

AN INVESTIGATION OF FORMAL MENTORING RELATIONSHIPS
AND PROGRAMS: A META-ANALYSIS

by

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A dissertation submitted to the Graduate Faculty in Business in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

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Abstract

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by

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Because of the positive outcomes for both the individuals and the organizations that are being attributed to mentoring, organizations have begun to institute formal mentoring programs in the hopes of generating positive results similar to those obtained in informal mentoring relationships. Since only a relatively few mentoring relationships are formed naturally, organizations hope to spread the wealth by assisting in the formation of these developmental relationships. As a result, the use of formal mentoring programs within organizations has increased.

The purpose of this study was to gain a greater understanding of formal mentoring relationships and formal mentoring programs. The widespread and continued use of formal mentoring programs indicated a need to synthesize the current state of the research on formal mentoring relationships and programs. This study integrated the existing body of research in the area of formal mentoring relationships and programs using meta-analytic procedures.

First, it was useful to contrast formal mentoring with informal mentoring to note any differences between these two types of relationships. Second, the formal mentoring relationship was highlighted, focusing on the association between the quality of the formal mentoring relationship and the outcomes obtained as a result. Lastly, the

characteristics of the formal mentoring program were investigated to determine if certain characteristics are associated with more positive outcomes.

Overall, the results indicated that informal mentoring relationships are more effective than formal mentoring relationships in terms of the amount of mentoring functions provided and the amount of the mentoring outcomes achieved. However, the effect sizes were small with respect to the outcomes achieved. Additionally, generally strong support was found for a positive relationship between mentoring functions provided and mentoring outcomes obtained in formal mentoring relationships. Relationships were found to be in the hypothesized direction for matching, frequency of interaction and duration of the program but were mixed for the other program characteristics regarding the voluntary or involuntary participation, program purpose, and training. The findings of this study indicate where additional research is needed and should be of practical use to organizational decision makers enabling them to design and implement more effective mentoring programs.

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Chapter 1

Introduction

Organization of this Dissertation

This dissertation is divided into five chapters. This first chapter begins with an explication of terms used throughout this paper. An overview of mentoring, a discussion of the need for this research, and the proposal of specific research questions follow this. In Chapter 2, a review the relevant literature with respect to mentoring is presented and the specific hypotheses to be tested are proposed. Chapter 3 contains the meta-analytic procedures used in conducting this study. Chapter 4 presents the results of the study. Chapter 5 summarizes the major findings, discusses the limitations of the study, suggests directions for future research, and discusses the implications for practice.

Definition of Terms

In this subsection, I define the most important terms used throughout this paper. The primary terms used in this study may have slightly varying meanings within different contexts and within different disciplines. The following definitions clarify the use of terms central to this study. Detailed discussions of these terms can be found in the next chapter.

Mentoring: Mentoring is a one-on-one facilitative learning relationship. Traditional mentoring relationships are those that involve a more experienced person and a less experienced person whereby the more experienced person assists in the personal and/or professional development of the less experienced person (Wanberg, Welsh, & Hezlett, 2003). In this study, both individuals involved in the mentoring relationship are adults.

Mentor refers to the more experienced, senior person who guides the mentoring relationship.

Protégé refers to the less experienced, junior person in the mentoring relationship. The protégé is sometimes referred to as the mentoree or the mentee.

Mentoring Functions: Multiple studies have identified a common set of behaviors most likely to occur between a mentor and a protégé during the course of a mentoring relationship. They have been classified as (1) career-related and (2) psychosocial functions. Chapter 2 describes the mentoring functions in more detail and outlines relevant research from the literature.

Informal Mentoring refers to a mentoring relationship that forms naturally between the mentor or protégé without any involvement from the organization. The individuals involved in these relationships may be from the same organization or different organizations.

Formal Mentoring refers to mentoring that is part of a formal mentoring program where both individuals are usually from the same organization. These mentoring relationships are formed with assistance from the organization.

Overview of Mentoring

The literature on mentoring began to burgeon in the 1970s as this practice gained notoriety in the business sector. Mentoring relationships exist in a variety of fields to include: business, the arts, politics, academia, athletics (Broadbridge, 1999), and in many industries such as banking, airlines, government, military, health, pharmaceutical, construction, fashion, lodging/travel, and entertainment (Givens-Skeaton, Baetz, &

D'Abate, 2003). Doctors, lawyers and accountants have mentors. Mentoring relationships have been used to instill confidence and transfer skills to unemployed people with the intent of assisting the unemployed in rejoining the workforce (Overell, 1996) and youth mentoring programs targeted at at-risk children are flourishing (Rhodes, Bogat, Roffman, Edelman, & Galasso, 2002). This widespread use of mentoring has generated interest in the inner workings of these types of relationships.

The extant research on mentoring indicates the relationship can result in benefits both for the individuals involved in the mentoring relationship and for the organizations in which mentoring occurs. For protégés, potential benefits include more promotions, higher incomes (Dreher & Ash, 1990; Whitely, Dougherty, & Dreher, 1991), greater career satisfaction (Fagenson, 1989; Turban & Dougherty, 1994), and career mobility (Scandura, 1992). The mentoring relationship may provide the mentor an additional source of information within the organization (Wright & Werther, 1991) and recognition and respect from peers (Clutterbuck, 1991) and superiors (Kram, 1983). The relationship can also increase the mentor's job satisfaction (Clutterbuck, 1991; Ragins and Scandura, 1994), rejuvenating him and leading him to higher accomplishment (Wright & Werther, 1991) and creative and productive action (Kram, 1983). The organization benefits through the increased organizational commitment of its members which, in turn, can result in reduced turnover (Scandura & Viator, 1994; Broadbridge, 1999). Other benefits include an increase in profitability, an improvement in client service, and an improvement in risk management since junior organizational members can discuss problems and issues with their mentors. Additionally, mentoring can result in better socialization whereby new member 'learn the ropes' faster and more effectively (Zey,

1991; Gray, 1989; Ostroff & Koslowski, 1993; Wilson & Elman, 1990). Mentoring may result in improved communications between various levels of the organization (Zey, 1991; Clutterbuck, 1991) and can provide leadership development through socialization to power and aid in succession management.

Early mentoring research focused on informal relationships - those that formed naturally between mentor and protégé. Informal mentoring relationships are spontaneous relationships that occur without involvement from the organization (Chao, Walz, & Gardner, 1992). These informal relationships are often described as intense and deeply personal (Kram, 1985) and even loving (Levinson et al., 1978). In these relationships it may be either the mentor or protégé who initiates the relationship. The protégé may approach the potential mentor if there is something he thinks he can learn from that individual or if he has seen that individual obtain good results in the past. The mentor may approach the potential protégé because he sees something in that person that reminds them of their earlier self (Murray, 2001). Providing guidance and support to the protégé is one way for the mentor to carry on. Using the term "generativity" to describe the sense of immortality derived from the internal satisfaction received from passing their skills and wisdom on to their protégés, Erickson (1963) theorized that people need to gain generativity to progress to the next life stage and avoid stagnation in life development.

Because of the positive outcomes for both the individual and the organization that are attributed to mentoring, organizations have begun to institute formal mentoring programs in the hopes of generating results similar to those obtained in informal mentoring relationships. Since only a relatively few mentoring relationships are formed naturally, organizations hope to "spread the wealth" by assisting in the formation of these

developmental relationships. Formal mentoring relationships are managed and sanctioned by the organization and generally develop with assistance in the form of matching mentors and protégés (Ragins, Cotton, & Miller, 2000) and in program administration. By making these relationships more broad-based, predictable and orchestrated, organizations are attempting to gain greater benefits from mentoring over a greater number of their employees (Fogarty & Dirsmith, 2001).

While gaining the benefits evident in informal mentoring relationships seems to be the primary reason organizations start formal mentoring programs, there are several other reasons organizations employ mentoring programs. Firms recognize that mentoring provides a source of learning for both protégés and mentors. Formal training programs account for only a small percentage of organizational learning (Tannenbaum, 1997). The U.S. Department of Labor found that classroom training followed by coaching or mentoring is considerably more effective than classroom training alone (Benabou & Benabou, 1999). Mentoring, therefore, can act as a complement to formal training in an organization's overall developmental program. The development of its human capital may provide a source of competitive advantage for an organization (Barney, 1991). Additionally, some organizations recognize a lack of diversity in their top management ranks. Formal mentoring programs are sometimes instituted to promote the career development of women and minorities.

Because of the increasing use of formal mentoring programs within organizations, this paper presents an important research topic. Are formal mentoring programs accomplishing their intended purpose? How do the mentoring relationships formed within formal programs compare to those that are established informally? Are all formal

mentoring programs the same or are some more effective than others? This study used meta-analytic procedures to synthesize the existing empirical research to attempt to answer these questions.

In the remainder of this chapter, I first state the general purpose of this study, identifying why this is an important topic. Second, I briefly discuss the previous research that led me to this topic. Next, I address the broad objectives of this research, noting the theoretical and practical contributions.

Research Purpose

The number of formal mentoring programs in organizations is clearly on the rise. Formal mentoring has been identified as an emerging trend in the new millennium (Tyler, 1998). As many as one in three large companies has experimented with formal mentoring programs (Bragg, 1989; Clutterbuck, 1991). *Chief Executive* magazine reported that in their 2003 Top 20 Companies for Leaders, 95% of those on the list offer mentoring programs as compared to only 35% of the other companies (Spiro, 2003). A 1996 survey of North American companies reported that the percentage of businesses planning to offer mentoring programs would double between 1995 and 1996 from 17% to 36% (Jossi, 1997). The American Society for Training and Development's recent 2004 State of the Industry Report shows that almost 70% of the 'best' companies have a mentoring program indicating their commitment to learning and the value they place in these types of programs (Sugrue & Kim, 2004).

And it is not just U.S. companies using formal mentoring programs. In a survey of 700 Canadian companies, 66% reported using mentoring (Carr, 1999). Mentoring is

also popular in Western Europe. In an analysis of mentoring in business organizations, Hansford, Tennent, and Ehrich (2002) uncovered 151 studies conducted between 1986 and 2000. While 70% of the studies had been conducted in the United States, the following countries/regions accounted for the remainder: United Kingdom (13.9%), Canada (3.3%), Australia (2.6%), Asia (2.6%), South Africa (1.3%), Saudi Arabia (0.7%), and India (0.7%). The smaller number of studies conducted outside the United States is likely due in part to the databases used in the authors' search.

