. Data for the majority of the mentor-protégé dyads (77 out of 118) were collected during the Spring of 2012 and was combined with participants from previous semesters in order to increase the sample size of those in the picture condition and with different gender combinations. The procedure for assignment of these dyad to conditions for Spring 2012 (picture or no picture) was as follows. Using three separate random number generators in Microsoft Excel, protégés were first assigned to either receive a male or female mentor. Next, protégés were randomly assigned to a specific mentor of that gender. Finally, protégés were randomly assigned to one of the two experimental conditions; one in which their mentor received a picture of them or one in which their mentor did not receive a picture. The random number generators led to the following gender mixes: 13 male mentor-male protégé; 17 male mentor-female protégé dyads; 16 female mentor-male protégé dyads; 31 female mentor-female protégé dyads. Twenty-six mentor-protégé dyads from the prior two semesters had all been run in the picture condition. The final sample including participants from all three semesters consisted of 16 male mentor-male protégé; 23 male mentor-female protégé dyads; 21 female mentor-male protégé dyads; 58 female mentor-female protégé dyads. The entire study included a 1-hour orientation, four 30-

minute chats over four consecutive weeks, and a post-chat online survey after all four chats were completed.

Power Analysis

Before participants were recruited, a power analysis was conducted to determine the number of mentor-protégé dyads necessary in each experimental group (picture vs. no picture) to yield a power of 80%. Previous research on formal mentoring programs and academic ones specifically has found small to moderate effect sizes (see Eby, Allen, Evans, Ng, & DuBois, 2008). Additionally, the most recent meta-analysis examining the effect of attractiveness also found a moderate effect size (Eagly, Makhijani, Ashmore, & Longo, 1991). Using the program G*Power, with a medium effect size (d = .50), power of .80, α of .05, and given 6 predictors, it was determined that approximately 35 dyads per experimental condition were needed, for a grand total of 70 dyads.

Participants

Description of Participants

Undergraduates were recruited to participate in a formal mentoring program whose purpose is to help students transition from high school/community college to university life. Participants in this study were 238 undergraduates from a large Southeastern university, resulting in a total of 119 mentor/protégé dyads. When accounting for participant attrition after the chatting commenced, 118 dyads were retained for analysis- 65 in the picture condition and 53 in

the no-picture condition. The only requirement students needed to meet in order to serve as protégés was to be a freshman (fewer than 30 credit hours) or first year transfer student. Mentors were volunteers recruited from a variety of classes, mass e-mails, flyers, and student organizations. Mentors were undergraduates that needed to have a minimum GPA of 3.0 and have Junior or Senior class standing in order to qualify for participation in the study. Mentors were recruited first along with their contact information and a brief description of their background. In all cases, protégés were recruited after all the mentors had been recruited.

Mentors

A total of 118 volunteer mentors were used, 39 of which were males, 79 of which were female and 1 unreported. Ages ranged from 19 years to 33 years (M = 21.62 years, SD = 2.52). Approximately 45% were White, 27% were Hispanic, 13% were African-American and the remaining 15% identified themselves as Asian, Mixed, "Other" or did not report their race. Mentors were offered 5 psychology research credits, 5 volunteer hours as well as the opportunity to put the mentoring the experience as part of their résumé upon participating and completing the entire program. Additionally, they were offered a letter signed by the program director of the psychology department ascertaining their involvement in the mentoring program. Mentors also had some variability in majors represented including psychology, biology, health sciences, and business. Although the majority of mentors were psychology majors, there was a great variety in the minors represented (e.g. philosophy, law/criminal justice, English/writing, sociology) which increased the probability that the mentor would be able to offer major-specific advice to the protégé.

Protégés

Protégés were first or second-semester freshmen/transfer students, recruited from a variety of general education courses from Fall 2009, Fall 2010 and Spring 2012 with instructors' permission in addition to the previous forms of recruiting mentioned above. Because most of the protégés participated in the study in order to receive psychology credit, there were a disproportionate number of psychology students, which traditionally include a higher percentage of females. Approximately 66% were female, and ages ranged from 17 to 21 years old (M =18.39 years, SD = .63). About 53% of the protégés were White, 20% were Hispanic, 12% were African-American, 6% were Asian and 9% were Mixed, "Other" or did not report their race. Similar to mentors, protégés were offered 5 psychology research credit hours, 5 hours of volunteer service as well as a letter of participation for participating and completing the program. Protégés had a wide range of majors represented, including biology, nursing, business, and computer science psychology.

Procedure

Study Description

During an hour-long orientation, participants were informed of the general nature of the study without the mention of the attractiveness or picture effect (i.e. the impact of mentoring processes on academic-related outcomes) and informed of all of the logistical requirements of the study. Additionally, the researcher discussed with all of the participants the security/confidentiality of the information shared online, how the data's safekeeping would be

maintained and contact information for the lead researcher in case of issues. These orientations also covered a variety of topics including rules of conduct within the e-mentoring study (e.g. no discussion of illegal activities, no use of profanity or sexually explicit activities) as well as guidelines to possible topics of discussion (e.g. researching/choosing classes, study strategies, campus involvement ideas, interpersonal issues with professors/roommates). All mentors were oriented with other mentors and all protégés were oriented with other protégés. All participants had their pictures taken, but were not told that their picture would or would not be provided to their mentor. Participants were asked to pose as they would if they were to be taking a picture for their Driver's License. Lighting, background and distance to the camera were held constant across all participants.

Protégés

Protégés filled out profile information that included their gender, ethnicity, major, career goals, life challenges overcome, hobbies/interests as well as a description of what they hoped to gain out of the mentoring experience (see Appendix A). Mentors in the picture condition received their protégé's profile information along with the picture prior to filling out the pre-measures (Anderson & Nida, 1978). Mentors in the non-picture condition simply received their protégé's text-based profile. So as not to alert mentors to the different experimental conditions, mentors in differing conditions were separated after being oriented but before receiving their protégé's profile. Mentor's pictures were taken for exploratory analyses and were not shown to protégés.

Mentors

After randomly being assigned to a protégé, mentors were asked to come in for orientation. Mentor's profile information had been collected prior to orientation, at the initial recruitment phase (see Appendix A). In order to emphasize the importance of evaluating the photographs, mentors in the picture condition received their protégé's profile information along with the picture prior to filling out the pre-measures (Anderson & Nida, 1978). Mentors in the non-picture condition simply received their protégé's text-based profile. They were further instructed to fill out the questions regarding their protégé's attractiveness based on the mental image they formed from their protégé's profile. So as not to alert mentors to the different experimental conditions, mentors in differing conditions were separated after being oriented but before receiving their protégé's profile. Mentor's pictures were taken for exploratory analyses and were not shown to protégés.

Meeting Online

After receiving their mentor's/protégé's profile information, all participants met with their partner through g-chat once a week for 30 minutes for four weeks. Participants were told not to exchange any type of identifiable contact information (e.g. full name, phone number, non-website email address, etc.) as well as not to meet outside of their scheduled sessions. These guidelines were given to ensure that the type and level of interaction remained consistent across all pairings. Participants were informed that they would be allowed to exchange contact information if they so choose, but *only* after all of the chat sessions were completed.

All participants were reminded through e-mail/phone calls about their upcoming chat sessions. At their designated chat sessions, participants logged onto g-mail with the username they created at orientation, through which they could securely and confidentially email in addition to chatting. A research assistant in charge of the dyad first invited the dyad to a group chat to ascertain they were both present, then left the group chat and let them chat amongst themselves. The transcripts were downloaded after every chat, which were subsequently coded.

Measures

Demographic Information

Participants were asked questions regarding their gender, race, academic status, GPA, SAT/ACT scores, and age, among other things. See Appendix B for demographic measures.

Personality Measures

Personality was assessed by the NEO Five-Factor Inventory (NEO-FFI), a 60-item shortened version of the NEO PI-R (Costa & McCrae, 1992). There were 12 items for each of the Big 5 personality traits (e.g. openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism). These personality variables were at times used as covariates when testing the hypotheses relating to mentors' perceptions.

Gender Composition

Gender composition was determined by coding for whether mentoring dyads were same-gender or opposite-gender. Due to the low number of male participants, I did not have a large enough sample size to break down the gender combinations into male and female mentors with female and male protégés, respectively. Specifically, two different gender combinations were computed- same-gender for female-female and male-male dyads and opposite-gender for female-male and male-female dyads.

Facial Features: Distances from the Golden Ratio

The ratio of the distance between participants' eyes and the mouth were compared to the total length of their faces. The program GIMP- which allows for precise facial measuring- was used to measure the faces (See Appendix C). Absolute differences between participant ratios and the 36% ratio found by Pallet and colleagues' (2010) to be associated with greater attractiveness were calculated, with larger numbers indicating a greater disparity as compared to the golden ratio, and thus farther distance from the ideally attractive face. These distances were used to divide the sample of protégés into equal 1/3^{rds} to test the study hypotheses. The range in distances from the golden ratio in the the Pallet et al. (2010) study was from 30% to 45% whereas in this study it was from 23% to 34%. After being thoroughly trained on how to make precise facial measurements using the computer program, two research assistants rated each protégé's picture and their averages were used as the final measurements. Measurements were available for all 118 of the protégés.

Protégé Expectations of Receiving Mentoring

Prior to beginning to chat, protégés filled out a 22-item measure depicting the extent to which they expected to receive mentoring (Kendall, 2007) (see Appendix D). An example item is, "I expect my mentor to give me practical tips on how to accomplish academic objectives." The coefficient alpha was .92 for protégés (n = 118).

Perceived Similarity

To measure perceived similarity, Kendall's (2007) measure was used (see Appendix E). This measure is an adaptation from Smith-Jentsch et al.'s (2007) study in addition to items added by Kendall in her dissertation which used a similar population to the one used in this study. This measure includes five items that asked mentors and protégés to indicate the extent to which they perceived themselves to be similar to protégés and mentors, respectively, on a variety of factors. An example item is, "my mentor/protégé and I are similar in terms of our outlook, perspectives and values". Items were rated on a 6-point Likert scale (from 1 *not at all confident* to 6 *extremely confident).* This measure was given before the study to mentors and only after the study to protégés. Before meeting, mentors in both conditions were first shown their protégé's profile and then instructed to answer these questions solely based on the profile information of their protégé. For those mentors who filled out the measure pre-chat, the coefficient alpha was .86 (n = 72). The reliability for protégés' post-chat perceived similarity was much higher (α = .95, n = 118).

Mentoring Processes

Mentor Behavior

Mentor behavior was measured by using a combination of Allen and Russell's (1999) 11-item measure of academic career development as well as Kendall's (2007) 14-item measure of psychosocial support. Because they were so highly correlated ($r = .78$, $p < .001$), these measures were combined into one to represent the total mentoring functions that protégés felt they received. Participants rated each item on a 6-point Likert scale (from 1 *strongly disagree* to 6 *strongly agree)* (see Appendices F and G). Example items include "my mentor demonstrated good listening skills in our conversations" and "my mentor provided tips for taking exams successfully". The alpha coefficient for the combined measure was high ($\alpha = .96$, $n = 118$).