Formal mentoring programs differ on several characteristics: (1) how the mentor-protégé dyad is formed, (2) the stated purpose of the program, (3) the voluntary versus involuntary nature of the program, (4) the preparation and training for the mentoring relationship, (5) the frequency of interaction between the mentor and protégé, and (6) the duration of the program. Each of these will be investigated in this meta-analysis along with an index of theoretically-based best practices. It is to be expected that some characteristics may be significantly related to the outcomes while others are not. However, this does not necessarily mean that any one characteristic is unimportant. It may be that results are obtained through a constellation of characteristics that synergistically build upon one another (DuBois, Holloway, Valentine, & Cooper, 2002).

The objective of this review was to synthesize the extant empirical evidence (both published and unpublished) on formal mentoring relationships. Specifically, this study objectively assessed whether informal mentoring relationships are more effective than formal mentoring relationships. Both the popular and empirical literature on mentoring claim that informal mentoring relationships result in greater outcomes than formal mentoring relationships, but much of what is written appears to be based on speculation

and anecdotal evidence. This study began by cumulating the results of studies that compare formal and informal mentoring relationships by looking both at the mentoring functions provided (career and psychosocial) and the outcomes achieved (career, personal and organizational) to determine if this generally held belief about the superiority of informal mentoring relationships is supported by the research.

Second, this study investigated the relationship between the quality of the formal mentoring relationship and the outcomes of the formal mentoring program. Further, this study attempted to determine if formal mentoring programs are more positively associated with certain types of outcomes rather than others. The third objective of this review focused on the program characteristics of formal mentoring programs and their relationship to the outcomes obtained. Specifically the program characteristics investigated include the amount of involvement of the mentor and protégé in the formation of the mentoring relationship, the voluntary/involuntary nature of the program, the stated purpose of the program, the use of orientation and training in preparation for participation in the program, the frequency of interaction, and the length of the program. These program characteristics were chosen for investigation because they are those most often mentioned in the popular literature and those most often studied in the empirical literature. The relationship between program characteristics and outcomes (career, personal, and organizational) was examined to see if program characteristics have a differential impact on what kinds of outcomes are to be expected from formal mentoring programs. The primary goal of the last objective was to help identify promising directions for enhancing program effectiveness.

Need for This Research and Potential Contributions

In an early narrative review, Merriam (1983) listed four criticisms of the mentoring literature at that point in time. First, she stated that mentoring was not clearly conceptualized. She felt that different researchers used varying definitions of mentoring with some taking a broader view than others. Her second criticism dealt with the unsophisticated research design of mentoring studies. Much of the published research at that time consisted of testimonials or opinions on the benefits of mentoring as well as articles that told one how to be a mentor or how to find one. Third, Merriam noted that researchers focused on the positive effects of mentoring but ignored the potential challenges in a mentoring relationship. Her fourth criticism dealt specifically with formal mentoring programs and the lack of evaluation of such programs.

Luckily, researchers have dealt with some of Merriam's concerns. Most notable was Kram who set out a model of the mentoring relationship. As Kram stated in her book, the qualitative studies on mentoring "present an intricate and realistic view of mentoring, to delineate its potential benefits and limitations...in work settings" (1985, p. vii). These early qualitative studies helped define the mentoring relationship and have resulted in the delineation of two mentoring functions – those that are career-related and those that provide psychosocial support. These functions will be described in more detail in Chapter 2.

Fortunately, some progress has been made in dealing with Merriam's (1983) fourth criticism concerning the lack of evaluation of formal mentoring programs. The body of research on formal mentoring programs continues to grow. Many of these studies have been qualitative in nature but quantitative studies are being undertaken as

well. It is necessary to quantitatively summarize what is known about formal mentoring relationships and formal mentoring programs in order to advance future theory and research on this topic. Several recent meta-analyses have added to our understanding of mentoring relationships. Grant's (2003) meta-analysis looked specifically at mentoring programs in an educational setting and their relationship to new teacher retention. Her findings indicated that the presence of formal mentoring programs had a positive statistically significant impact on teacher retention. Further, it was the quality of these programs that influenced their impact on teacher retention rather than just the presence of a mentor.

Hezlett's (2003) meta-analysis looked at who received mentoring, focusing on demographic characteristics, career history and individual differences. Her findings showed that married individuals who scored high on masculinity measures were more likely to have mentors. In contrast, gender, age, organizational tenure, and femininity were not determinants of whether or not an individual had a mentor. Job involvement and core self-evaluations were found to have robust relationships with mentoring functions received. This indicates that individuals who are more engaged at work and have favorable self-perceptions are more often the recipients of mentoring. In Hezlett's review, no distinctions were made between formal and informal mentoring relationships.

Allen et al. (2004) investigated the relationship between the two mentoring functions (career-related and psychosocial) and the outcomes realized from the mentoring relationship. They hypothesized there would be a stronger positive relationship between (1) career-related functions and objective outcomes, and (2) psychosocial functions and subjective outcomes. Here, objective outcomes were considered to be those of a more

concrete nature such as compensation and promotions, while subjective outcomes were less tangible and more affective such as career commitment and job satisfaction. While the first hypothesis was supported, the second received minimal support. Both career-related and psychosocial functions were related to subjective outcomes although psychosocial functions were more strongly related to satisfaction with the mentor than were career-related functions. The researchers concluded that career-related mentoring might provide informational and instrumental social support that can affect an individual's career and job satisfaction. Further, they confirmed the generally accepted notion that more benefits will accrue to those involved in mentoring relationships than to those who are not. This meta-analysis made no distinction between formal and informal mentoring relationships, but the authors suggest that the nature of the relationship (formal versus informal) may be a moderating factor and suggested this as an avenue for future research. Other than Grant's (2003) meta-analysis that focused solely on the education sector, no comprehensive systematic reviews of formal mentoring relationships and formal mentoring programs have been conducted. Additionally, no systematic review has investigated the association between the program characteristics of formal mentoring programs and the outcomes achieved. This study was intended to fill that gap.

While there are many prescriptive "how-to" guides available on how to establish a formal mentoring program, few are based on research that focuses on what makes these programs successful (Gibb, 1999). Additionally, there is a large body of research that has been conducted on formal mentoring relationships and numerous evaluations of formal mentoring programs. These cover a wide variety of fields from business to education to religious organizations. The commercial purveyors of formal mentoring programs seem

to offer a one size fits all approach. By synthesizing the available research, it may be possible to determine if this is the correct approach toward formal mentoring programs.

The widespread and continued use of formal mentoring programs indicates a need to synthesize the current state of the research on these programs as well as to indicate directions for future research. This study integrated the existing body of research conducted in the area of formal mentoring programs. This produced a verifiable knowledge base which provided some research-based generalizations concerning the effectiveness of formal mentoring programs.

The findings of this research should be of practical use to organizational decision makers enabling them to design and implement more valuable mentoring programs. Practitioners within Human Resource Departments, tasked with providing and overseeing formal mentoring programs, may find some useful ideas on how to proceed as well.

Research Objectives

Initial research in the area of mentoring was primarily qualitative, looking at successful executives and how they became successful (Levinson et al, 1978; Zey, 1991; Kram, 1985). Quantitative research followed and focused on the outcomes of mentoring protégés (Mullen, 1994; Aryee, Chay, & Chew, 1996) and comparing the mentored with the unmentored. Many of these studies surveyed members of professional organizations or college alumni who were primarily white males. As the research progressed, findings indicated that mentoring might not be the same for men and women and studies began to investigate these differences as well. As formal mentoring programs began to proliferate, interest in studying these types of mentoring relationships has increased too. Again, the

focus was initially on the outcomes of the programs, but researchers have called for a more systematic understanding of the antecedents and consequences of mentoring relationships (Allen, Poteet, & Burroughs, 1997). A sufficient amount of empirical research now exists to investigate formal mentoring relationships and programs.

The general purpose of this study was to gain a greater understanding of formal mentoring relationships and programs. First, it was useful to contrast formal mentoring with informal mentoring to note any differences between these two types of relationships. While companies who initiate formal mentoring programs are attempting to assist in creating relationships similar to informal mentoring relationships, it should not be assumed that the artificial means used in these programs are able to exactly replicate these relationships. Therefore, it was helpful to determine how similar these two types of relationships are and if they result in similar outcomes. Next, formal mentoring relationships were highlighted, focusing on the association between the quality of the formal mentoring relationship and the outcomes obtained. Here, quality was conceptualized as the array of mentoring functions provided by the mentor to the protégé. The more mentoring functions provided, the higher the quality of the relationship. Lastly, the characteristics of the formal mentoring program were investigated to determine if certain characteristics led to more positive outcomes. The impact of a combination of program characteristics on the outcomes of the formal mentoring program were explored as well.

Specifically, the following three research questions were be investigated:

(1) Are formal mentoring relationships less effective in achieving desired outcomes than are informal mentoring relationships?

(2) Within formal mentoring relationships, what is the relationship between the number and type of mentoring functions provided by the mentor and the outcomes realized by the protégé? These outcomes will be categorized as career, personal, and organizational.

(3) What is the relationship between specific program characteristics and the career, personal and organizational outcomes within formal mentoring programs?

Chapter 2

Literature Review

The term 'mentor' has its origins in Greek mythology. Popular mentoring literature attributes the origin of the term to Homer, one of the ancient Greek storytellers. In his classic tale, *Odysseus*, Homer tells of the King of Ithaca who asked his friend Mentor to look after his son, Telemachus, while he fought the Trojan War. Mentor's role was to educate through encouragement and guidance (Armstrong, Allinson, & Hayes, 2002). In ancient Greece, a mentor was someone who was responsible for the physical, social, intellectual, and spiritual development of a younger person. Overseeing the development of another and providing wise guidance to the protégé are two features common to most definitions of a mentor.

Mentoring as a type of developmental relationship has been around for centuries, from the trade and craft guilds of the Middle Ages (Benabou & Benabou, 1999) to apprenticeship programs of the Industrial Revolution. Some early European universities, to include Oxford University, adopted a mentoring model where tutors (also known as Dons) acted as mentors. These tutors lived at the school with the students and oversaw their social, academic and personal development. The need for skilled workers during the industrial revolution led to the master-apprentice relationship where the focus of the relationship was more career-oriented. The master would assist the apprentice in the development of the skills necessary for a successful career. In North American society, apprentice relationships were formed with masters in both the arts (with artists, painters, dancers and actors) and in the trades (carpenters and silversmiths) (Carr, 1999). Over

time, the word ‘mentor’ has become synonymous with trusted advisor, friend, teacher and wise person (Klasen & Clutterbuck, 2002).

Theoretical interest in the mentoring relationship came about following the publication of several works in which the success of businessmen was attributed to their participation in a mentoring relationship (Levinson et al., 1978; Dalton, Thompson, & Price, 1977; Kanter, 1977). In *The Seasons of a Man’s Life*, Levinson et al. (1978) described the mentoring relationship as the most important relationship in young adulthood for men. *Harvard Business Review* published the results of a survey of 1,250 senior executives who had appeared in the “Who’s Who” section of the *Wall Street Journal*. Two-thirds of these executives claimed they had been mentored at some point in their career (Roche, 1979).

Most of the early studies on mentoring were qualitative in nature, outlining the roles of the mentor and protégé and the benefits obtained from such a relationship. Kram’s seminal book on mentoring (1985) was based on an in-depth qualitative study of 18 mentor-protégé dyads and provided one of the first comprehensive models of the mentoring relationship. This, as well as the consistently positive outcomes reportedly derived from the mentoring relationship, prompted researchers to begin a more systematic approach to their investigations of mentoring.

What is Mentoring?

There are various definitions of mentoring and one of the criticisms of the mentoring literature is that there is no consistent use of the term. Business organizations often frame their definitions of mentoring in terms of the career advancement opportunity

for the protégé. Educational organizations, however, tend to focus more on the personal learning aspect of mentoring. In professions, such as nursing, mentoring is stressed as a way of imparting the notion of service to others.

While there is not agreement among scholars or practitioners on one single definition of mentoring, most agree on two common features. Kram described mentoring as “a relationship between a younger adult and an older, more experienced adult that helps the younger individual learn to navigate in the adult world and the world of work” (1985, p. 2). Traditionally, mentors have been older than their protégés but this is not necessarily a requirement in today’s organizations. Rather, it is the greater experience of the mentor as compared to the protégé that is essential. The other essential characteristic of the mentoring relationship is that it is developmental in nature. The mentor teaches, guides, and supports the protégé in their pursuit of personal and/or professional development (Kram, 1985; Zey, 1991).

While specific definitions of mentoring vary, there is high consistency with respect to the general concept of mentoring. The concept of mentoring is normally understood to mean a traditional mentoring relationship in which there is a one-on-one relationship between a more experienced person and a less experienced person whereby the more experienced person assists in the personal and/or professional development of the less experienced person (Wanberg, Welsh, & Hezlett, 2003). Jacobi (1991) concluded that the following five elements are common to most conceptualizations of the mentoring relationship:

1. Mentor relationships are helping relationships designed to assist the protégé in achieving long-term broad goals.

2. Mentoring contains components related to both career and professional development and to psychological and emotional support.
3. Mentor relationships are reciprocal in that the mentor as well as the protégé benefit from the interaction.
4. Within the mentoring dyad, it is the mentor who has the greater professional experience, influence and achievement.
5. Mentor relationships are personal.

Mentoring is a type of developmental interaction as are coaching, action learning, and tutoring. All of these types of activities seek to develop an individual through their interaction with one or more other people. Mentoring differs from coaching in that mentoring generally has a more general focus on development. Coaching focuses on one specific developmental objective. Coaching is considered to be shorter term, while mentoring is a longer-term developmental relationship (D'Abate, Eddy, & Tannenbaum, 2003). Action learning involves a group of individuals who learn from each other while solving an organizational problem. Tutoring is a form of one-on-one teaching. Mentors may coach and tutor during the course of the mentoring relationship. Mentoring is a more flexible approach to development that incorporates and integrates these more limited approaches. It operates within a real life context, enabling protégés to apply what they learn. Further, the learning experience can be customized to the protégé if the mentor is aware of the protégé's needs (Klasen & Clutterbuck, 2002).

Types of Mentoring Relationships

Traditional mentoring relationships involve two people – the mentor and the protégé. Other forms of mentoring do exist. Group mentoring involves more than one mentor and more than one protégé and mentoring is conducted as a group activity. Here

protégés are exposed to more than one experienced person at the same time and are able to compare and contrast these mentors. Additional benefits for the protégés can be gained through interaction with their peers within this group relationship by providing an added social support network. Another form of mentoring that has recently emerged is peer mentoring. Here, both members of the dyad are at the same level within the organization. This type of mentoring relationship is markedly different in that the career functions generally associated with the mentoring relationship are not within the power of either member of the dyad (Ensher, Grant-Vallone, & Marelich, 2002). While peer mentors can provide support for each other, their lack of experience as compared to their partner limits this feature as well (Gray, 1988). Reverse mentoring, while it pairs one mentor with one protégé, is not done in the traditional sense. Instead the mentor is more junior to the protégé but has more expertise in an area such as information technology (Solomon, 2001). Reverse mentoring is often associated with the skill development of the protégé and not with his overall career advancement or the provision of psychosocial support beyond the targeted skill, making reverse mentoring a much more limited type of mentoring than more traditional types. Program characteristics, such as the length of the relationship or how participants are matched, may differ for these other types of mentoring relationships. For the purpose of this study, the focus is on the traditional mentoring relationship in which the focus of the developmental experience is on one protégé as opposed to several. A simple and inclusive definition of mentoring will be used. Mentoring is the process whereby a more experienced person helps a less experienced person develop in some capacity (Murray, 2001).

Mentoring Functions

Kram (1985) theorized that mentors perform two types of functions: career functions and psychosocial functions. Career functions operate at the organizational level while psychosocial functions operate at the interpersonal level. These functions are interrelated and research has shown they can synergistically build on one another, resulting in even greater outcomes being attained from a mentoring relationship (Chao, Walz, & Gardner, 1992).

Career functions are those aspects of the relationship that enhance one's learning the ropes of the organization, and preparing for advancement either within or outside the organization. Career functions include sponsorship, exposure and visibility, coaching, protection, and challenging assignments. A mentor provides feedback to the protégé. Feedback on performance is needed to build a sense of competence and confidence, and a relationship with a more experienced boss or colleague can satisfy concerns about competence and professional identity. Career support can expand one's set of skills or competencies (Kram, 1985; Whitely & Coetsier, 1993). Career functions help the less experienced person to establish a role in the organization that, in turn, can enhance their career progression (Kram, 1985).

Psychosocial functions deal with those aspects of a relationship that boost an individual's sense of competence, identity, and effectiveness in a professional role. Psychosocial functions include role modeling, acceptance and confirmation, counseling, and friendship. This type of assistance can bolster one's confidence and sense of self-efficacy (Kram, 1985; Fagenson, 1989). Unlike career functions, psychosocial functions do not depend on the position of the mentor within the organization or the amount of

influence the mentor has in the organization. Rather, psychosocial functions are associated with the emotional side of the relationship, and depend on the closeness of the interpersonal relationship between the mentor and protégé (Kram, 1985).

These two types of functions are similar to the key components identified in the literature on social support. Social support arises from those interpersonal relationships that help in preventing or reducing stress by providing one or more of the following types of support: (1) emotional support, (2) appraisal support, (3) informational support, and (4) instrumental support (House, 1981). Emotional support includes listening, showing concern, and providing reassurance of self-worth. Appraisal support includes feedback and confirmation. Informational support consists of providing advice, direction, and information. Instrumental support consists of providing tangible assistance in terms of time and other resources. Mentoring researchers have recognized the convergence of these functions in the mentoring realm with emotional and appraisal support being closely associated with psychosocial functions, while informational and instrumental support parallel the career functions. McManus and Russell (1997), in their examination of the theoretical nomological network of mentoring, cite several studies that demonstrate the reduction of stress and strain as a result of social support both through emotional and appraisal support (i.e., psychosocial) and informational and instrumental support (i.e., career-related). Rhodes, Contreras, and Mangelsdorf (1994) demonstrated a reduction in anxiety and depression and an increase in satisfaction with available social support in Latina adolescent mothers who had informal mentors. Allen, McManus, and Russell (1999) found that a formal peer mentoring program provided social support which improved the socialization of newcomers and reduced the amount of stress they

experienced. Higgins and Thomas (2001), in their study of the constellation of developmental relationships of lawyers, borrow from both the mentoring and social support literature when measuring the quality of developmental relationships.

Types of activities in which mentors engage include providing information on the mission and goals of the organization, tutoring the protégé on specific skills or behaviors, serving as a confidant in times of personal crisis for the protégé, assisting the protégé in mapping a career path, offering insight into the organization's philosophy of human resource development, conveying information on organizational policies and politics, acting as a sounding board for a protégé's ideas, sharing their wisdom to give the protégé a broader perspective and deeper understanding of topics covered by formal education, encouraging the protégé to accept challenging assignments, showcasing the protégé's talents, and introducing the protégé to important people within or outside the organization (Gray, 1988; Murray, 2001; Chao, Walz, & Gardner, 1992; Klasen & Clutterbuck, 2002).

One of the key tasks for the mentor is to serve as a role model. Through role modeling, the mentor demonstrates appropriate behavior and attitudes to the protégé. Research shows employees are more likely to imitate the behavior of a manager than a co-worker because of the status, experience, and prestige of those holding managerial positions (Manz & Sims, 1982). Research has been strongly supportive of the overall efficacy of training based on modeling principles. For example, in an experiment involving first-line supervisors, Burnaska (1976) showed the impact of a behavior-modeling program with respect to dealing with personnel issues such as discrimination complaints and insubordination. Those who received the training performed significantly better than those in the control group when evaluated on their handling of three different

scenarios. Moses & Ritchie (1976) provided support with their experiment at General Electric involving a behavior-modeling course on interpersonal relations for managers of professional employees. Managers who received the training performed better than the untrained managers in the control group even though the evaluation took place four months after the training occurred. Latham & Saari (1979) also used an experimental design to test the impact of behavior-modeling training designed for supervisors on how to interact effectively with their employees. Those in the experimental group who received the training scored significantly higher than those in the control group on a learning test administered six months after the training, and also demonstrated better performance as evidenced by their job ratings collected one year after the training. Social learning theory (Bandura, 1986) asserts that the protégé can learn through the observation of the mentor. Direct and observational learning may be used to acquire behavioral patterns and strengthen expectations regarding one's ability to perform tasks successfully. Vicarious learning is one major means by which individuals change their self-efficacy expectations.

Self-efficacy is similar to the notion of the expectancy link between effort and performance in the expectancy theory of employee motivation (Lawler, 1973). By watching a mentor's efforts leading to successful performance, a protégé's self-efficacy can be increased. The other type of expectancy that can be influenced by role models is outcome expectations. By observing the consequences of a model's behavior, a protégé is likely to gain information that will help to form outcome expectancies. This is similar in concept to Lawler's (1973) instrumentality link between performance and reward. Seeing a mentor's behavior lead to successful outcomes instills in the protégé the idea that

similar behavior on their part will also lead to positive outcomes. Organizational members can model both productive and unproductive behavior, but organizations encourage mentoring relationships, both formal and informal, to facilitate functional organizational behavior (Manz & Sims, 1982). The mentor, being a more experienced member of the organization, is logically someone who provides a model of appropriate behavior to the protégé.