Coded Proactivity

In order to obtain an objective, unbiased measure of protégés' level of proactivity, the chat transcripts were coded using a coding scheme developed in previous pilot studies. When the chat sessions were completed, chat transcripts were exported to Word documents for coding. In order to maintain participants' identities confidential, participants' were re-named to Protégé for the protégé and Mentor for the mentor. Additionally, gender terms were re-coded to avoid biases associated with gender while rating. Two coders were trained for proactivity (see Table 1; Appendix H). Raters met in person or virtually once or twice a week for 6-8 weeks and reviewed from 70-100 chat transcripts from previous studies that used the same chat interface and population. Raters continued to code transcripts until they reached at least a .80 reliability. Only

the last semester's worth of chats was coded (Spring 2012), as I did not have the transcripts for the previous two semesters. Raters first began their training coding transcripts together and discussing discrepancies when they arose, then coding transcripts separately followed by discussion if large discrepancies came up. Once an adequate reliability was reached ($\alpha > .85$), transcripts for the latter 77 dyads of the study were randomly divided among coders for each construct. Transcripts were re-named and cleansed to avoid gender bias and to keep coders blind to the experimental condition.

The proactivity coding schema used was derived from the career development and psychosocial support measures that protégés used to report mentoring functions, with the only difference being that the statements were from the protégé's perspective. Protégé proactivity was operationalized as the number of times protégés admitted having an issue or asked a question relevant to academic career development or psychosocial support. Specifically, four aspects of proactivity were coded: question/statement regarding academic career development and question/statement regarding psychosocial support. The total statements/questions for the four sessions were averaged used in subsequent analyses. The proactivity team rated a total of 77 transcripts in common and their inter-rater reliability was $r = .90$. The consistency of the behaviors across the four sessions led to an alpha of .86, which indicates that protégés were highly consistent in their proactive behaviors towards their mentors across chat sessions.

Table 1. Protégé Proactivity Coding Schema

Academic Career Development (ACD)	Psychosocial Support (PS)
Protégé has specific academic-related question (e.g. "Which professor should I take for that course?")	Protégé talks about how stressed s/he is in general (e.g., "Adjusting to UCF has been very difficult. I'm so stressed!")
Protégé has question about campus or Orlando area (e.g., "Where is the nearest gas station to campus?"; "What are some good apartment complexes near campus?"	Protégé has a personal relationship problem (e.g., "My roommates are driving me crazy and I just don't know what to do."; "Did you ever have roommate problems?")
Protégé asks about how to manage his/her finances (e.g., "Where is the cheapest place to buy groceries?"; "How can I make cheap meals at home?")	Protégé says s/he is feeling down/depressed/homesick, etc.
Protégé admits to not knowing some piece of academic-related information (e.g., "I don't know where to go for free tutoring on campus". Does NOT include: "I don't know what I'm going to major in yet".	Protégé asks mentor what s/he did in a particular non-academic-related situation (e.g. "Have you ever had a bad relationship with a professor? How did you handle it?")
Protégé asks for mentor to tell a personal experience about how they solve or have solved an academic problem (e.g., How do you study for tests?")	Protégé asks for information on how to get involved in non-academic extra-curricular activities (e.g., "Do you know if there are any sports clubs or teams I can join on campus?")

Socialization Outcomes

One of the reasons for targeting freshman and first-year transfer students as the recipients of this mentoring program is due to the potentially negative effects adjusting to a new academic environment and curriculum can have on prospective students' psyche. Not only are individuals

adjusting to the university setting, but also to possibly being away from home for the first time and taking care of themselves while balancing a social life with their academics in what potentially could be a new city, state, or even country. Although the primary focus of this study is to examine the variables that lead to the exchange of mentoring functions and not the outcomes of it, I nonetheless collected and analyzed relationships between mentoring received and socialization outcomes in this study as well. These socialization outcomes include protégé academic stress, academic self-efficacy, and relationship fulfillment.

Mentor-Related Stress Reduction

A revised version of Allen, McManus and Russell's (1999) measure targeting the extent to which the mentor reduced stress was collected from protégés after their final chat session (see Appendix I). This measure includes two items on a 6-point Likert scale (from 1 *strongly disagree* to 6 *strongly agree).* The items used were "Having a mentor has really helped to reduce my school tension" and "My mentor has helped me better cope with my school stress." This scale had an alpha coefficient of .92 (n = 77).

Academic Self-Efficacy

To assess academic-related self-efficacy, the College Self Efficacy Inventory (Solberg, O'Brien, Villareal, Kennel, & Davis, 1993; CSEI). was used (see Appendix J). This measure includes 15 items that asked respondents to indicate the extent to which they felt confident to complete various academic-related tasks such as "research a team paper" or "write course papers."

Items were rated on a 6-point Likert scale (from 1 *not at all confident* to 6 *extremely confident).* This measure was also collected from protégés both before and after the mentoring program. The alpha coefficient for this measure was .88 pre-chats and .95 post-chats (n = 118) for protégés. The correlation between these two measures between administrations was .40 ($p < .01$).

Relationship Fulfillment

Protégé relationship fulfillment was measured for both protégés following their last chat session using a 6-item scale used in Kendall et al. (2005) and Smith-Jentsch et al. (2007) (see Appendix K). An example item was "The mentoring relationship between my mentor and I was very effective." Items were rated on a 6-point Likert scale (from 1 *strongly disagree* to 6 *strongly agree).* The alpha coefficient for this measure was .97 (n = 76).

Table 2. Timeline of Study Procedure

1. Recruited of participants.	5. Sent out non-identifying mentor/protégé profile information to their corresponding partner.
2. Protégés, then mentors, came in to be oriented.	6. Protégés met online with mentors once a week for four consecutive weeks.
3. Collected time 1 (pre-chat) data for: • Protégés: Demographics, mentoring functions expectations, self-efficacy • Mentors: Demographics, perceived similarity, personality	7. Collected time 2 (post-chat) study data: • Protégés: Perceived similarity, mentoring functions received, relationship fulfillment, mentor-related stress reduction, self-efficacy
4. Randomly assigned protégés to mentors and then to experimental conditions.	8. Protégés and mentors who wished to continue their relationship exchanged contact information and continued their relationships informally.

CHAPTER FOUR: RESULTS

All analyses were conducted using the statistical Windows software SPSS, version 19. The data were first screened to check for normality and outliers. In order to analyze the data, correlations were first calculated between the main variables in the study, which include demographic variables, perceived similarity, personality, mentoring functions (protégés' perception), coded protégé proactivity, protégé stress reduction/self-efficacy, and protégé relationship fulfillment. Factorial ANOVA/ANCOVA was used to test the first set of hypotheses. Correlational analysis and regression was used to test the second set of hypotheses.

General Findings

Table 3 displays the means, standard deviations and intercorrelations between the main study variables. Before I discuss the results associated with the formal study hypotheses, I will first note some interesting trends and relationships that were found in the data. In comparing the picture and non-picture condition, protégés in the picture condition reported significantly greater levels of post-chat self-efficacy (M = 4.90 vs. M = 4.46). Although not significantly different, the following trends in the data are still interesting to note. Specifically, protégés in the picture condition had higher levels of relationship fulfillment (M = 4.86 vs. M = 4.79), perceived themselves to be more similar to mentors (M = 4. 18 vs. M = 4.04) and reported receiving more mentoring functions (M = 3.90 vs. M = 3.67) than those in the non-picture condition.

In addition to the relationships amongst the primary study variables, it is worth noting the relationships between personality variables and perceptions that were related to the outcomes of interest and were thus subsequently used as covariates. First, the expectations that protégés had pre-chat about how much mentoring they would receive were significantly associated with the mentoring they reported receiving post-chat [r (77)= .37, $p < .01$, two-tailed], providing support for the idea that the self-fulfilling prophecy as the mechanism through which these two were related. That is, protégés' initial ideas of how much benefit they would gain from the program affected their behavior throughout the relationship in a way that led them to receive more mentoring than those that had lower expectations.

Table 3. Means, Standard Deviations, and Intercorrelations between Study Variables

Variable	***M***	***SD***	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Pre-Chats Variables													
1 Picture Condition	.55	.50	**1**										
2 Mentor Pre-Chat Similarity	4.08	.77	.00	**(.86)**									
3 Mentor Agreeableness	3.98	.48	.02	.19	**(.75)**								
4 Mentor Openness to Experience	3.65	.85	.14	-.18	.23*	**(.87)**							
5 Protégé Expected Mentoring	4.05	.84	-.06	.11	.11	.05	**(.92)**						
6 Protégé Self-Efficacy	4.68	.77	.11	.16	-.05	.03	.17	**(.88)**					
Mentorship Behavior													
7 Protégé Mentoring Received	3.80	1.16	.10	.08	.10	.18	.37**	.05	**(.96)**				
8 Coded Proactivity Mean	17.3	6.55	.05	.04	-.05	.04	.11	-.04	.25*	**(.86)**			
Post-Chat Outcomes													
9 Protégé Post-Chat Similarity	4.42	1.14	.06	.05	.11	.23*	.24*	.13	.74**	.04	**(.95)**		
10 Protégé Mentor Stress Reduction	3.33	1.31	-.23*	.06	.04	.03	.33**	.09	.58**	.00	.54**	**(.92)**	
11 Protégé Self-Efficacy	4.70	1.01	.22*	.05	.00	.25*	.14	.40**	.35**	.07	.47**	.10	**(.95)**

Note: Two-tailed, n = 77-128, * $p < .05$, ** $p < .01$. Reliabilities for each condition are on the diagonals. Picture Condition (0 no; 1 yes)

Hypothesis Testing

The hypotheses will be discussed in the order in which they were proposed. The first set of hypotheses examine the relationships between protégés' facial measurements (i.e. distance from the golden ratio) , mentor perceptions (i.e. perceived similarity), mentoring received, and protégé behavior while also examining the gender composition of the dyads and the picture condition. The next set of hypotheses test for mentor perceptions as mediators of the relationship between facial measurements and mentoring received. Lastly, relationships amongst mentoring received and socialization outcomes (i.e. self-efficacy, stress, relationship fulfillment) are examined. Hypotheses 1-8 were tested using factorial ANOVA/ANCOVA, while 9-12 were tested using correlation and multiple regression.

Facial Measurements on Mentors' Perception of Similarity (Hypotheses 1 and 2)

Hypothesis 1 stated that protégés whose facial features were closest to the golden ratio (top third of distribution) would be rated as more similar than those that are farther from the golden ratio by mentors of the opposite gender. By contrast, Hypothesis 2 stated that protégés whose features were moderately distant from the golden ratio would be rated as more similar than protégés closer (top third) and farther (bottom third) from the golden ratio by mentors of the same gender. These two hypotheses were tested using protégés' in the picture condition only.

In order to test Hypotheses 1 and 2, a 2 (gender combination- same/different) x 3 (protégé distance from the golden ratio low/medium/high) factorial ANCOVA was conducted (n = 41) using pre-chat perceptions of similarity as the dependent variable and mentor agreeableness and

openness to experience as covariates. Results yielded a significant interaction between gender composition and protégé distance from the golden ratio, $F(2, 33) = 3.72$, $p < .05$.