Support for the existence of the two types of mentoring functions (career and psychosocial) has been demonstrated. Noe (1988a) developed a 21-item mentoring functions scale to assess the extent to which psychosocial and career functions were provided. His items were developed based on previous qualitative research (Burke, 1984; Kram, 1983, 1985; Kram & Isabella, 1985; Roche, 1979; Zey, 1991). Using factor analysis, Noe confirmed the existence of these two distinct mentoring functions. Olian, Giannantonio, and Carroll (1986) identified two dimensions that are conceptually similar to Kram's (1985) career and psychosocial functions. They categorized mentoring functions as either instrumental or intrinsic and found them to be distinct. The instrumental category included mentor behaviors that furthered the reputation of the protégé while the intrinsic category involved those behaviors that enhanced the quality, intensity, and depth of the mentor relationship. Scandura's (1992) 18-item Mentorship Scale identified three factors: career-related, psychosocial, and role modeling. Other evaluations (Ensher & Murphy, 1997; Tepper, Shaffer, & Tepper, 1996) have not confirmed that role modeling is a distinct factor from psychosocial support. The theoretical and empirical research demonstrates that career and psychosocial functions are the fundamental and distinct operationalizations of mentoring functions provided.

Both psychosocial and career assistance are necessary for personal and professional development. Kram's (1985) qualitative research found that higher quality mentoring relationships are characterized as those that provide the greater array of functions. The provision of both career and psychosocial functions are what make the mentoring relationship different from sponsorship or coaching which are more limited in nature. Based on her qualitative research, Kram concluded that the greater the degree of career development and psychosocial functions offered by the mentor, the stronger the interpersonal bond will be between the mentor and protégé. The result is a more indispensable relationship that is critical to the protégé's development while at the same time providing benefits to the mentor. While "quality" may not be the most appropriate term to use to describe mentoring relationships, it is the one most often used in the literature. For that reason, this study remained consistent with the existing literature. Higher quality mentoring relationships are those in which more mentoring functions are provided.

Mentoring Outcomes

As mentioned in the introduction, there are numerous benefits that have been attributed to the mentoring relationship. The benefits can accrue to the mentor, the protégé and to the organization. Benefits for the protégé can be extrinsic such as faster promotions and higher compensation (Dreher & Ash, 1990; Whitely, Dougherty, & Dreher, 1991) or intrinsic such as greater self-confidence and greater career satisfaction (Fagenson, 1989; Turban & Dougherty, 1994). A mentor may benefit by having an additional source of information within the organization (Wright & Werther, 1991), but

benefits for the mentor tend to be more intrinsic than extrinsic. These intrinsic benefits may include a sense of personal accomplishment for successfully assisting their protégé and greater job satisfaction (Clutterbuck, 1991; Ragins & Scandura, 1994). Benefits to the organization usually follow from the benefits to the mentor and protégé. For example, if the mentoring relationships result in greater job satisfaction, this may lead to greater organizational commitment and lower turnover for the organization (Scandura & Viator, 1994; Broadbridge, 1999). Rejuvenated mentors can result in more creativity and production (Kram, 1983). Protégés who are quickly and effectively socialized become productive members of the organization more quickly (Zey, 1991; Gray, 1989).

I found favorable outcomes are those most often studied in the literature. However, as demonstrated above, a wide variety of outcomes have been investigated. Even when the same outcomes are studied, results vary greatly. While the outcomes reported are generally positive, their magnitude varies. For example, in her study involving employees in a health care company, Fagenson (1989) found no significant difference in the promotion rate for those who had mentors versus those who did not. On the other hand, Whitely, Dreher, and Dougherty (1991) found a significant relationship between mentoring and promotions in their survey of MBA alumni. Meta-analysis will assist in attempting to draw conclusions in this case. In this study, the focus was on the benefits to the protégé since the intention of the mentoring relationship is to develop the protégé in some capacity. Benefits to the protégé were classified as career (e.g., promotions, career satisfaction), personal (e.g., self-esteem, self-confidence) or organizational (e.g., organizational commitment, reduced turnover).

Informal Mentoring

Informal mentoring relationships develop on their own without assistance from an organization. Either the potential mentor or the potential protégé may initiate the relationship. Ragins and Cotton (1999) assert that this relationship is initiated as a result of some mutual identification. Mentors select protégés whom they see as younger versions of themselves who they desire to nurture, perhaps because, in the past, someone nurtured them. This desire may stem from a need to contribute to the future generation (Erickson, 1963). Protégés, in early career stages, seek successful individuals to emulate. A closer relationship with such an individual provides both learning opportunities and maybe career opportunities as well.

Informal mentoring relationships are often described as very personal (Missirian, 1982), intense (Chao, Walz, & Gardner, 1992; Caffarella & Olson, 1993), intimate (Kram, 1985), and even loving (Levinson et al., 1978). Such close relationships result in a strong rapport between the partners and a high level of mutual trust, elements Kram (1985) asserted were essential for those involved to gain the most from mentoring relationships. These strong relationships result in more mentoring functions being provided and more intrinsic and extrinsic benefits for both mentor and protégé.

Expertise appears to play a role in the formation of informal mentoring relationships (Allen, Poteet, & Burroughs, 1997; Kram, 1983, 1985; Olian, Carroll, Giannantonio, & Feren, 1988). Mentors select protégés whom they perceive to be competent because they feel these protégés are more likely to succeed, thereby reflecting favorably on the mentor. Research demonstrates protégés tend to be higher performers than their peers who are not in mentoring relationships. Those with greater initiative and

who are career-driven (i.e., the highest performers) are most likely to enter into informal mentoring relationships (Ragins, Cotton, & Miller, 2000). Protégés select mentors who have the expertise they desire. Interpersonal skills may also play a role in the formation of these informal relationships. Both parties may be able to feel a higher level of comfort if their partner has a sufficient level of interpersonal skills thereby making the relationship closer, more relaxed and productive (Kram, 1983, 1985).

It is important to understand the nature of the informal mentoring relationship since this is what formal mentoring programs are trying to replicate. However, there may be some differences between informal and formal relationships in terms of who participates in the relationship and how the relationship is formed. These factors, in turn, may affect the quality of the mentoring relationship. The next section will discuss formal mentoring relationships to clarify some of the potential differences and similarities between formal and informal mentoring relationships.

Formal Mentoring

Organizations establish formal mentoring programs in an attempt to gain the benefits of informal mentoring relationships across a greater number of their organizational members. Organizations believe it may be possible to derive benefits similar to those obtained through informal mentoring relationships by institutionalizing the process. By increasing the number of mentor-protégé dyads, the goal is to increase the benefits to mentors, to protégés, and to the organization. Just as organizations do not attribute their success to the informal mentoring relationships within their organization, formal mentoring programs alone are not expected to make an unproductive company

productive. Organizational success will depend on a variety of factors, of which a formal mentoring program is but one contributing dimension (Scandura, Tejada, Werther, & Lankau, 1996). Informal relationships seem to happen by chance, relying on some fuzzy form of mutual identification. A formal program is an attempt to replicate that fuzzy process across a wider audience.

Formal mentoring programs are defined as those that give structure to the process of mentoring by guiding the matching of mentors and protégés and providing rules and procedures to guide the relationship (Givens-Skeaton, Baetz, & D'Abate, 2003). One primary criticism of formal mentoring relationships is that they are more superficial than naturally occurring relationships (Murray, 2001). It has been suggested that this superficiality is due to the inability to legislate "chemistry" and personal commitment (Kizilos, 1990; Kram, 1985). Klauss (1981) and Kram (1985) both assert that this will lead to less positive outcomes in formally established mentoring relationships as compared to those that are informally established. I believe the research provides a much less clear-cut view on this.

Formal mentoring programs have also been criticized because of problems arising as a result of such programs. These criticisms include resentment by non-participants, role conflict between the protégé's boss and the mentor, negative experiences within the mentoring relationship, and a lack of effective mentors (Kizilos, 1990; Noe, 1991; Douglas & McCauley, 1999). Research to support these claims is thin but this is a growing area of interest. Negative outcomes are not unique to formal mentoring relationships, but can occur in both formal and informal mentoring relationships. Recent evidence (Eby and Allen, 2002) does suggest that negative mentoring experiences may be

more prevalent in formal mentoring relationships than in informal relationships.

Investigations of negative outcomes, however, are a relatively recent development in the field and the amount of empirical research on negative mentoring is limited. These types of studies tend to focus on a negative mentoring experiences rather than the entire mentoring relationship. These mentoring incidents are taken out of the context of the mentoring relationship as a whole. In this study I looked at the mentoring relationship in its entirety and, therefore, excluded studies that focused on negative incidents within a mentoring relationship.

Formal mentoring relationships may have a wider variation in the characteristics of their participants. Unlike those in informal mentoring relationships, protégés in formal mentoring relationships may not be predominantly high performers, may not be as career-driven, and may not be as receptive to their mentor's advice (Ragins & Cotton, 1999). Individuals in informal mentoring relationships have chosen to participate in the relationship while protégés in formal mentoring programs may be either voluntary or involuntary. Organizations may open up their programs to anyone who is interested while other organizations may put restrictions on who can participate. For example, an organization may require all newcomers to participate in a formal mentoring program while another organization may require those identified as having high potential to participate. The outcomes of formal mentoring programs may be different based on who chooses to participate or who is required to participate. This study helps clarify whether or not voluntary participation in formal mentoring programs is related to the program outcomes.

Kram (1985) contended that mentor-protégé relationships that develop naturally are different from and provide more effective mentoring than mentor-protégé relationships that are formally arranged by the organization. Kram's research, however, only involved mentoring dyads in informal relationships. While it is generally accepted that informal mentoring relationships are better than formal mentoring relationships, formal mentoring programs may have some advantages over informal mentoring programs. For example, the privileged relationship of a mentor and protégé in an informal relationship can lead to feelings of resentment by other organizational members. This may be particularly true of the protégé's supervisor who may not understand the informal relationship of their subordinate with a more senior executive. This is not the case with formal mentoring programs where the mentoring relationships are much more visible.

Informal cross-gender mentoring relationships can elicit rumors of romantic or sexual involvement. It is anecdotal evidence that supports this claim rather than empirical evidence. The possibility of such rumors, however, can make mentors and protégés reluctant to enter into such relationships. The formal nature of an organizational mentoring program may reduce the probability of such rumors. Additionally, mentors and protégés can become linked through their informal mentoring relationships. Such linkages may have adverse consequences for the other member of the dyad if the mentor or the protégé falls out of favor within the organization. This may not be as likely in a formal program where mentoring relationships can be dissolved more readily. A disgraced mentor can be replaced without reflecting negatively on the protégé. A poor decision by a protégé need not reflect on the mentor (Benabou & Benabou, 1999).