The pattern of means for opposite-gender dyads indicated that mentors perceived their protégés to be more similar to themselves when the protégé's facial features were the farthest from the golden ratio (closest, $M = 3.73$; moderate, $M = 3.80$; farthest, $M = 4.48$). In addition, the results of a simple effects test resulted in significant differences between those that were closest and farthest ($p < .05$) those that were moderately distant and farthest ($p < .10$). Thus, Hypothesis 1 was not supported. If fact, this pattern was directly opposite from that which was expected. For same-gender dyads, the pattern of the means was curvilinear, as expected (closest, $M = 4.27$; moderate, $M = 4.46$; farthest, $M = 3.61$). The results of a simple effects test resulted in significant differences between those that were closest and farthest ($p > .05$) and those that were moderately distant and farthest ($p < .01$) but not between those that were moderately distant and closest ($p = .38$). Thus hypothesis 2 was partially supported- those that were moderately distant from the golden ratio was perceived as significantly more similar that those that were farthest, but not differently than those that were closest. See Figure 2 below for a graphical representation of the interaction.

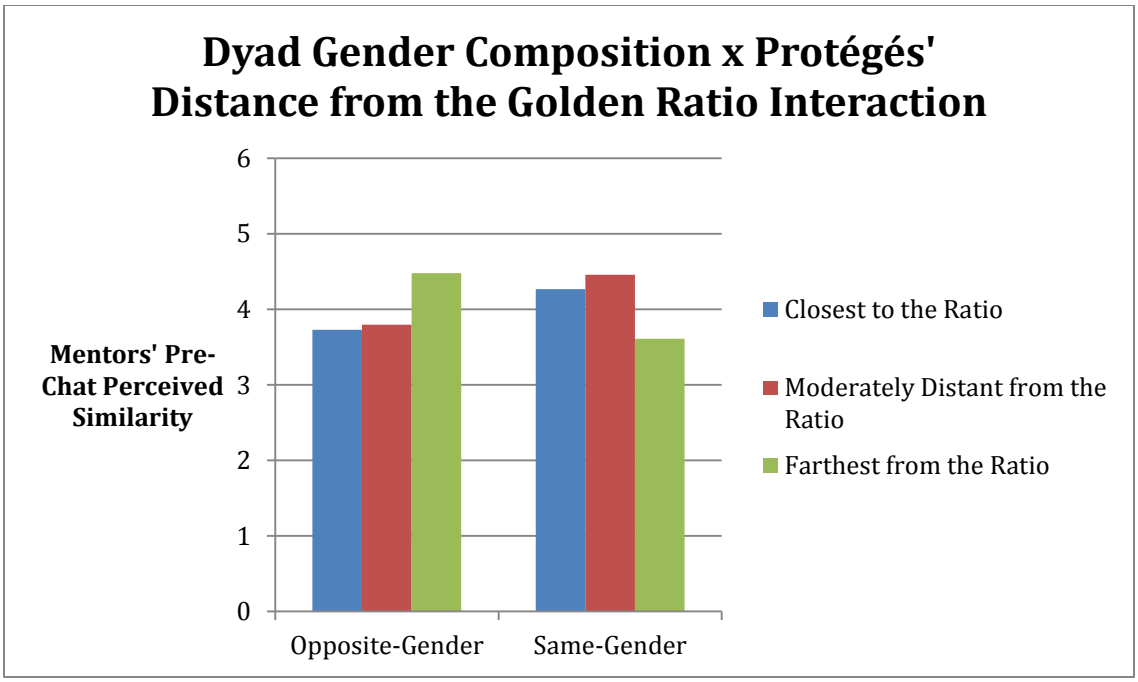


Figure 2. Dyad Gender Composition x Protégés' Distance from the Golden Ratio Interaction on Mentors' Pre-Chat Perceived Similarity in the Picture Condition

Facial Measurements on Protégé-Reported Mentoring Received (Hypotheses 3 and 4)

Hypothesis 3 stated that protégés whose facial features were closest to the golden ratio (top third of distribution) would receive greater mentoring than would protégés farther from the golden ratio if their mentor was of the opposite gender. By contrast, Hypothesis 4 stated that protégés whose features were moderately distant from the golden ratio would receive greater mentoring than protégés closer (top third) and farther (bottom third) from the golden ratio if their mentor was of the same gender. These two hypotheses were tested using protégés' in the picture condition only.

A 2 (gender combination- same/different) x 3 (protégé distance from the golden ratio low/medium/high) factorial ANCOVA using protégés' expectation of receiving mentoring and

their perceptions of similarity to the mentor as covariates was conducted (n = 40). Results of this analysis yielded a significant interaction between gender combination and protégé distance from the golden ratio, $F(2, 32) = 3.54$, $p < .05$. Specifically, the pattern of the means for opposite-gender dyads indicated that protégés felt they received more mentoring the closer their facial measurements were to the golden ratio (closest, M = 4.59; moderate, M= 3.76; farthest, M= 3.41). The results of a simple effects test resulted in significant differences between those that were closest and moderately distant ($p > .05$) and those that were closest and farthest ($p < .01$). Thus, Hypothesis 3 was supported. The pattern of the means for same-gender dyads was curvilinear, as expected (closest, M = 3.73; moderate, M= 3.98; farthest, M= 3.74). The results of a simple effects test did not result in significant differences between any of the different levels of protégé facial distances. Thus, the pattern of the means were indicative of Hypothesis 4 but were not significantly different; in other words, protégés with facial features that were moderately distant from the golden ratio in same-gender dyads perceived that they received the more mentoring than did those closest and farthest from the golden ratio. Thus, Hypothesis 4 was not supported. See Figure 3 below for a graphical representation of the relationship between facial measurements and mentoring received within the gender combinations.

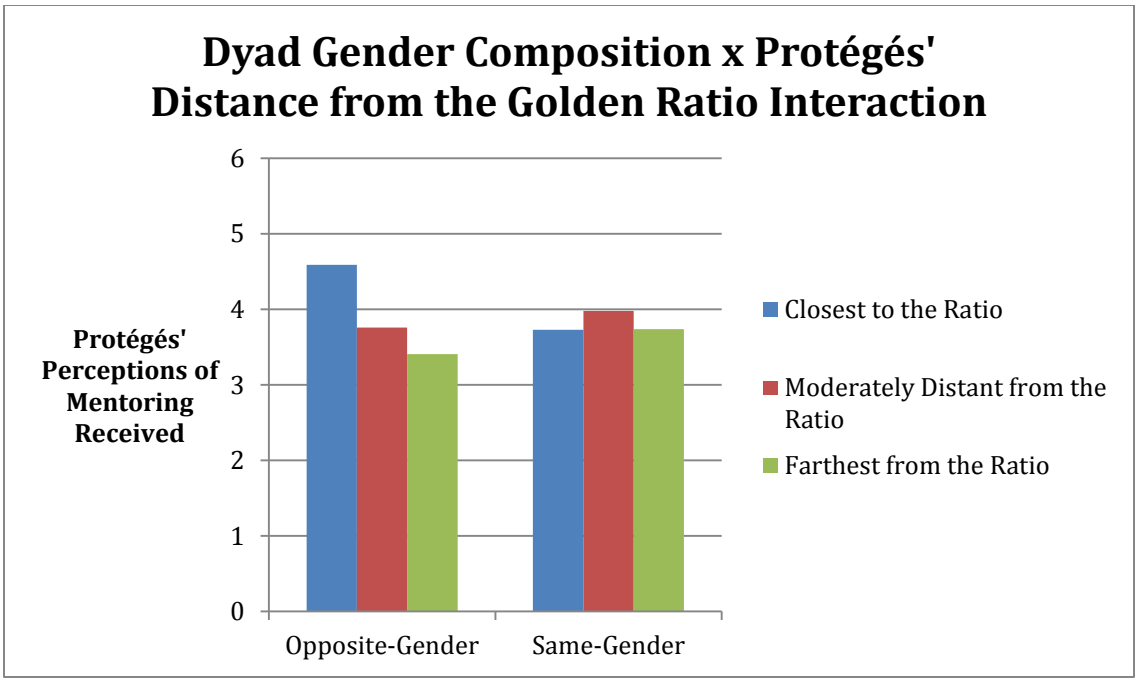


Figure 3. Dyad Gender Composition x Protégés' Distance from the Golden Ratio Interaction on Mentoring Received in the Picture Condition

Mentors' Perception of Similarity and Mentoring Received (Hypothesis 5)

Hypothesis 5 stated that mentor-perceived similarity to the protégé would partially mediate the relationship between the protégés' facial measurements and the mentoring that protégés received. To test this Hypothesis, the Baron and Kenny (1986) mediation technique was planned to be used. In order to qualify for mediation, 3 steps must be taken. First, there must be a relationship between the independent variable (protégés' facial measurements) and the dependent variable (mentoring received). Secondly, there must be a relationship between the independent variable (protégés' facial measurements) and the mediator (perceived similarity). Lastly, after controlling for the mediator, the relationship between the independent variable (protégés' facial measurements) and the dependent variable (mentoring received) must disappear altogether (full

mediation) or decrease in strength (partial mediation). Support for the first two steps was detailed in my tests of Hypotheses 1-4. There was no relationship between the mediator and the dependent variable, however, I still performed an ANCOVA on mentoring received, adding mentors' pre-chat perceived similarity as an additional covariate. In this analysis, mentor perceptions of similarity to their protégé were not significantly related to protégé perceived mentoring received. Moreover, the interaction term including gender combination and protégé distance from the golden ratio did not drop [$F(2, 31) = 4.26$, $p < .05$], indicating that there was no mediation.

Thus, Hypothesis 5 was not supported. Mentors' pre-chat perceived similarity did not mediate the relationship between protégés' distance from the golden ratio and the amount of mentoring they received.

Impact of Withholding Visual Cues (Hypotheses 6 and 7)

Hypothesis 6 stated that providing opposite-gender mentors with a picture of their protégé would have a positive impact on perceptions of similarity for protégés with facial features closest to the golden ratio but a negative impact for protégés farthest from the "golden ratio." Hypothesis 7 stated that providing same-gender mentors with a picture of their protégé would have a positive impact on perceptions of similarity for protégés moderately distant from the golden ratio but a negative impact for protégés closest and farthest from the "golden ratio."

These hypotheses were tested by examining the three-way interaction of protégés' facial features, gender combination and picture condition in predicting mentors' pre-chat perceived similarity ($n = 77$). A 2 (pic/non-pic) x 2 (gender combination- same/different) x 3 (protégé

distance from the golden ratio low/medium/high) factorial ANCOVA using mentor agreeableness and openness to experience as covariates was conducted. Results indicated that the interaction term was not significant, F (2, 63) = .97, p = .39. Although not significant, it is worth examining the pattern of the means. When comparing dyads within gender compositions mentors perceived their protégés similarly irrespective of picture condition (see Figures 4 and 5 below).

Thus, neither Hypothesis 6 nor Hypothesis 7 was supported. Providing a picture to mentors did not have a differential effect on mentor perceptions of similarity to their protégé as a function of gender composition and protégé distance from the golden ratio.

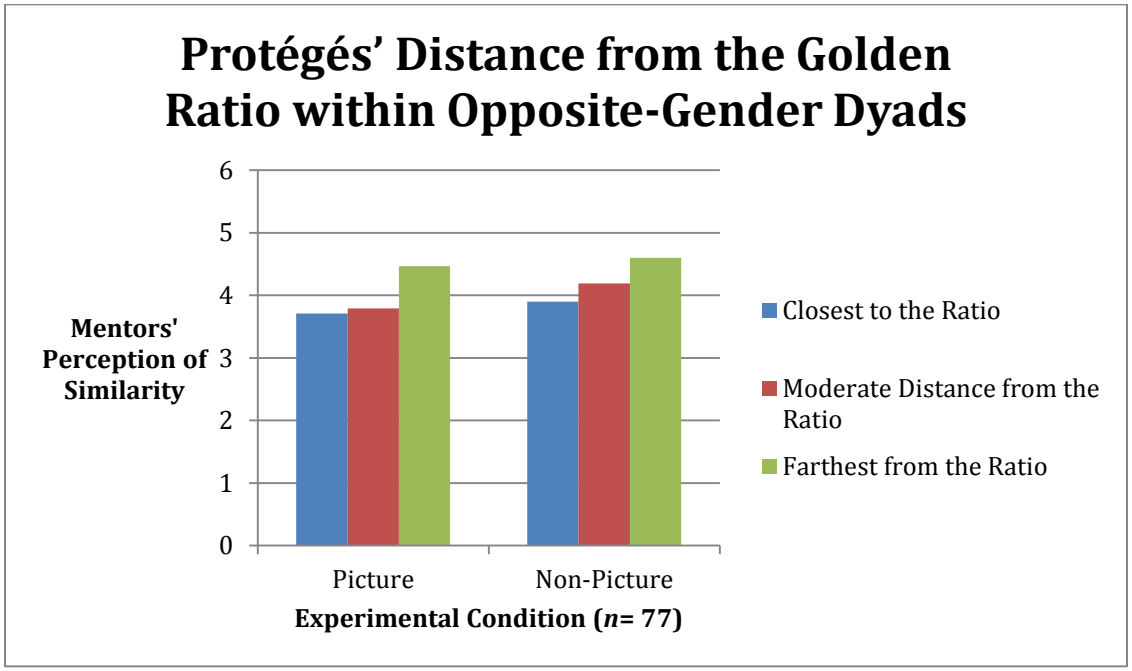


Figure 4. Picture x Protégés' Distance from the Golden Ratio Interaction on Mentors' Pre-Chat Perception of Similarity in Opposite-Gender Dyads

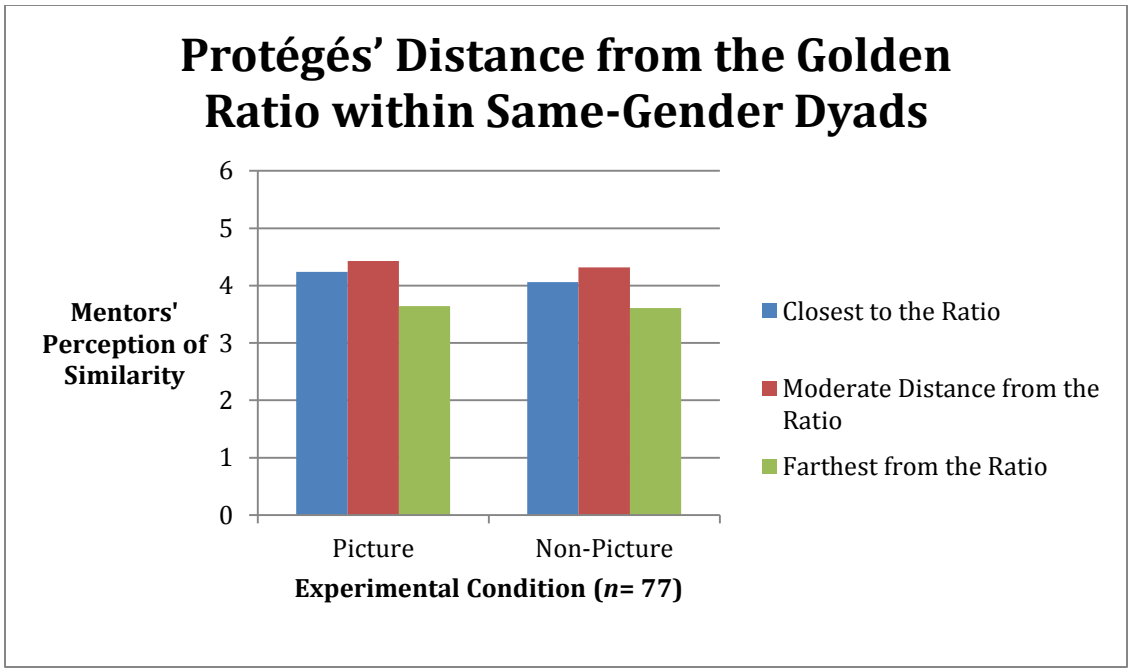


Figure 5. Picture x Protégés' Distance from the Golden Ratio Interaction on Mentors' Pre-Chat Perception of Similarity in Same-Gender Dyads

Inputs and Outcomes of Protégé Proactivity (Hypotheses 8 and 9)

Hypothesis 8 stated that protégés with facial features moderately distant from the golden ratio would demonstrate less proactive behavior during their e-mentoring sessions than those that are (a) closest and (b) farthest from the "golden ratio." To test this hypothesis, 2 (pic/non-pic) x 2 (gender combination- same/different) x 3 (protégé distance from the golden ratio low/medium/high) factorial ANCOVA (n = 77), using protégés' expectations of receiving mentoring functions and their post-chat perceived similarity as covariates, yielded a non-significant main effect of protégés' distance from the golden ratio on mean coded proactivity [$F(2, 63) = .28$, $p = .76$]. Thus, Hypothesis 8 was not supported. However, the ANCOVA indicated that there was a significant interaction between protégés' distance from the golden ratio

and picture condition, $F(2, 63) = 3.18$, $p < .05$. Specifically, in the non-picture condition, protégés demonstrated the greatest proactivity the further their measurements were from the golden ratio (closest, 13.91; moderate, 17.66, farthest, 18.68) while the opposite was found for those in the picture condition (closest, 19.17; moderate, 17.82, farthest, 14.26). See Figure 6 below for a graphical representation of the interaction.

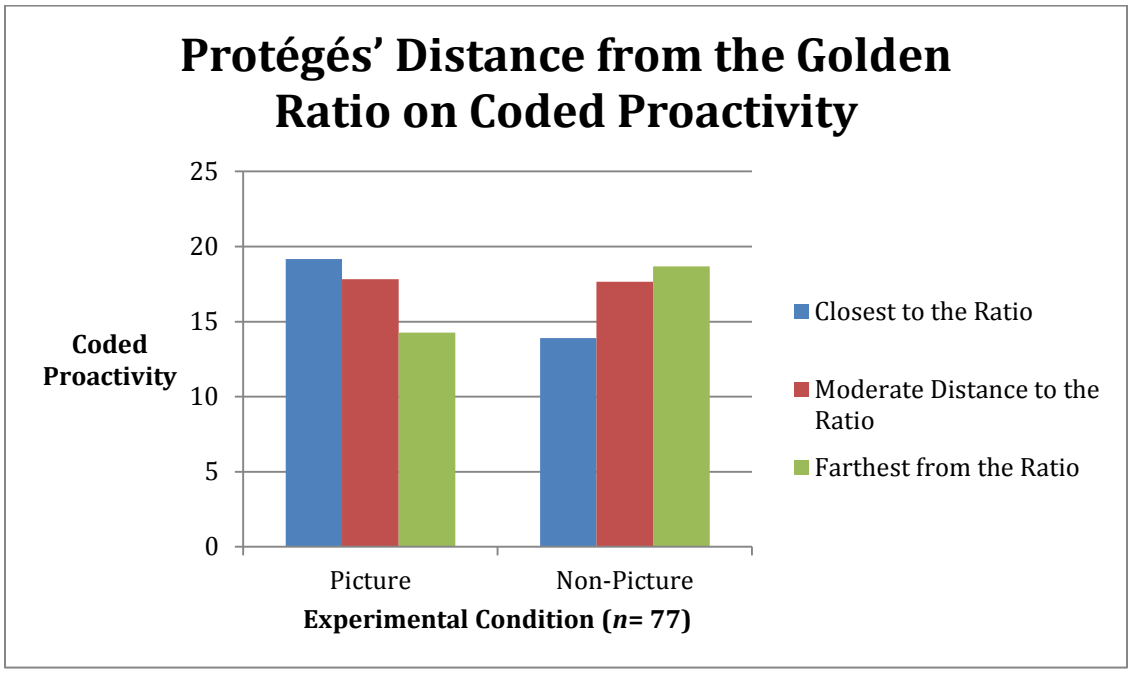


Figure 6. Protégés' Distance from the Golden Ratio on Coded Proactivity between Picture Conditions

Hypothesis 9 stated that protégés who demonstrated higher levels of proactivity during their e-mentoring sessions would receive greater amounts of mentoring from their mentor. This hypothesis was tested by examining the correlation between protégés' perceptions of mentoring received and their coded levels of proactivity. This correlation was significant [r (77) = .25, $p < .05$]. Thus, Hypothesis 9 was supported.

Relationships between Mentoring Received and Outcomes (Hypotheses 10, 11, and 12)

The next three Hypotheses looked at the relationship between mentoring received and protégés' perception of the extent to which mentors reduced their stress, protégé self-efficacy and protégé relationship fulfillment.

Protégé Stress

Hypothesis 10 stated that protégés who receive greater mentoring from their mentors would report lower post-mentoring stress. This hypothesis was tested by looking at the correlation coefficient between the mentoring that protégés received and the extent to which their mentors reduced their stress. This relationship was significant and positive [r (77) = .58, p < .001]; thus, Hypothesis 10 was supported. In other words, protégés' perception of mentoring received was significantly related to the extent to which they perceived mentors reduced their stress.

Protégé Self-Efficacy

Hypothesis 11 stated that after controlling for pre-mentoring self-efficacy, protégés who received greater mentoring from their mentors would report greater post-mentoring self-efficacy. The results of a hierarchical linear regression indicated that protégés' perception of mentoring received was a significant predictor of their post-chat self-efficacy, β= .34, t(116) = 4.22, p < .01. Table 4 displays the regression coefficients (*B)*, standardized regression coefficients (β), 95% confidence intervals, R^2 and change in R^2. The 95% confidence interval for the slope, .15 to .43

does not contain the value of zero, suggesting that protégés' perception of mentoring received is significantly related to their post-chat self-efficacy. Thus, Hypothesis 11 was supported (see Table 4). In other words, after controlling for protégés' pre-chat self-efficacy, their perceptions of mentoring received was a significant predictor of their post-chat self-efficacy.

Table 4. Hierarchical Regression Analyses for Variables Predicting Protégé Post-Chat Self-Efficacy

	Step 1			**Step 2**		
Variable	***B***	*B*	95% CI	***B***	*β*	95% CI
Protégés' Pre-Chat Self-Efficacy	.53	.40**	[.31, .74]	.51	.39**	[.30, .71]
Protégés' Perception of Mentoring Received				.29	.34**	[.15, .43]
R^2			.16			.27
ΔR^2			--			.11
Adjusted R^2			.16			.26
F			22.57**			21.82**

Notes. $n = 118$. CI = Confidence Interval.
Two-tailed, *$p < .05$, **$p <. 01$.