Previous research comparing the effects of formal and informal mentor-protégé relationships has found mixed results. For example, Chao, Walz, and Gardner (1992) found that protégés in informal and formal relationships reported receiving similar levels of psychosocial support but protégés in informal mentoring arrangements reported greater career mentoring. Noe's (1988a) results showed that protégés perceived greater psychosocial benefits than career-related support in formal relationships. Fagenson-Eland, Marks, and Amendola (1997) reported that protégés perceived greater psychosocial mentoring in informal mentor relationships as compared to formal relationships, and that their perceptions of career mentoring were not influenced by relationship formality. Conversely, Kogler-Hill and Bahniuk (1998) found no difference in the amount of psychosocial functions provided by either formal or informal mentoring relationships.

Chao, Walz, and Gardner (1992) suggest that it may be easier to provide the psychosocial functions to protégés than it is to provide the career-related functions. The psychosocial functions pertain to interactions between mentor and protégé. The career functions, however, take place outside of the dyadic relationship. For example, the career functions of exposure and visibility can involve introducing the protégé to influential people within the organization or allowing the protégé to participate in an important meeting. These types of actions may put the mentor at risk if the protégé does not meet the mentor's expectations. Mentors may not be willing to put themselves at risk when they did not initiate the mentoring relationship.

A second reason that formal mentors may not provide as much career-related support as informal mentors is that they may not have the resources at their disposal to do

so. Depending on how the dyad was formed, the mentor may not even be within the same organizational function as the protégé. He or she may not be aware of the ‘best’ career path for the protégé, nor have contact with the people within the organization who could benefit the protégé’s career.

A third reason formal mentors may not provide as much career-related support is the shorter-term nature of the relationship. According to Kram (1985), informal mentoring relationships may last six years or more. Generally formal mentoring programs are less than two years in duration and some are as short as six months. This may not give mentors time to provide as many career functions and certainly provides less time for outcomes such as increased promotion and compensation to be realized. Oftentimes, mentoring relationships that start formally continue on informally after the completion of the organization’s program. In these relationships, it is possible that career functions may be realized during the informal continuation phase.

When comparing informal mentoring relationships to formal mentoring relationships, it was expected that there would be differences between them. I expected closer relationships were more likely formed in informal mentoring relationships as compared to formal mentoring relationships, resulting in higher quality relationships and more positive outcomes. As a result the following hypotheses were proposed:

Hypothesis 1: A greater amount of career-related and psychosocial functions will be provided in informal mentoring relationships than in formal mentoring relationships.

Hypothesis 2: A greater amount of outcomes will be found in informal mentoring relationships than in formal mentoring relationships.

Hypothesis 2a: A greater amount of career outcomes will be found in informal mentoring relationships than in formal mentoring relationships.

Hypothesis 2b: A greater amount of personal outcomes will be found in informal mentoring relationships than in formal mentoring relationships.

Hypothesis 2c: A greater amount of organizational outcomes will be found in informal mentoring relationships than in formal mentoring relationships.

Confirmation of the above hypotheses does not necessarily lead to the conclusion that formal mentoring relationships are ineffective. Rather, formal mentoring relationships needed be examined more closely. Formal mentoring programs are intended to provide mentors to more organizational members and, in turn, gain the benefits associated with mentoring relationships. The presence of a mentor, however, does not guarantee a successful mentoring relationship. Rather, it is the quality of that relationship that is important. Higher quality mentoring relationships are characterized as those that provide the greater array of mentoring functions. The greater the degree of career development and psychosocial functions offered by the mentor, the higher the quality of the mentoring relationship.

This quality-to-outcome relationship has been supported by a number of studies involving primarily informal mentoring relationships. Burke (1984) found that quality is related to protégé's career progress. In one of the few longitudinal studies in the mentoring literature, the quality of the mentoring relationship was positively related to organizational commitment and organizational citizenship behavior (Donaldson, Ensher, & Grant-Vallone, 2000). Finkelstein, Allen, and Rhoten (2003) found relationship quality had a significant positive relationship with mutual learning for the mentor and

protégé ($r = .57, p < .01$). In a study of health-care professionals (Koberg, Boss, & Goodman, 1998), the amount of mentoring functions provided was significantly correlated with self-esteem ($r = .28, p < .05$) and job involvement ($r = .20, p < .05$). The quality-outcome relationship is not universally supported, however. In a study of managerial and professional women, Burke and McKeen (1997) found the amount of mentor functions provided (i.e., quality) predicted career satisfaction ($F = 2.34, p < .05$) but not intention to quit, promotion prospects, or job satisfaction. The authors offer the explanation that other work and non-work factors can influence these outcomes in addition to mentoring relationships.

I believe the research provided substantial support for the link between the quality of the mentoring relationship as measured by mentoring functions and outcomes of mentoring relationships. I expected this to hold true for both formal and informal mentoring relationships. When looking only at mentoring relationships within formal mentoring programs, it was expected that all three types of outcomes would be associated with higher quality mentoring relationships and, therefore, the following hypotheses were proposed:

Hypothesis 3: Within formal mentoring relationships, there will be a positive relationship between the career and psychosocial mentoring functions provided by the mentor and outcomes realized by the protégé.

Hypothesis 3a: Within formal mentoring relationships, there will be a positive relationship between the career and psychosocial functions provided by the mentor and the career outcomes attained by the protégé.

Hypothesis 3b: Within formal mentoring relationships, there will be a positive relationship between the career and psychosocial functions provided by the mentor and the personal outcomes attained by the protégé.

Hypothesis 3c: Within formal mentoring relationships, there will be a positive relationship between the career and psychosocial functions provided by the mentor and the organizational outcomes attained by the protégé.

Formal Mentoring Program Characteristics

Over the last three decades, formal mentoring programs have become a very popular human resource management tool for the development of new and experienced organizational members. Formal programs, however, differ on a number of key characteristics (Ehrich, Hansford, & Tenant, 2003). These include the process by which mentors and protégés are matched, voluntary versus involuntary participation in the mentoring program, the purpose of the program, the use of training and orientation in preparation for participating in the mentoring program, the frequency of interaction between mentor and protégé, and the duration of the program. While some of the characteristics may be important to both formal and informal mentoring relationships (e.g., length of the relationship and frequency of interaction), others are unique to formal mentoring programs (e.g., involuntary participation, training). This study focused on these program characteristics since they are most often cited in both the popular and empirical literature as being influential in the potential success or failure of formal mentoring programs.

Research looking specifically at the effects of various program characteristics of formal mentoring programs is limited. Several studies have reported the frequency of interactions among mentors and their protégés as well as duration of the relationship, but this was generally not the focus of the study (Burke, 1984; Ragins & Scandura, 1997; Ragins & Cotton, 1999). One study looked specifically at several program characteristics. Ragins, Cotton and Miller (2000) investigated the effect of voluntary participation, matching, purpose, mentor recognition, and program guidelines on career and job attitudes. They surveyed members of three professional associations that represented social workers, engineers, and journalists who were protégés in formal mentoring programs. The only characteristic found to be significantly related to job attitudes was program purpose. Programs whose purpose was to promote the protégés' career, as opposed to orienting the new employees, were significantly related to satisfaction with opportunities for promotion. Other program characteristics were not significantly related to career and job attitudes.

Much of the research on formal mentoring programs involves a single formal mentoring program within an organization. While experiments or quasi-experiments involving mentoring programs that do and do not include the program characteristics of interest should ideally be included in a study of this type, few, if any, exist. For this reason, it was necessary to include research reports of individual formal mentoring programs. These types of studies described their programs, providing the information on the program characteristics. Additionally, these studies reported on one or more outcomes. In some cases, outcomes were reported for both those who participated in the formal mentoring program and for those who do not. More often, outcomes are reported

solely for those who participated. These studies were included in this meta-analysis to cumulate the status of existing research on program characteristics. While each of the selected program characteristics was investigated individually, I recognized that these characteristics do not operate in a vacuum. Rather, the program characteristics may interact with each other and other organizational characteristics may affect the relationships between program characteristics and outcomes. This was a limitation of this study.

Matching

In the establishment of informal mentoring relationships, either the mentor or the protégé can initiate the relationship. Researchers believe there is an attraction between the mentor and the protégé that aids in the establishment of the relationship. This attraction, in turn, increases interaction, and is the basis on which the mentoring relationship develops. The initial attraction is thought to be the result of similarities between the mentor and protégé. In order to best replicate informal mentoring, mentoring theorists and practitioners advocate the use of matching of the mentor and protégé on one or more dimensions within formal mentoring programs.

Matching is the term used to refer to how the mentor and protégé are paired up in formal mentoring programs. Matching can occur in several ways and can be thought of as a continuum from methods that are most similar to informal mentoring to least similar. For example, those mentors and protégés who have agreed to participate in the program can be put into situations wherein they will be able to interact informally and then can select each other from the pool of participants. Another alternative is to allow protégés to

choose mentors from among a pool of volunteers. Conversely, mentors may be allowed to choose from among the pool of protégés. Some organizations form committees who pair mentors and protégés on a variety of dimensions to include skills, gender, race and location. Still other organizations randomly pair mentors with protégés. In these latter cases, protégés and mentors may not even meet until after the match has been made (Ragins & Cotton, 1999). Chao, Walz, and Gardner (1992) likened this practice of random assignment of protégés to mentors to that of blind dates; there would be a small probability that the match would be successful, but more attention to the selection phase would raise the probability of a productive relationship above chance levels.

Organizations vary in how much direct involvement of mentors or protégés there is in the matching process. For example, at Texaco Trading and Transportation, protégés are asked to indicate if they are interested in developing skills in a different functional area than the one in which they are currently serving. If yes, protégés are matched with mentors from the functional area in which the protégé has expressed an interest. At Hallmark Cards Inc., mentors fill out profile sheets with their pictures, background information and details such as why they want to be a mentor, what they hope to gain from the experience, their associations with professional and civic organizations, and what their hobbies are. Protégés can then review their profiles and indicate their preference for a particular mentor. At Imperial Oil Limited, both mentors and protégés fill out mentoring resumes with information such as their current job responsibilities, interests and hobbies, and what they hope to gain from the mentoring program. Mentors and protégés then list three people with whom they would like to be matched. Direct matches are honored, followed by protégé preferences (Forrett, 1996).

Clearly, there are a variety of methodologies organizations can use to match mentors and protégés. None of these methods are foolproof and the program participants may have limited information available to them. Some involvement by the mentor and/or protégé, however, seems warranted. The next few paragraphs discuss several theories that support the participation of the mentor and protégé in the matching process within formal mentoring programs.