Protégé Relationship Fulfillment

Hypothesis 12 stated that protégés who received greater mentoring from their mentors would be more fulfilled with their mentoring relationships. Protégés' expectation of how much mentoring they would receive was used as a covariate, as it was significantly related to protégé relationship fulfillment, $r\ (77) = .23$, $p < .05$. The results of a hierarchical linear regression indicated that protégés' perception of mentoring received was a significant predictor of their

relationship fulfillment, β= .34, $t(116) = 4.22$, $p < .01$. Table 5 displays the regression coefficients (*B)*, standardized regression coefficients (β), and 95% confidence intervals. The 95% confidence interval for the slope, .15 to .43 does not contain the value of zero, suggesting that protégés' perceptions of mentoring received is significantly related to their relationship fulfillment. Thus, Hypothesis 12 was supported. In other words, protégés' perception of mentoring received was a significant predictor of their relationship fulfillment.

Table 5. Hierarchical Regression Analyses for Protégés' Perceptions of Mentoring Received Predicting Protégé Relationship Fulfillment

	Step 1			**Step 2**		
Variable	***B***	β	95% CI	***B***	β	95% CI
Protégés' Expectation of Mentoring Received	.30	.23*	[.01, .59]	.03	.02	[-.23, .29]
Protégés' Perception of Mentoring Received				.60	.57**	[.39, .82]
R^2			.05			.34
ΔR^2			--			.28
Adjusted R^2			.04			.32
F			4.29*			18.87**

Notes. n = 76. CI = Confidence Interval.
Two-tailed, *$p < .05$, **$p <. 01$.

CHAPTER FIVE: DISCUSSION

Summary of Results

The main purpose of this study was to examine the extent to which protégés' objective facial features affected perceived similarity according to mentors as well as subsequent levels of mentoring received in the context of a formal online peer mentoring program. In total, 7 of the 12 original hypotheses were supported and will be discussed below (see Table 6 below). As hypothesized, within same-gender dyads, protégés whose facial features were moderately distant from the golden ratio were perceived by their mentors to be more similar and received more mentoring from those mentors. Within opposite gender dyads, the closer a protégé was to the golden ratio the less similar they were perceived to be but the more mentoring they received. Providing mentors with a picture of their protégé did not moderate the effects of gender composition and facial measurement on perceived similarity as hypothesized. However, unexpectedly, providing mentors with access to visual cues reversed the relationship between protégés' distance from the golden ratio and their proactivity. Within dyads where the mentor had access to a picture of their protégé, protégés were more proactive the closer they were to the golden ratio, whereas the reverse was true within dyad where the mentor did not have access to visual cues. Consistent with expectations, protégés who were more proactive reported receiving greater mentoring. Finally, those who reported receiving greater mentoring were more fulfilled with their relationships, reported greater stress reduction and had self-efficacy at the conclusion of the mentoring program.

Table 6. Summary of Results and Hypotheses

Hypothesis	Result
1. Hypothesis 1:	
Protégés whose facial features are closest to the "golden ratio" (top third of distribution) will be rated as more similar than protégés farther from the "golden ratio" by mentors of the opposite gender.	*Not supported*. *Unexpected Finding*. Opposite effect found.
2. Hypothesis 2:	
Protégés whose features are moderately distant from the "golden ratio" will be rated as more similar than protégés closer (top third) and farther (bottom third) from the "golden ratio" by mentors of the same gender.	*Partially Supported.* Mentors in same-gender dyads perceived themselves to be most similar to protégés that were moderately distant from the golden ratio in comparison to those that were farthest but not those that were closest.
3. Hypothesis 3:	
Protégés whose facial features are closest to the "golden ratio" (top third of distribution) will receive greater amounts of mentoring than will protégés farther from the "golden ratio" if their mentor is of the opposite gender.	*Supported.* Protégés in opposite-gender dyads whose facial features were closest to the golden ratio received the greatest amount of mentoring.
4. Hypothesis 4:	
Protégés whose features are moderately distant from the "golden ratio" will receive greater amounts of mentoring than protégés closer (top third) and farther (bottom third) from the "golden ratio" if their mentor is of the same gender.	*Not Supported.* Protégés with facial features that were moderately distant from the golden ratio in same-gender dyads perceived that they received the most mentoring but these differences were not statistically significant.
5. Hypothesis 5:	
Mentor-perceived similarity to the protégé will partially mediate the relationship between the protégés' facial measurements and the mentoring that protégés receive.	*Not supported.*

Hypothesis	Result
6. Hypothesis 6:	
Providing opposite-gender mentors with a picture of their protégé will have a positive impact on perceptions of similarity for protégés moderately distant from the "golden ratio" but a negative impact for protégés closest and farthest from the "golden ratio."	*Not supported.* Providing a picture to opposite-gender dyads did not have an effect on the relationship between protégés' facial features and mentors' perceptions of similarity before chatting.
7. Hypothesis 7:	
Providing same-gender mentors with a picture of their protégé will have a positive impact on perceptions of similarity for protégés with facial features closest to the "golden ratio" but a negative impact for protégés farthest from the "golden ratio."	*Not supported.* Providing a picture to same-gender dyads did not have an effect on the relationship between protégés' facial features and mentors' perceptions of similarity before chatting.
8. Hypothesis 8:	
Protégés with facial features moderately distant to the "golden ratio" will demonstrate fewer proactive behaviors during their e-mentoring sessions than those that are (a) closest and (b) farthest to the "golden ratio."	*Not supported.* *Unexpected Finding.* Protégés with facial features farthest from the golden ratio demonstrated more proactivity in the non-picture condition while those that were closest to it demonstrated proactivity in the picture condition.
9. Hypothesis 9:	
Protégés who demonstrate higher levels of proactivity during their e-mentoring sessions and in turn will receive greater amounts of mentoring from their mentor.	*Supported*. Coded proactivity was significantly correlated with protégés' perceptions of mentoring received.
10. Hypothesis 10:	
Protégés who receive greater amounts of mentoring from their mentors will report lower levels of stress associated with the mentoring.	*Supported*. Protégés' perception of mentoring received was positively correlated with the extent to which they perceived mentors

Hypothesis	Result
	reduced their stress.
11. Hypothesis 11:	
After controlling for pre-mentoring self-efficacy, protégés who receive greater amounts of mentoring from their mentors will report higher post-mentoring self-efficacy.	*Supported.* After controlling for protégés' pre-chat self-efficacy, their perception of mentoring received was a significant predictor of their post-chat self-efficacy.
12. Hypothesis 12:	
Protégés who receive greater amounts of mentoring from their mentors will be more fulfilled with their mentoring relationships.	*Supported.* Protégés' perception of mentoring received was a significant predictor of their relationship fulfillment.

Theoretical Implications

Below, I detail the theoretical implications for the results of this study. They will be discussed in the order in which they were presented in the introduction. The difference between dyads of differing gender compositions will be discussed together within each relationship of interest.

Facial Measurements and Perceptions of Attractiveness

The findings associated with the measurements were associated with the attractiveness bias but there were insignificant relationships between perceptions of attractiveness and the facial measurements. Attractiveness is a complex judgment that is determined by many different physical as well as mental/emotional aspects. Although the ranking of objective beauty may be

the same across people, the unique characteristics that make two people similarly or dissimilarly attractive can vary widely (e.g. Alley & Cunningham, 1991; Langlois & Roggman, 1990; Perrett, May & Yoshikawa, 1994; Valentine, Darling, & Donnelly, 2004). The inspiration for this study was Pallet and colleagues' (2009) study on facial feature arrangement and attractiveness and their findings that the attractiveness of faces was optimized when the height ratio was approximately 36%. This measurement also corresponded with measurements found in an average face, which is one of the characteristics that is often associated with attractiveness. Attractiveness has been found to be very important to one's sense of self-worth and one which people often use to compare themselves to (same-gender) others (Park & Maner, 2009; Thornton & Ryckman, 1991; Wheeler & Miyake, 1992). The adaptive purposes of making differential attributions based on gender are to protect one's self-esteem and maintain self-confidence about one's abilities when making same-gender comparisons while increasing the desirability of an opposite-gender other. Tesser's (1988) self-evaluation maintenance model can be used to explain the negativity associated with attractive same-gender individuals. This theory posits that individuals are motivated to maintain a positive self-evaluation and thus react to threatening social comparisons by having negative feelings toward, derogating, or avoiding the source of the threat in order to protect their self-esteem (Agthe et al., 2008; Salovey & Rodin, 1984). Previous research has shown that exposure to attractive others leads to lower self-ratings of attractiveness; and alternatively, exposure to unattractive others leads to higher self-ratings of attractiveness, especially when the rater perceives themselves to share similar attitudes and values (Brown et al., 1992; Little & Mannion, 2006). Not only does exposure to a more attractive same-gender other lead to lower self-ratings of attractiveness, it also leads to more negative moods (Salovey &

Rodin, 1984). Furthermore, I also found that the mentors' perceptions of attractiveness were significantly related to their personality traits. Because of the implications that self-perceptions and biases have when ratings others' physical appearance and moreover, the finding that attractiveness can be objectively broken down by measuring the spatial distances of facial features, these measurements provide for a more accurate indicator of others' attractiveness. Additionally, this also explains why there the measurements were not significantly related to the perceptions.

Facial Measurements and Mentors' Perception of Similarity

Before describing the relationship that protégés' facial measurements had with mentor perceptions, it is worth nothing that in line with previous research (Ensher & Murphy, 1997) mentors reported greater levels of perceived similarity in same-gender dyads versus opposite-gender dyads. Also, it should be noted that gender composition may affect sensitivity to detect differences in facial measurements. In fact, mate selection theory (Langlois et al., 2000) states that female attractiveness is more desired by men whereas resources are more desired by females, therefore attractiveness might be more important when males are judging females than when females are judging males. Female attractiveness "buys" more than male attractiveness (Mathes & Kahn, 1975).The next step was to examine the relationship between protégés' facial measurements and similarity, and I found that protégés' distance from the golden ratio did not have the expected effect on mentors' pre-chat perceived similarity in opposite-gender dyads (Hypothesis 1), but it did have the expected effect in same-gender dyads (Hypothesis 2), albeit only when comparing those that were moderately distant from the golden ratio to those that were

farthest from it. Specifically, after being exposed to their protégé's profile which included their picture, mentors in same-gender dyads perceived themselves to be the most similar to those whose facial features were moderately distant from the golden ratio. This is in line with the theory that most people perceive themselves to be at least average in most characteristics, including attractiveness (Horton, 2003).

Within the opposite-gender dyads I expected mentors to perceive themselves as most similar to those that were closest to the ratio but the results showed greater similarity with those that were farthest. One of the explanations for this is that mentors deemed physical appearance in the opposite gender irrelevant within the context of a mentoring especially when they were oriented on the specific purposes of the program. Unlike what would occur within same-gender dyads, the sexual attribution bias predicts that those of the opposite gender do not pose threats to one's well-being, therefore they would not be derogated the same as would an attractive same-gender other (Agthe & Spörrle, 2009). However, mentors in opposite-gender dyads still might have felt the compulsion to succumb to the attractiveness bias, but given the non-dating context, chose to behave differently. Specifically, in an effort to overcompensate for their bias, they behaved more positively toward those whose facial features were farthest from the golden ratio. Just like those that are unattractive overcompensate for the stigma usually shown against them by behaving more positively, those that feel it is inappropriate to react negatively to someone's attractiveness chose instead to be more proactive in helping them (Andreoletti et al., 2001).

Facial Measurements and Mentoring Received

When examining the effect of protégés' facial measurements on mentoring received, results indicated that the expected effects were found both within same-gender and opposite-gender dyads. In same-gender dyads, protégés that were moderately distant to the ratio perceived that they received greater amounts of mentoring as compared to the other two groups, but the differences were not statistically significant. Within opposite-gender dyads, those that were closest to the ratio perceived receiving greater mentoring. These findings support both aspects of the sexual attribution bias- that is, of derogating same-gender others in an effort to bolster one's self-esteem and to glorify attractive opposite-gender others due to intrinsic interest (Maner et al., 2009). Additionally, these findings support the idea that not only is attractiveness glorified, but unattractiveness is also penalized (Griffin & Langlois, 2006; Masman, 1978). Even with protégés being unaware of their mentor having access to a picture of them, protégés with different facial measurements perceived differences in the way that mentors behaved toward them. This suggests that interactions between individuals are a function of not only the target, but also the perceiver and that there is an intricate interplay between characteristics as well as perceptions in determining behavior (Swann, 1984).

Mentor perceptions of similarity did not mediate the relationship between facial measurements and mentoring received (Hypothesis 5). It is possible that facial measurements impacted mentoring provided through anther affective mechanism such as liking, trust, or perceived competence. It may also be that the context of participants' interaction with one another in this study (i.e., to give and to receive assistance) inhibited mentors from reporting negative reactions associate with their protégés. In fact, higher similarity was reported by

opposite-gender protégés who were farthest from the golden ration. This may have reflected sympathy toward those protégés. However, the expected preference for opposite gender protégés who were closest to the golden ratio was clearly demonstrated in protégé reports of the mentors' behavior.

Facial Measurements and the Impact of Withholding Visual Cues

Prior studies have found support for the enhancing abilities of providing greater cues within online relationships, such as a simple photograph (Walther et al., 2001). The addition of these cues has traditionally led to more positive feelings and greater affinity between individuals interacting online. When examining the general positive effect of visual cues on study variables, I found that compared to those in the non-picture condition, protégés in the picture condition reported significantly higher levels of post-chat self-efficacy. Also, although not significant, protégés in the picture condition also perceived themselves to be more similar to their mentors, reported receiving more mentoring, and were more fulfilled with their relationships. Because protégés were not aware of what picture condition they were in, these finding suggest that the visual cues generally had a positive effect on these outcomes through positively affecting mentors' behavior.

I further tested whether providing a picture interacted with protégés' facial measurements to predict mentors' perceived similarity and found this interaction not to be significant (Hypotheses 6 and 7). The similar pattern of means when comparing opposite-gender dyads and same-gender dyads across the picture condition suggests that protégés wrote their profiles consistently with how they looked regardless of whether or not they were seen. This provides

support for the self-fulfilling prophecy in explaining why people of different physical appearances not only are perceived different but also behave differently (Merman, 1948).

Thus, the picture had a main effect on some of the outcomes of interest but did not have differential effects depending on the facial measurements. Although mentors in the picture condition were instructed to peruse the protégé's profile prior to filling out the measures, it could be that mentors felt uncomfortable incorporating a superficial quality such as physical appearance when rating perceived similarity. It should be noted that the above relationships with protégé facial measurements and mentors' perceived similarity were found while examining only mentors in the picture condition and only for same-gender dyads.

Another relationship of interest in this study was the extent to which unattractiveness (defined as those whose facial features were farthest from the golden ratio) was penalized. As stated previously, unattractive individuals are usually ascribed negative qualities (Dion et al., 1973). The findings of this study indicate that protégés that were furthest from the golden ratio received the lowest levels of mentoring from opposite-gender mentors in the picture condition. They also displayed the lowest levels of proactivity in the picture condition.

Although the findings of this study when it came to the provisioning of pictures were not as robust as other studies, and this may be due to the nature of the interactions within this study as compared to other studies. The majority of studies examining the effect of physical appearance on interactions include short-term interactions that did not require much commitment (forced or otherwise) from the rater. Regardless of picture condition, mentors received profile information that described their protégés' hobbies, interests, major and other information and this information may have been sufficient to create a comparable level of comfort regardless of

picture. Future research should examine the effect of physical appearance in virtual settings with more interactive cues that involve live face-to-face streaming. Perhaps the constant approximation of face-to-face interactions would be more susceptible to judgments based on superficial characteristics.

Facial Measurements and Protégé Proactivity

I hypothesized that protégés with facial features closest and farthest from the golden ratio would display the greatest amounts of proactivity. I argued that this would reflect interpersonal habits developed on the basis of a history of being treated in accordance with their facial attractiveness, which in this study was represented by the spatial relations between facial features (Pallet et al., 2010). However, this expected U-shaped effect was not found (Hypothesis 8) and in fact, there was a significant interaction between facial measurements and the experimental condition on protégé proactivity. Strikingly, those closest to the golden ratio demonstrated the greatest proactivity in the picture condition, whereas those that were farthest from the golden ratio were the most proactive in the non-picture condition. These findings suggest that protégés in the picture condition may have reacted to differences in the way they were perceived by mentors. In fact, previous research purports that attractive people are purported to have personality characteristics that they do not indeed possess (Shea et al., 1978). However, in line with the self-fulfilling prophecy, the difference in behaviors stem from others' expectations that they possess more positive characteristics. Perhaps protégés whose features are farther from the golden ratio were hindered and treated less warmly in the picture condition and when not seen, were given the opportunity to use the skills I argued earlier that they may have developed in

order to compensate for a history of negative reactions. Since protégés were not aware that their mentors saw or did not see a picture of them and proactivity was measured by examining protégé behavior directly, this effect manifested itself through mentors' behaviors towards protégés. More specifically, protégés with facial features farthest from the golden ratio whose mentors did not see their picture did not experience the stigma associated with their physical appearance. These differences in protégé proactivity are important given that proactivity was positively correlated with mentoring received which was in turn related to positive socialization outcomes.

Proactivity, measured as a protégé personality characteristic, has been associated with the receipt of greater amounts of mentoring in prior research (Turban & Dougherty, 1994). This relationship is intuitive, for what it implies essentially is that mentors are more willing to provide helpful information and advice to those that are more likely to ask for this kind of advice. The present study extends prior research by demonstrating that protégés' level of proactivity can also be affected by mentors' reactions to them.

Outcomes of E-Mentoring

In addition to the direct effects of objective facial measurements, another purpose of this study was to examine the relationship between mentoring received and socialization outcomes, which in this study were operationalized as protégés' perceptions of the extent to which mentor reduced their stress (Hypothesis 10), post-chat self-efficacy (Hypothesis 11) and relationship fulfillment (Hypothesis 12). The emotional and instrumental support that protégés felt mentors provided should be related to protégés' perceptions that their mentors helped reduce their stress. Indeed, this relationship was supported and was highly significant. A similar relationship was

found for post-chat self-efficacy; that is, protégés that reported receiving greater mentoring also reported greater levels of self-efficacy post-chat after adjusting for their pre-chat self-efficacy. In examining relationship fulfillment, again, protégés' sense of how much mentoring they received was related to higher levels of relationship fulfillment, even after accounting for their expectations of how much mentoring they would receive. In line with previous research, this study provided support for the increase in formal mentoring programs, especially those used to socialize protégés.

Practical Implications

Physical appearance is one of the most readily discernible and judged characteristics that people are exposed to when they meet others. Furthermore, there is an overwhelming amount of research that supports the idea that people make far-reaching and significant decisions based on the attributes they associate with attractiveness. However, attractiveness is a judgment that can be tainted by a variety of characteristics such as rater idiosyncratic preferences, affective components, motives and their awareness of the setting in which these judgments are being made. This bias can be particularly troublesome, especially because they may cause detrimental effects for those that enter career development programs to improve their skills, naïve to the effect the possibly detrimental effects that unrelated characteristics are having on the support that they receive. Facial measurements have been found to be an (unbiased) indicator of attractiveness (Pallet et al., 2010) and were found to be related to mentors' perception of similarity to their protégé (for same-gender dyads) as well as to the amount of mentoring that they received in the present study.

In this study, I found that there was a tendency for a preference for those that were moderately distant to the golden ratio within same-gender dyads and for those that were closest to the golden ratio within opposite-gender dyads. One of the practical implications for these findings is for practitioners to take active measures to manage the effect of physical characteristics within programs that are meant to empower individuals in their abilities and skills. Particularly, program administrators should take care to train mentors thoroughly in what their goals and duties for the program will be, so that these expectations can be more readily met. This study also found that protégés with varying facial measurements behaved differently based on whether or not a picture of them was given to their mentors. In line with previous research, this study found that only those with facial measurements associated with greater attractiveness (closest to the golden ratio) benefited when a visual image is provided and that those with measurements associated with less attractiveness (farthest from the golden ratio) fare better when no image of them is provided (Masman, 1978). An obvious implication is to consider participant attractiveness when deciding the extent to which visual information should be exchanged between individuals. With the advent of technologies that allow individuals to be virtually connected around the clock, we may also see a rise in the use of software that approximates face-to-face interactions to a greater extent (e.g. Skype). The results of this study indicate that practitioners should take into consideration the potential for graver effects in shorter-term interactions with more interactive technologies. Developing training programs that make individuals aware of the potential biases that may be exacerbated in virtual settings as opposed to face-to-face settings can go a long way into making virtual technologies as useful as possible.

Next, when designing a system for matching mentors and protégés, administrators should allow as much choice as possible and if not possible, should highly consider matching individuals according to gender, as these individuals developed greater affinity towards each other. Another interesting finding was that proactive protégés received greater amounts of mentoring. Even though protégés were not trained on how to exhibit proactive behaviors in my study, this finding indicates that it is something worthwhile to consider when implementing mentoring programs. Lastly, this research found that the mentoring given contributed significantly to protégés' well-being in the form of stress, self-efficacy and relationship fulfillment. Thus the program was successful in accomplishing what it was designed to do- help develop protégés into more confident and self-assured university students.

Limitations and Future Research Directions

Manipulation Effect

The relatively impersonal online setting also might have hindered the biases and cognitions that may be activated by attractiveness in an in-person setting, especially for opposite-gender dyads. Further, although mentors were sent their protégés' pictures to their study-created mentor e-mail account as well as explicitly having them presented at orientation, these manipulations might not have been strong enough to elucidate the attractiveness biases that are often examined in longer-term relationships. Stronger attractiveness effects may be found in situations that require face-to-face interactions, where attractiveness is more tangible and has greater potential to be distracting. Future research should examine this concept within mentoring

relationships that require more face-to-face time or more interactive virtual mediums (e.g. Skype). It could also be that the pre-chat questions that asked mentors to report on their own and protégé attractiveness along with mentor measures may have primed mentors to become more aware of the inappropriateness of using attractiveness as a characteristic in judging their protégés, thus effectively washing out the bias. Additionally, only mentors received visual information of their protégés. Future research should examine the effect of giving protégés pictures of their mentors only as well as giving both of them pictures of each other. Enriching the information in the relationship for both parties may have resulted in even richer interactions.