Similarity-Attraction Paradigm

The Similarity-Attraction Paradigm, introduced by Byrne (1971), provides an explanation for how mentoring relationships develop in their initial phase. The ‘similarity-attraction’ paradigm states that similarity between individuals with regard to personal attributes or other characteristics is linearly related to interpersonal attraction: similarity gives rise to attraction while dissimilarity engenders repulsion. Byrne suggested that it is the combination of a high level of attraction based on similarity in attitudes, values, and experiences (Byrne, 1971; Byrne, Clore & Smeaton, 1986) and strong communication among the interacting members of the dyad (Roberts & O'Reilly, 1979) that leads to a successful and productive relationship.

Research provides substantial evidence, across diverse populations, on the strong association between similarity and interpersonal attraction. Werner and Parmelee noted shared activities are "especially important in initial stages of friendship development" (1979, p. 65). A positive relationship has been found between similarity and attraction between supervisors and subordinates (Liden, Wayne, & Stillwell, 1993; Turban & Jones, 1988) and among group members (Newcombe, 1961). People tend to be drawn to those

who are similar to them in terms of demographic characteristics, activities or attitudes (Byrne, Clore, & Worchel, 1966).

Similarity is believed to be a strong factor that determines mentor-protégé attraction. Mentors have indicated that they were attracted to protégés who reminded them of themselves at a point earlier in their career, and that the factor that drew them to their protégé was seeing something in that protégé that was similar to something they saw in themselves (Kram, 1985; Zey, 1991). The prosocial literature also indicates that people are more likely to help one who is similar than one who is dissimilar. Mentoring protégés similar to one's self may bring more rewards to the mentor in that it is more enjoyable to engage in relationships with individuals who share similar interests and values (Schroeder, Penner, Dovidio, & Piliavin, 1995). Moreover, positive outcomes may be easier to anticipate by mentoring a protégé similar to one's self in that it is easier to predict their behavior (Allen, Poteet, & Burroughs, 1997).

The interpersonal relationship literature indicates that factors such as attraction, similarity, and liking are important precursors of relationship development (Levinger, 1983). Characteristics that tend to lead to positive assessments of a relationship include intimacy and closeness, trust, mutual attraction, and complementarity (Levinger, 1983). If the mentor and protégé do not develop a sense of mutual attraction or intimacy (e.g. there is a mismatch in values or personality), it follows that the protégés may report a desire to terminate the relationship (Eby & Allen, 2002).

Similarity in attitudes, values, interests or demographic characteristics between mentors and protégés may lead to a more comfortable relationship (Sauve, 2004). It may give the relationship partners common ground on which to establish their relationship.

The more comfortable the two people are with each other, the more likely the pair will be to interact with each other. Greater interaction leads to more communication and, in turn, a higher quality relationship in which there is a greater likelihood that more mentoring functions will be provided. Role modeling, a psychosocial function, involves both interaction and identification (Kram, 1985). Both may be lacking if mentors and protégés are not involved in the selection process.

Leader-Member Exchange (LMX) Theory

Related to Byrne's (1971) similarity-attraction paradigm is the literature regarding LMX theory wherein perceived and actual similarity are applied in a work-related context. Similarity affects perceptions of shared identity and liking between two individuals. In turn, liking affects the quality of work-related dyadic relationships, such as leader-member exchange (e.g., Engle & Lord, 1997; Liden, Wayne, & Stilwell, 1993).

In the context of LMX theory, Deluga (1998) argued that interpersonal attraction promotes supervisor-subordinate compatibility, and that the resulting rapport encourages accurate perceptions of supervisor performance expectations and, consequently, improved subordinate performance. There is evidence that perceptions of congruence between the supervisor and subordinate, both in a general sense (Wexley & Pulakos, 1983) and with regard to specific attributes such as demographic characteristics (Epitropaki & Martin, 1999), attitudes (Phillips & Bedeian, 1994), values (Ashkanasy & O'Connor, 1997), competence (Kim & Organ, 1982) and personality traits (Bauer & Green, 1996), have been associated with LMX quality. Turban and Jones (1988) found that subordinates who regard themselves as being similar to their supervisors

communicate more with them, and are consequently rated as higher performers than those who do not (Allinson, Armstrong, & Hayes, 2001).

Further, leader-member exchange has been related to mentoring relationships both theoretically (McManus & Russell, 1997; Sparrowe & Liden, 1997) and empirically (Scandura & Schriesheim, 1994). In a study of subordinates in a high-technology manufacturing organization, Scandura and Schriesheim (1994) found that responses on the LMX measure was highly correlated with the supervisor career mentoring measure ($r = .94, p < .01$). Subordinates see leader-member exchange and supervisory career mentoring as similar types of relationships although role modeling is stronger in the mentoring relationship than in the leader-member exchange.

Social Identity Theory

Social identity theory (Ashforth & Mael, 1989; Tajfel & Turner, 1979; Tajfel, 1974) asserts that individuals possess a social identity or self-image based on the categories (e.g., race, gender, occupation) to which they belong. Membership in a category can have positive or negative connotations, depending on the social consensus about the status or value of category membership. Since individuals seek to maintain positive social identities, those who belong to low-status groups may engage in various strategies to achieve a more positive social identity. One such strategy is to distance themselves from their own group and psychologically join a higher-status group. Entering a mentoring relationship can be used by a protégé to increase his or her status within the organization (Graves & Powell, 1999).

Individuals strive to protect or enhance positive distinctiveness and positive social identity. The desire for positive social identity through positive distinctiveness is

supported by a basic human need for positive self-esteem; a self-enhancement motive. The implication is that the need for self-esteem motivates social identification and group behavior. In turn, the social identification satisfies the need for self-esteem (Hogg, 2001). Protégés, often new members of an organization, seek to bolster their self-esteem and social identity within their new surroundings. One way this can be accomplished is through a mentoring relationship. The mentor, however, must be perceived as someone who can enhance the protégé's status. This is more likely when the protégé is involved in the selection of their mentor.

Social identity processes are not only motivated by self-enhancement (the self-esteem hypothesis) but also by a self-evaluative motive to reduce subjective uncertainty (the uncertainty reduction hypothesis) (Hogg & Abrams, 1993; Hogg & Mullin, 1999). Individuals want to avoid subjective uncertainty about important, self-conceptually relevant matters. Subjective uncertainty reduction is a means of self-protection and is a powerful human motive. When an individual feels more certain about their world and their place in it, the individual is more confident about how to behave, and what to expect from both the physical and social environment of the workplace (Hogg & Mullin, 1999). The processes of self-categorization and prototype-based depersonalization reduce uncertainty because perceptions, attitudes, feelings, and behavior are now prescribed by an in-group prototype that usually has consensual validation from other group members. The mentoring relationship can assist the protégé in learning how to fit into the organization.

As supported by the similarity-attraction paradigm (Byrne, 1971), protégés are likely to prefer mentors who are like them. Protégés may feel it is easier to learn from a

mentor if they can identify with them and also feel they can gain the most from the mentoring relationship if they are matched with a mentor who they feel is part of the in-group (Tajfel, 1974). However, when potential mentors and protégés are similar, but one or the other is part of the out-group, the similarity-attraction paradigm and social identity theory are at odds. For example, a woman may feel she will be able to relate to and feel more comfortable with a female mentor as supported by the similarity-attraction paradigm. If, however, all of the senior women are in lower status divisions of the organization (e.g., human resources or training), then a female protégé who wants to move up through the operational side of the organization may feel a female mentor cannot provide support for her career aspirations. This is especially relevant with respect to same-sex and same-race mentoring dyads that will be discussed in a later section.

The empirical research indicates that as perceived or actual mentor-protégé similarity increases, so does the amount of mentoring received. Burke, McKeen, and McKenna (1993) measured perceived similarity in terms of intelligence, approach to procedures, personality, background, ambition, education, and activities outside work. They found mentors provided more psychosocial and career development functions to protégés who were similar to themselves ($r = .25, p < .01$ and $r = .26, p < .01$, respectively). Turban, Dougherty, and Lee (2002) explored the developmental relationship between doctoral students and faculty advisors. They found more mentoring functions were perceived by protégés when protégés felt their mentors were similar in terms of values, attitudes, career aspirations, and working styles. There was an especially strong relationship between perceived similarity and psychosocial mentoring functions ($r = .73, p < .05$). Nielson, Carlson, and Lankau (2001) surveyed business school graduates,

collecting data on the perceived similarity of their mentor's values and attitudes toward work and family balance. They found similar values and attitudes were related to the amount of psychosocial functions ($r = .30, p < .01$), career development functions ($r = .37, p < .01$), and role modeling ($r = .34, p < .01$) provided by their mentor. The similarity in values and attitudes was also highly correlated with less family-to-work conflict ($r = -.22, p < .01$). This significant relationship held up even when controlling for gender. No distinction between formal and informal mentoring relationships was made in this study.

Studies of formal mentoring programs support the planned matching of mentor and protégé as well. Ensher and Murphy (1997) investigated the role of perceived similarity in the context of a summer intern program. They found that the protégés' perception of mentor similarity was strongly correlated with both psychosocial functions ($r = .85, p < .001$) and instrumental functions ($r = .66, p < .001$). Viator (1999), using a survey of accountants in large public accounting firms, found that protégés who were allowed input into the matching process were significantly more satisfied with their mentors than protégés who were not involved. Those protégés not involved in the process reported that their mentors did not meet their needs. This may have been due to a lack of communication as a result of the mentor and protégé not identifying closely with one another.

I recognized that the involvement of mentors and protégés in the matching process is a continuum from very little involvement on the part of both the mentor and protégé to a great deal of involvement by both parties. Protégés, especially those new to an organization, may rely on surface characteristics or make inferences about a potential

mentor's values and attitudes based on very limited information. While these distinctions are noteworthy, the program characteristic of matching was considered a dichotomous variable in this study. The majority of the available research looks at this characteristic as either (1) random assignment or (2) matched with the involvement of the mentor and/or protégé. This led to the following hypotheses:

Hypothesis 4: Formal mentoring programs that allow the mentor and/or protégé to be involved in the selection of their partner will be associated with more positive outcomes.

Hypothesis 4a: Formal mentoring programs that allow the mentor and/or protégé to be involved in the selection of their partner will be associated with more positive career outcomes.

Hypothesis 4b: Formal mentoring programs that allow the mentor and/or protégé to be involved in the selection of their partner will be associated with more positive personal outcomes.

Hypothesis 4c: Formal mentoring programs that allow the mentor and/or protégé to be involved in the selection of their partner will be associated with more positive organizational outcomes.