Generalization

One of the main limitations of this study, beyond the sample of the study being college-aged, is the skewed gender composition of the dyads. Specifically, because a majority of the participants were recruited from psychology courses, which are primarily female-dominated, there was a small sampling of males for both mentors and protégés, resulting in a small sample of opposite-gender and same-gender male protégé dyads. Relatedly, the range in measurements of my study were smaller in range and different than those used in the original study and further, there is no data available that discusses the extent to which either of these ranges are representative of the general population. This possible restriction of range limits the generalizability of the study's findings. Also, this study was relatively short in duration, volunteer-based, conducted online and highly controlled. Thus, different results may come about in a field setting with longer face-to-face programs that force individuals to participate as mentors. The attractiveness bias may be even stronger in cases where people are not intrinsically

motivated to mentor and are forced to volunteer to help someone for a longer period of time because they are probably more likely to use peripheral cues to determine affinity towards the other person. Another variable that may affect the reactions to attractiveness is sexual orientation. That is, the sexual attribution bias posited that individuals would appraise individuals as either threats or mates based on their gender, however, the gender composition would have a different effect on individuals that were bisexual or homosexual. Future research should collect sexual orientation and investigate how attractiveness may manifest itself differently based on that. Lastly, individuals may react differently to physical appearance based on the race of the target, so this variable would be interesting to look at as another moderating variable.

Assignment to Conditions

Because this study took place over multiple semesters and at various points within the semesters, the outcomes related to participating in the mentoring program may have been affected by the semester as well as the timing within the semester. Additionally, the last phase of data collection intended to substantiate the non-picture and opposite-gender samples and although it resulted in fairly equal (random) assignments across these conditions, the data collected from previous studies might have been systematically collected differently, resulting in non-random assignment to conditions for the overall sample. Future research should try to control the time frames in which data is collected to avoid any history effects.

Measurement Issues

As discussed throughout the paper, there are many facial features that could be taken into consideration and operationalized in determining attractiveness. In my study, I chose to use the distance from the 36% golden ratio regarding the length of the face to the exclusion of other characteristics. Future research should examine other measures of physical appearance to determine if there are differential effects based on the measures chosen. The measures used in this study boasted fairly high reliabilities, but there might have been some common method variance since the focus of the study was on the protégé perspective in terms of the mentoring they received. As stated earlier, the finding of similar pattern of means when comparing opposite-gender dyads and same-gender dyads across the picture condition suggests that protégés wrote their profiles consistently with how they looked regardless of whether or not they were seen. Future studies using this sample should objectively code the protégés' profiles independent of the picture condition to determine whether they do indeed write their profiles differently.

Conclusion

In conclusion, physical appearance is one of the foremost characteristic that people note when meeting someone else for the first time. However, there are a variety of moods, attributes and settings that may impact and bias people's interpretations of others' attractiveness and subsequently affect their perceptions towards others and more distally, their behavior. In a captivating study examining the relationship between attractiveness and different facial features configurations, Pallet and colleagues (2010) examined the effect of manipulating the spatial

distances of facial features on how attractive they were perceived. They discovered that faces that possessed a 36% length ratio (the "golden ratio") when comparing the eye to lips distance to the full length of the head were the faces rated as most attractive. The present study sought out to examine the extent to which objective facial measurements of protégés affected mentors' perceived similarity as well as subsequent levels of mentoring received in the context of a formal online peer mentoring program between college senior-level mentors and freshmen-level protégés. While there was no support for the effect of objective facial measurements and similarity in opposite-gender dyads, it was found that those with moderate distances from the ratio were perceived as more similar pre-chat within same-gender dyads. Those moderately distant from the golden ratio also received the greatest mentoring in same-gender dyads, whereas those that were closest to the golden ratio received the greatest mentoring in opposite-gender dyads. Second, I wished to examine the effect of providing mentors with a picture of their protégé and how that differed amongst same- and opposite-gender dyads. Providing mentors with a picture of their protégé did not have the expected interaction effects with facial measurements and gender composition to predict mentors' perceptions of their protégé. Third, I examined the relationship between facial measurements and how it pertained to protégé proactivity and the subsequent mentoring given. Results indicated an interesting relationship with proactivity depending on the picture condition; those that were closest to the ratio were more proactive in the picture condition while those that were farthest from it were more proactive in the non-picture condition. Thus, mentors in the picture condition seem to have behaved in a way toward protégés closest to the ratio that led them to display more proactive behaviors. On the other hand, protégés farthest from the ratio may have been penalized by

mentors in the picture condition and showed greater proactivity when not seen, in line with previous research. As expected, higher levels of protégé proactivity were associated with higher levels of mentoring given. Lastly, the relationship between mentoring given was compared to the benefits and fulfillment gleaned by protégés. Protégés that received greater amounts of mentoring were found their mentors to be more instrumental in reducing stress, and had higher levels of self-efficacy and relationship fulfillment. It seems then that what-is-beautiful-is-good is more robust in opposite-gender relationships whereas the beauty-is-beastly effect applies in same-gender dyads, and lastly the lack of beauty can have rather beastly effects.

APPENDIX A: EXAMPLE OF MENTOR/PROTÉGÉ PROFILES

Profile Information

First Name, Last Name Initial:	
Age:	
Gender:	
Ethnicity:	
Class Standing:	
Major(s):	

Availability	✓ Monday: _____ ✓ Tuesday: _____ ✓ Wednesday: _____ ✓ Thursday: _____ ✓ Friday: _____ ✓ Saturday: _____ ✓ Sunday: _____
Three personality traits that best describe me	✓ 1._____ ✓ 2. _____ ✓ 3. _____
What I see myself doing 5 years after I graduate	
Activities I enjoy in my spare time	

APPENDIX B: DEMOGRAPHICS

Demographics Form

Please answer the questions about yourself and your parents/guardians to the best of your knowledge. If you do not know the answer to the question or the question does not apply to you, please write "N/A" to indicate it is not applicable.

`

1. **How old are you? _____**
2. **What is your sex? (circle one)**
   a. **Male**
   b. **Female**
3. **What is your marital status?**
   a. **Single** d. **Divorced**
   b. **Married** e. **Widowed**
   c. **Separated** f. **Domestic Partnership**
4. **How many children do you have? _____**
5. **What is your major(s)? _____**
6. **What is your minor(s)? _____**
7. **If you have any other degrees, please list them: _____**
8. **How many credit hours are you enrolled in this semester? _____**
9. **What is your year in school? (freshman, sophomore, junior, senior)?**
   _____
10. **What is your employment status? (not employed, self-employed, student, employed full-time, employed part-time)_____**
11. **What is your UCF GPA?**
12. **If you took the ACT, what was your score? _____**
13. **If you took the SAT, what was your score? _____**
    a. Critical reading? _____
    b. Mathematics? _____
    c. Writing? _____
14. **What is your primary language? _____**
15. **If you are fluent in any other languages, please list them here.**
    _____
16. **What is your race or ethnic background? (check "yes" or "no" next to each race or ethnic group; if you choose "Other" as your response, please specify your race or ethnic group)**

Yes	**No**	
□	□	White (Non-Hispanic)
□	□	Black or African American (Non-Hispanic)
□	□	Asian
□	□	American Indian or Alaska Native
□	□	Native Hawaiian or Other Pacific Islander
□	□	Hispanic or Latino
□	□	Other: (Specify) _____

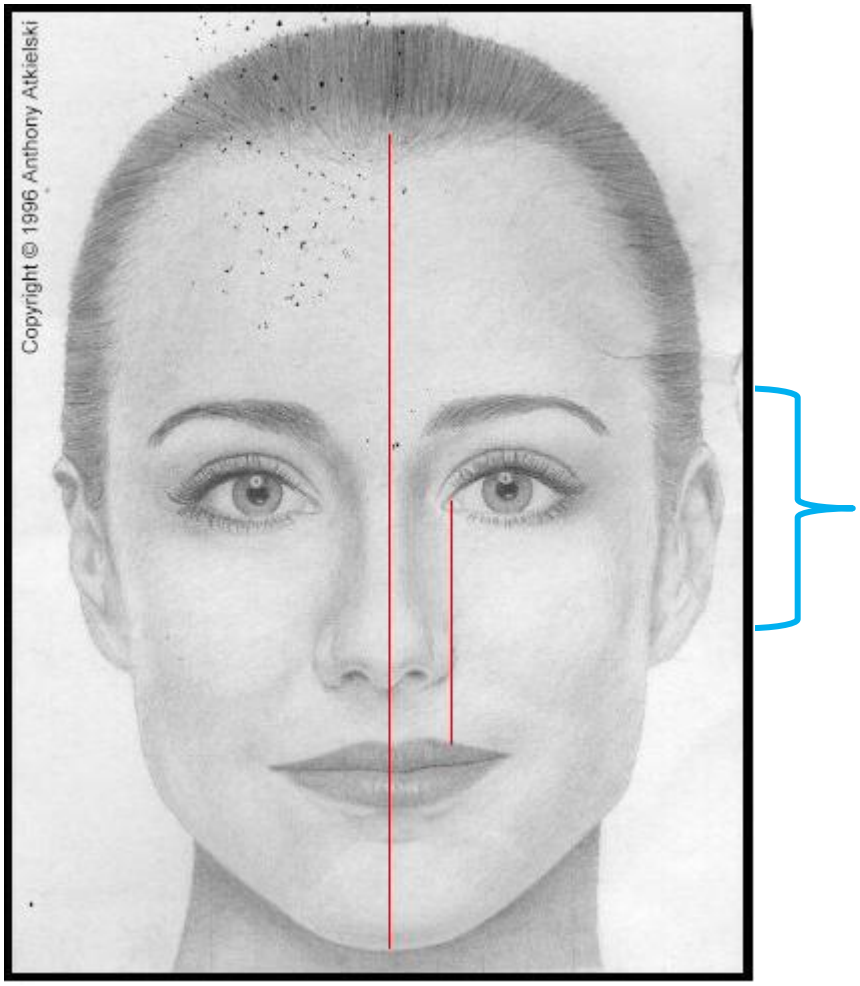
17. If you chose more than one race or ethnic group in the previous question, which one do you most identify with?

a. White (Non-Hispanic)
b. Black or African American (Non-Hispanic)
c. Asian
d. American Indian or Alaska Native
e. Native Hawaiian or Other Pacific Islander
f. Hispanic or Latino
g. Other: (specify)_____

18. Are you the first one in your immediate family to attend college? Yes (Y); No (N)
19. What is the highest education level of your MOTHER? _____
20. What is the highest education level of your FATHER? _____
21. How long have you been using the Internet (in years)? _____
22. How many hours per day do you spend online? _____
23. Do you use a Mac or a PC? _____
24. What is your height (in feet and inches)?
25. How would you describe your weight? (1 =very underweight; 7 =very overweight)
26. How health conscious would you say you are? (1 =much less than average; 7 =much more than average)
27. How intelligent would you say you are? (1 =much less intelligent than average; 7 =much more intelligent than average)
28. How outgoing would you say you are? (1 =not outgoing at all; 7 =very outgoing)
29. How friendly would you say you are? (1 =not friendly at all; 7 =very friendly)
30. How humorous would you say you are? (1 =not humorous at all; 7 =very humorous)
31. How much fun do you think you are to spend time with? (1 =not fun at all; 7 =very fun)
32. How easy to get along with would you say you are? (1 =not easy at all; 7 =very easy)
33. How would you describe the household you grew up in? (1 =very low income; 7 =very high income)
34. How likable would you say you are? (1 =not likable at all; 7 =very likable)
35. What are 5 words that you feel best describe you? (Please separate each answer by a comma)

APPENDIX C: FACIAL MEASUREMENTS AND THE GOLDEN RATIO

Facial Measurements and the Golden Ratio
Pallet, Link and Lee (2010)



APPENDIX D: PROTÉGÉ EXPECTATIONS OF RECEIVING MENTORING

Protégé Expectations of Receiving Mentoring
(Kendall, 2007)

Please indicate on the scale from 1-7 the extent to which you agree with the following statements.

	Very Slight Extent					Very Large Extent
1. I expect my mentor to reduce unnecessary risks that could threaten the possibility of me graduating or making good grades.	1	2	3	4	5	6
2. I hope that my mentor reduces unnecessary risks that could threaten the possibility of me graduating or making good grades.	1	2	3	4	5	6
3. I expect my mentor to help me review assignments or meet deadlines that otherwise would be difficult to complete.	1	2	3	4	5	6
4. I hope that my mentor helps me review assignments or meet deadlines that otherwise would be difficult to complete.	1	2	3	4	5	6
5. I expect my mentor to help me meet other students.	1	2	3	4	5	6
6. I hope that my mentor helps me meet other students.	1	2	3	4	5	6
7. I expect my mentor to give me ideas for increasing contact with administrators and faculty members.	1	2	3	4	5	6
8. I hope that my mentor gives me ideas for increasing contact with administrators and faculty members.	1	2	3	4	5	6
9. I expect my mentor to give me ideas for activities that will prepare them for an internship or job.	1	2	3	4	5	6

10. I hope that my mentor gives me ideas for activities that will prepare them for an internship or job.	1	2	3	4	5	6
11. I expect my mentor to give me ideas for activities that present opportunities to learn new skills.	1	2	3	4	5	6
12. I hope that my mentor gives me ideas for activities that present opportunities to learn new skills.	1	2	3	4	5	6
13. I expect my mentor to give me practical tips on how to accomplish academic objectives.	1	2	3	4	5	6
14. I hope that my mentor gives me practical tips on how to accomplish academic objectives.	1	2	3	4	5	6
15. I expect my mentor to introduce me to others who can provide me with academic opportunities.	1	2	3	4	5	6
16. I hope that my mentor introduces me to others who can provide me with academic opportunities.	1	2	3	4	5	6
17. I expect my mentor to help me develop interpersonal, communication, leadership, or team skills through feedback.	1	2	3	4	5	6
18. I hope that my mentor helps me to develop interpersonal, communication, leadership, or team skills through feedback.	1	2	3	4	5	6
19. I expect my mentor to help me develop study skills.	1	2	3	4	5	6
20. I hope my mentor helps me develop study skills.	1	2	3	4	5	6
21. I expect my mentor to recommend me to faculty, staff, employees, etc. for desired opportunities. I expect to recommend my protégés to faculty, staff, employees, etc. for desired opportunities.	1	2	3	4	5	6
22. I hope my mentor recommends me to faculty,	1	2	3	4	5	6

staff, employees, etc. for desired opportunities.

APPENDIX E: PERCEIVED SIMILARITY

Perceived Similarity

(Kendall, 2007; Smith-Jentsch et al., 2007)

Please indicate on the scale from 1-6 your level of agreement or disagreement with the following statements.

	Strongly Disagree					Strongly Agree
1. My mentor/protégé and I view things in much the same way.	1	2	3	4	5	6
2. My mentor/protégé and I are similar in terms of our outlook, perspectives, and values.	1	2	3	4	5	6
3. My mentor/protégé and I are alike in a number of areas.	1	2	3	4	5	6
4. My mentor/protégé and I think alike in terms of coming up with similar solutions to problems.	1	2	3	4	5	6
5. My mentor/protégé and I analyze problems in a similar way.	1	2	3	4	5	6

APPENDIX F: PSYCHOSOCIAL SUPPORT FUNCTIONS

Psychosocial Support Functions

(Allen, McManus, & Russell, 1999; Smith-Jenstch et al., 2007)

Please indicate on the scale from 1-6 the extent to which the following statements describe the relationship you had with your protégé.

	Very Slight Extent					Very Large Extent
1. My mentor shared the history of his/her academic career with me.	1	2	3	4	5	6
2. My mentor encouraged me to prepare for academic advancement.	1	2	3	4	5	6
3. My mentor encouraged me to try new ways of behaving in school.	1	2	3	4	5	6
4. My mentor demonstrated good listening skills in our conversations.	1	2	3	4	5	6
5. My mentor discussed my questions and concerns regarding feelings of competence.	1	2	3	4	5	6
6. My mentor discussed my questions and concerns regarding commitment to academic advancement.	1	2	3	4	5	6
7. My mentor discussed my questions and concerns regarding relationships with peers.	1	2	3	4	5	6
8. My mentor discussed my questions and concerns regarding relationships with faculty.	1	2	3	4	5	6
9. My mentor discussed my questions and concerns regarding work/family conflicts.	1	2	3	4	5	6
10. My mentor shared personal experiences as a different perspective to my problems.	1	2	3	4	5	6

11. My mentor encouraged me to talk openly about anxiety and fears that detract from my school work.	1	2	3	4	5	6
12. My mentor conveyed empathy for the concerns and feelings I discussed with him/her.	1	2	3	4	5	6
13. My mentor kept my feelings and doubts in strict confidence.	1	2	3	4	5	6
14. My mentor conveyed feelings of respect for me as an individual.	1	2	3	4	5	6

APPENDIX G: ACADEMIC CAREER DEVELOPMENT FUNCTIONS

Academic Career Development Functions

(Allen, McManus, & Russell, 1999; Kendall, 2007; Smith-Jenstch et al., 2007)

Please indicate on the scale from 1-6 the extent to which the following statements describe the relationship you had with your mentor (protégé).

	Very Slight Extent					Very Large Extent
1. My mentor reduced unnecessary risks that could threaten the possibility that I would advance through my program of study.	1	2	3	4	5	6
2. My mentor helped me review assignments/tasks or meet deadlines that otherwise would have been difficult to complete.	1	2	3	4	5	6
3. My mentor offered to help me meet with other students.	1	2	3	4	5	6
4. My mentor gave me ideas for increasing contact with school administrators and faculty.	1	2	3	4	5	6
5. My mentor gave me ideas for activities to prepare me for an internship or job.	1	2	3	4	5	6
6. My mentor gave me ideas for activities that will present opportunities for me to learn new skills.	1	2	3	4	5	6
7. My mentor provided me with practical tips on how to accomplish academic objectives.	1	2	3	4	5	6
8. My mentor offered to introduce me to others who can provide me with academic opportunities.	1	2	3	4	5	6

9. My mentor helped me develop interpersonal communication, leadership, or team skills through feedback.	1	2	3	4	5	6
10. My mentor helped me to develop study skills.	1	2	3	4	5	6
11. My mentor offered to recommend to faculty, staff, employees, etc., for desired opportunities.	1	2	3	4	5	6

APPENDIX H: PROTÉGÉ PROACTIVITY EXAMPLES

Examples of Protégé Proactivity from Pilot Studies

Example #1:

Mentor: I'm not sure what the requirements are for a minor but I'll it up real quick if you would like me to suggest some classes

Telemachus: I have the requirements in a booklet at home, but it'd be awesome to know what profs are good *(coded as career development).*

Example #2:

Mentor: Most people take physio psych and I really enjoyed it with Professor X. I would recommend him.

Telemachus: Okay.

Telemachus: Do you know if Professor Y teaches physio psych too? *(coded as career development)*

Example #3:

Mentor: Ok, I'm just trying to figure out where you want to go with this because depending on what you plan on doing, you may need to start getting involved on campus and getting experience in the field.

Telemachus: I'd love to get experience but I'm not sure how and where *(coded as career development)*

Mentor: What type of experience?

Telemachus: Anything really.

Telemachus: I do have some pressing issues on hand though

Telemachus: Namely financially *(coded as career development)*

Mentor: Ok then we can talk about that instead… leave this till later.

Example # 4:

Telemachus: I'm starting to get used to campus life and my roommates.

Mentor: So does that mean you will not have any need for me your super mentor? With all this training under your belt you should be well equipped for UCF

Telemachus: I can still use all the help I can get *(coded as PS)*

Example #5:

Mentor: I know they have a dental club, unaware of the details but u should check it out, maybe u could do job shadowing or something to find out if that what u really want to do.

Telemachus: But I still might join.

Mentor: Ok… good start.

Mentor: So are there any clubs or organizations that you would suggest me joining? (*coded as PS)*

Example # 6:

Telemachus: Does the bookstore hire work-study people? *(coded as career development)*

Mentor: Ya

APPENDIX I: MENTOR-RELATED STRESS REDUCTION

Mentor-Related Stress Reduction
(Allen, McManus, & Russell, 1999)

Please indicate on the scale from 1-6 your level of agreement or disagreement with the following statements.

	Strongly Disagree						Strongly Agree
1. Having a mentor has really helped to reduce my school tension.		1	2	3	4	5	6
2. My mentor has helped me better cope with stress.		1	2	3	4	5	6

APPENDIX J: PROTÉGÉ SELF-EFFICACY

Protégé Self-Efficacy

(Solberg et al., 1993)

How confident are you that you could successfully complete the following tasks?

	Not at all Confident					Extremely Confident
1. Research a term paper.	1	2	3	4	5	6
2. Write course papers	1	2	3	4	5	6
3. Do well on your exams.	1	2	3	4	5	6
4. Take good class notes.	1	2	3	4	5	6
5.						
6. Keep up to date with your schoolwork.	1	2	3	4	5	6
7. Manage time effectively.	1	2	3	4	5	6
8. Understand your textbooks.	1	2	3	4	5	6
9. Participate in class discussions.	1	2	3	4	5	6
10. Ask a question in class.	1	2	3	4	5	6
11. Get a date when you want one.	1	2	3	4	5	6
12. Talk to your professors.	1	2	3	4	5	6
13. Talk to university staff.	1	2	3	4	5	6
14. Ask a professor a question.	1	2	3	4	5	6
15. Make new friends at college.	1	2	3	4	5	6
16. Join a student organization.	1	2	3	4	5	6

APPENDIX K: PROTÉGÉ RELATIONSHIP FULFILLMENT

Protégé Relationship Fulfillment

(Kendall, 2007)

Please indicate on the scale from 1-6 your level of agreement or disagreement with the following statements.

	Strongly Disagree					Strongly Agree
1. The mentoring relationship between my mentor and I was very effective.	1	2	3	4	5	6
2. My mentor effectively utilized me as a protégé.	1	2	3	4	5	6
3. My mentor and I enjoyed a high-quality relationship.	1	2	3	4	5	6
4. Both my mentor and I benefited from the mentoring relationship.	1	2	3	4	5	6
5. I was extremely satisfied with my mentor.	1	2	3	4	5	6
6. I am satisfied with the relationship that developed between my mentor and myself.	1	2	3	4	5	6

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