Voluntary versus Involuntary Participation in a Mentoring Program

Another characteristic of formal mentoring programs involves whether or not participation in the program is voluntary or mandatory. It is important to look at this both from the perspective of the protégé and the mentor. Social exchange theory views the interaction between two people as an exchange in which the costs of participating in the relationship are compared to the perceived benefits (Homans, 1958; Olian, Carroll, &

Giannantonio, 1993). The theory of social exchange assumes we are rational beings who develop relationships that involve costs to ourselves because they also provide benefits. Mentors and protégés both want to maximize benefits and minimize costs (Gibb, 1999). When participants volunteer for a mentoring program, they have conducted their own cost-benefit analysis of participating in such a program. When participation is voluntary, those choosing to participate perceive there are benefits to be gained. Volunteers may be more committed to their own development or to their chosen profession (Ingersoll & Kralik, 2004), making them better protégés and better mentors.

Protégés see numerous potential benefits to be gained from participating in a mentoring relationship. Protégés hope to obtain career advancement or to gain the benefits of socialization so that they feel that they are part of the organization. As discussed above, with respect to social identity theory, people want to feel like they are part of the group. A mentor's guidance and advice can ease the protégé's transition into the organization or work group. The psychosocial support received from a mentor can boost the self-confidence of the protégé, making him feel like a productive member of the organization. Murray (2001) suggested that a protégé's desire to participate and his self-selection into a formal mentoring program are valuable elements for the initiation of a successful relationship. These protégés may be more receptive to input and constructive criticism from their mentor resulting in greater effectiveness. While expert opinion suggests that voluntary participation in developmental interactions is critical (Gaskill, 1993; Murray, 2001), Robinson, Tannenbaum, and Givens-Skeaton (2003) noted that no empirical evidence exists to support this claim.

A good, high quality mentoring relationship requires time and effort on the part of the mentor, but there are potential benefits for the mentor. The protégé can ease a mentor's workload and provide an additional information channel. A mentor may receive intrinsic satisfaction as a result of helping a protégé work toward career goals. Mentors who assist their protégés in becoming productive team members may receive recognition and respect from their peers and superiors. They receive internal satisfaction from passing their skills and wisdom on to their protégés. Kram's (1985) in-depth interviews with mentors indicated they expected to receive recognition and a sense of achievement once their protégés attained success in their professional life. Mentors may gain generativity, the sense of immortality derived from making such a contribution to their protégé, helping them to progress to the next life stage and avoid stagnation in life development (Erickson, 1963). Mentors who are more senior in the organization see mentoring as a way of leaving a legacy to the organization or to their profession (Olian, Carroll, & Giannantonio, 1993). Extrinsic rewards, such as monetary compensation and an enhanced reputation, are other possible benefits to be gained from their participation.

When participation in a mentoring program is mandated for protégés and/or mentors, an individual may be forced to participate even though he believes the costs outweigh the benefits. Protégés may feel their required participation is a signal that their performance is not up to par, resulting in a negative impact on their self-confidence. Potential protégés may be skeptical of the formal program if they know participation by mentors is not voluntary. Protégés may not trust senior managers' motives for instituting the involuntary program, or they may not respect the competence and advice of the participating mentors (Kram, 1985). Protégés in mandatory formal relationships may

perceive that their mentors spend time with them because of a commitment to the mentoring program and the organization, rather than because of a personal commitment to the protégé. The protégé may feel that the mentor does not believe in their potential. These factors can inhibit the development of trust and emotional closeness in the relationship resulting in the realization of fewer psychosocial functions (Ragins & Cotton, 1999).

Required participation by protégés, however, may also signal that they are a valued member of the organization, on whom management considers it worthy of spending time and effort on their development. In other words, mandatory participation may have either a positive or a negative effect on the protégé. Unfortunately, this is generally not directly measured in the research and may contribute to heterogeneity in the outcomes reported by protégés required to participate in formal mentoring programs.

Involuntary mentors are less likely to receive the intrinsic rewards from the mentoring relationship and, therefore, may not be as personally invested in their protégés' development as voluntary mentors would (Ragins, Cotton, & Miller, 2000). The time and energy involved in developing and nurturing the mentoring relationship may be seen as a burden for a busy executive (Halatin & Knotts, 1982). The recognition received from the relationship may also have a cost because of the visibility of the relationship. If paired with a poorly performing protégé, it may cast a negative shadow on the mentor's judgment and competency (Halatin & Knotts, 1982; Kram, 1985). A formal mentor may view his protégé as a marginal performer who has entered the program because of his weaknesses. The mentor may then have difficulty providing acceptance and confirmation, two of the psychosocial mentoring functions, since these are based on

respect and perceived competency (Ragins & Cotton, 1999). A mentor may also perceive that he might not receive a high return on his investment of his valuable time from a marginal protégé (Olian, Carroll, & Giannantonio, 1993). Other costs include the risk of being displaced or "backstabbed" by an ambitious or disloyal protégé (Halatin & Knotts, 1982). Myers and Humphreys (1985) contend that mentors who do try to advance their protégés' career can run the risk of being viewed as playing favorites. This perception may harm a mentor's organizational reputation. Overall, I believe there are greater potential disadvantages when participation in a mentoring program is required.

The prosocial behavior literature also provides a useful perspective for viewing the voluntary or involuntary nature of the formal mentoring relationship. Brief and Motowidlo (1986) define prosocial behavior as positive social acts (e.g., helping, sharing, donating, cooperating, and volunteering) that are carried out to produce and maintain the well-being and integrity of others. Prosocial behavior are acts an individual engages in that are expected to benefit the person, group or organization toward whom they are directed. Prosocial behavior such as helping subordinates outside of those for which a manager is directly responsible, is usually a discretionary activity, one that is not role-prescribed (such as behavior that is found in an informal mentoring relationship).

Potential functional consequences of prosocial behavior are more effective job performance, improved communication and coordination among organizational members, improved job satisfaction and morale, and improved organizational efficiency in general (Brief & Motowidlo, 1986).

The prosocial behavior literature indicates that helping behavior may be motivated by egoistic concerns (i.e., helping will improve the welfare of the helper) and

by altruistic concerns (i.e., helping will improve the welfare of another) (Schroeder, Penner, Dovidio, & Piliavin, 1995). One factor that has been found to be consistently related with helping behavior is ‘other-oriented empathy,’ which is defined as the tendency to feel empathy and responsibility for the welfare of others (Schroeder, Penner, Dovidio, & Piliavin, 1995). This may be particularly true when the protégé is similar to the mentor, or when the mentor sees the protégé as an earlier version of himself. When the mentor’s participation is required by the organization, this ‘other-oriented empathy’ may not be present to as great a degree and may affect the strength and quality of the mentoring relationship. Furthermore, if forced to participate, the mentor is not motivated by egoistic concerns but rather may feel their participation is self-protective rather than self-enhancing. Prosocial behavior is more likely to exist when participation is voluntary.

Drawing on Adams’ Equity Theory (1963), it seems likely that when a mentor’s participation in a formal mentoring program is mandatory, the mentor may perceive greater inputs than outcomes for himself. The mentor, who is expected to help the protégé, perceives that the protégé receives greater outcomes with only minimal inputs on the protégé’s part. In such a situation, the mentor may try to restore equity by reducing his inputs. This may take the form of infrequent, brief meetings with the protégé in which a close personal relationship is less likely to emerge. This situation should be less apt to occur when participation in the mentoring program is voluntary.

While the majority of the research on mentoring has focused on the positive outcomes for both the mentor and protégé, recent research has recognized that mentoring relationships can be ineffective and lead to negative outcomes. Negative mentoring experiences can occur in both formal and informal mentoring relationships. Negative

mentoring experiences include sabotage by the mentor or the mentor's unavailability and inaccessibility. Since a mentor has access to resources that a protégé desires (e.g., challenging job assignments, organizational information, career guidance), the power imbalance can bring about negative mentor behavior such as overworking the protégé and taking credit for the protégé's accomplishments (Eby, McManus, Simon, & Russell, 2000). Compatibility issues such as personality clashes can also lead to negative experiences. Eby and Allen (2002) found negative mentoring experiences were reported more frequently in formal mentoring relationships than in those that were initiated informally. Participants in involuntary formal programs, where participation by both the mentor and protégé are more visible, may feel trapped when the relationship is not working well.

The following hypotheses regarding voluntary versus involuntary participation in a formal mentoring program were proposed:

Hypothesis 5: Voluntary participation in formal mentoring programs by mentors and protégés will be associated with more positive outcomes than in those programs in which participation is mandated.

Hypothesis 5a: Voluntary participation in formal mentoring programs by mentors and protégés will be associated with more positive career outcomes than in those programs in which participation is mandated.

Hypothesis 5b: Voluntary participation in formal mentoring programs by mentors and protégés will be associated with more positive personal outcomes than in those programs in which participation is mandated.

Hypothesis 5c: Voluntary participation in formal mentoring programs by mentors and protégés will be associated with more positive organizational outcomes than in those programs in which participation is mandated.

Due to the greater inputs into the mentoring relationship required by the mentor than the protégé, the voluntary participation by the mentor is more critical to the relationship than the voluntary participation by the protégé. This led to the following hypotheses:

Hypothesis 5d: Voluntary participation by mentors will be associated with more positive career outcomes than will voluntary participation by protégés.

Hypothesis 5e: Voluntary participation by mentors will be associated with more positive personal organizational outcomes than will voluntary participation by protégés.

Hypothesis 5f: Voluntary participation by mentors will be associated with more positive organizational outcomes than will voluntary participation by protégés.

Purpose of Formal Mentoring Program

Formal mentoring programs can be initiated for a variety of reasons. Some possible purposes of formal mentoring programs include orienting new employees to the organization, assisting in the development of particular skills, and promoting the protégé's career advancement. In their survey of formal mentoring programs from 50 organizations in a wide variety of industries, Givens-Skeaton, Baetz, and D'Abate (2003) found that the most frequently cited reasons for establishing formal mentoring programs were to increase employee competence (52%), improve succession planning (50%), and

to enhance socialization (50%). Many organizations espouse more than one purpose for their formal mentoring programs.

An explicitly stated purpose for a mentoring program can focus the mentor and protégé on the outcomes of their relationship. To reach those outcomes, each participant must understand his or her role in the relationship and within the organization. Success of any mentoring relationship depends on the participants' understanding of their roles. Confusion and uncertainty about roles can lead to many problems (Gibb, 1999). Kahn, Quinn, Wolfe, and Snoek (1964) described role ambiguity as a condition resulting from uncertain information about role behavior. Uncertainty can arise from complex organizational structures or from poor communication between the organizational members. A clear definition of roles is enhanced by proper feedback and formal orientation procedures. Role ambiguity has been shown to be related positively to intention to quit and negatively to job satisfaction. Without a stated purpose, protégés may be confused about their role in the mentoring relationship. For example, protégés may expect mentors to advance their career while the mentor may be trying to aid the protégé in organizational socialization.

The mentor may also be concerned about their role in the mentoring relationship – especially if this is their first time in this role. Some mentors will have been protégés previously while others may have no experience at all. A stated purpose of the mentoring program can give the mentor a direction for the meetings with their protégé. It can be a starting point from which the mentor and protégé can build.

As the more junior person in the mentoring relationship, it is the protégé who usually has the greatest concern about his role. Concerns about identity in a work role

are linked to concerns about competence. An appropriate and consistent self-image is a central concern when developing a sense of competence. For example, clarifying what it means to be a manager involves confronting the extent to which one will conform to organizational expectations and norms and the extent to which one will conflict with these expectations and norms (Schein, 1978; Van Maanen, 1976). Choices about behavior and values are critical steps in clarifying one's identity as a manager. Efforts to clarify one's identity as a manager are often facilitated by a developmental relationship (Kram, 1985).

The unfamiliarity of a new setting and the new responsibilities associated with advancement to a new level create anxiety about one's ability to perform effectively (Louis, 1980). Often, developmental relationships begin when the less experienced organizational member is faced with a significantly new kind of job (either a first job or a job at a new organizational level) (Kram, 1985). In such a situation, information is consistently needed because change and/or uncertainty are common organizational realities. Ashford (1986) hypothesized that individuals seek feedback on important issues and in new and uncertain situations. A mentoring relationship can provide a safe avenue for seeking information or feedback, particularly for the protégé, and may offer a valuable source of information needed to perform his or her job, as well as appraisal information that lets the protégé know how he or she is doing (Mullen, 1994).

One of the purposes of mentoring programs is to socialize individuals into the organization. Organizational socialization is a process whereby new members of an organization embrace the values, expected behaviors, and social knowledge required to be recognized as an organizational member (Albrecht & Bach, 1997). Adult socialization

involves the self-initiated attempt to alter role performance to reduce differences between self and others (Brim, 1966). Socialization is characterized as a process of adaptation that leads to organizational membership (Jablin, 1987) and this new behavior can be modeled without direct extrinsic reinforcement (Bandura, 1977). During the process of providing career-related and psychosocial functions, the mentor guides and protects the protégé's interests, and is thus likely to convey the necessary knowledge and information concerning the organizational history, goals, language, politics, people and performance (Chao, O'Leary, Walz, Klein, & Gardner, 1989). If mentors serve as trainers, educators, and developers, and provide psychosocial and career functions for protégés, then the socialization of individuals who are mentored should be more effective and satisfying.

Modeling, through mentoring, can be a complement to direct efforts of socialization. Although the initiative for modeling resides primarily in the individual, the organization may facilitate the process through a formal mentoring program wherein more experienced mentors can display the characteristics of the ideal organizational member. Modeling is the main vehicle of socialization influence in studies that describe the process as 'assimilation' and studies that pinpoint the desire of members to avoid being labeled as 'different' (Fogarty & Dirsmith, 2001). Schrodt, Cawyer, and Sanders (2003) showed that mentored new faculty members were more satisfied with their socialization process than new faculty members without mentors. Specifically, those with mentors reported having a stronger sense of ownership of their departments ($t = 2.81, p < .05$), feeling more connected to their work environment ($t = 2.72, p < .05$), and receiving more adequate information about the research, service, and teaching expectations ($t = 2.35, p < .05$). When socialization is a stated purpose or objective of the

program, participants are more likely to focus on it, resulting in better socialization, which is a positive outcome for a formal mentoring program.

The majority of the popular literature touts the benefits protégés may gain from participating in mentoring relationships – especially with respect to career advancement. Without a stated purpose or objectives for a mentoring program, there is a much greater chance that the protégé’s expectations with respect to career advancement will not be met. Dunnette, Arvey, and Banas (1973) operationalize unmet expectations as the difference between initial expectations (or needs) and actual experiences on the job. Unmet expectations refer only to undermet expectations, that is, experiencing less of something desirable than was anticipated. The unmet expectancies approach hypothesizes that dissatisfaction and turnover result from disconfirmed expectations similar to when a promise is broken. Relationship scholars discuss unmet needs and expectations as important predictors of distress and dissatisfaction (Levinger, 1979; Sprecher, 1992). Unmet expectations are one of the primary reasons for relationship dissolution and breakup (Duck, 1984).

Expectancy Theory (Lawler, 1973) provides further support that unmet expectations can be detrimental within a mentoring relationship. If the protégé does not receive the expected career advancement as a result of participation in the mentoring relationship, the protégé will not be motivated to continue the relationship or may reduce the amount of effort required to maintain a productive relationship.

Recent research has investigated the role of expectations in mentoring relationships. Young and Perrewé’s (2000) research involving mentors and protégés in formal mentoring programs indicated that met expectations mediated the relationship

between career and psychosocial support and the perceptions of relationship effectiveness. In another study by Young and Perrewé (2004), their results showed that protégés' expectations for career-related support was significant and was predictive of protégés' perceptions of psychosocial support received from their mentors. Eby and Allen's (2002) research on negative mentoring experiences implies that negative mentoring experiences within a formal mentoring relationship in which the protégé may have unrealistically high expectations of the outcomes of participating in the program, may result in the relationship being more easily damaged. Problems and difficulties are naturally going to arise in any type of interpersonal relationship, but when expectations of the relationship are inflated due to overstated purposes, the relationship can become strained, open communication hampered, and contact between the mentor and protégé may be avoided (Wood & Duck, 1995). The findings from these studies indicate that managing expectations in mentoring relationships is important to relationship success.

A stated purpose or objective of a formal mentoring programs lets mentors, protégés, and other organizational members know what the program is all about thus clarifying the roles of the participants. It can prevent unrealistic expectations on the part of protégés. Because there is an explicit focus for the program, outcomes based on the stated purpose are more likely to be achieved. Therefore, the following hypotheses were proposed:

Hypothesis 6: Formal mentoring programs with an explicitly stated purpose will be associated with more positive outcomes than will programs without a stated purpose.

Hypothesis 6a: Formal mentoring programs with an explicitly stated purpose will be associated with more positive career outcomes than will programs without a stated purpose.

Hypothesis 6b: Formal mentoring programs with an explicitly stated purpose will be associated with more positive personal outcomes than will programs without a stated purpose.

Hypothesis 6c: Formal mentoring programs with an explicitly stated purpose will be associated with more positive organizational outcomes than will programs without a stated purpose.

Since an explicitly stated purpose can focus the mentoring relationship, different purposes may be associated with different outcomes. The following hypotheses were offered with respect to career-related and organizational purposes:

Hypothesis 6d: Formal mentoring programs whose stated purpose is the career development or advancement of the protégé will be associated with more positive career outcomes than programs with stated personal or organizational purposes.

Hypothesis 6e: Formal mentoring programs whose stated purpose is organizational in nature will be associated with more positive organizational outcomes than will programs with stated career development or personal purposes.

When the purpose of the program is organizationally focused, the mentoring relationship should be directed toward making the protégé a productive member of the organization. An effective mentoring relationship would boost the protégé's self-confidence and make him feel like he is part of the organization. A mentor who attempts to advance the protégé's career also provides a confidence boost to the protégé. Both

purposes may result in positive personal feelings on the part of the protégé. Therefore, the following hypothesis was proposed:

Hypothesis 6f: Personal outcomes will be the same for formal mentoring programs whether the stated purpose is for career development of the protégé, for the personal development of the protégé, or for organizational purposes.

Training

PA Personnel Services conducted an international study of formal mentoring programs in 67 companies in eight different nations (as reported by Gray, 1988). They concluded that the lack of training for mentors is the primary reason mentoring programs fail. When formal programs included training, 64% of the organizations and 75% of the protégés reported the programs were successful. Since both the mentor and the protégé may be new to their role in the mentoring relationship, it seems reasonable that an orientation or training session would be beneficial to the participants in a formal mentoring program.

During the training or orientation session, information on the purpose of the program can be provided, thereby eliminating some of the potential problems discussed above. While it is important for the program to have a purpose, it may be even more important that that purpose be communicated to the participants in the program. Other information that may be covered includes mentor functions and potential benefits and limitations of the program. Responsibilities of both the mentor and protégé may be part of the training session as well (Wanberg, Welsh, & Hezlett, 2003; Forret, 1996).

Even with the desire to form an intimate connection in a mentoring relationship, the lack of effective skills in listening, self-disclosure, conflict management, trust-building, and giving and receiving feedback, will spoil the best intentions (Kram, 1985). The mentoring literature suggests that participants be trained in the development of affective behaviors (e.g., trust-building, helping, supporting, encouraging, reaffirming, understanding) (McDougall & Beattie, 1997), communicative behaviors (e.g., discussing, listening, questioning, collaborating) (Gaskill, 1993), learning behaviors (e.g., facilitating, reflecting, coaching, modeling, taking other perspectives) (Hallett, 1997), and challenging behaviors (e.g., constructive criticism, disagreeing, disciplining) (Gray, 1988). These skills will assist the partners in building rapport and increasing trust, which are the prerequisites for increasing the range of mentoring functions (Kram, 1985).

While it seems logical that the training of mentors and protégés in the skills mentioned in this section should lead to better mentoring relationships, the empirical evidence to support this contention is limited. In one of the few studies of formal mentoring programs that involved an experimental group and a control group, Evertson and Smithey (2000) found that new teachers whose mentors had participated in training were more effective. Specifically, the protégés of trained mentors developed and sustained workable classroom routines, managed classroom instruction more smoothly, and gained student cooperation for academic tasks more effectively than their counterparts whose mentors did not participate in the training program. Trained mentors were able to identify potential problem areas and help their protégés address them much earlier. This study suggests that having a well-intentioned mentor may provide some

emotional support to the protégé, but more can be gained from the relationship if mentors are given some instruction about their role as mentor and how to realize that role.

Training can help clarify roles and expectations and provide skills necessary for forming and maintaining a productive mentoring relationship, therefore, the following hypotheses were offered:

Hypothesis 7: Training and/or orientation provided to mentors and/or protégés in formal mentoring programs will be associated with more positive outcomes than in programs in which no training or orientation is provided.

Hypothesis 7a: Training and/or orientation provided to mentors and/or protégés in formal mentoring programs will be associated with more positive career outcomes than in programs in which no training or orientation is provided.

Hypothesis 7b: Training and/or orientation provided to mentors and/or protégés in formal mentoring programs will be associated with more positive personal outcomes than in programs in which no training or orientation is provided.

Hypothesis 7c: Training and/or orientation provided to mentors and/or protégés in formal mentoring programs will be associated with more positive organizational outcomes than in programs in which no training or orientation is provided.

Frequency of Interaction and Length of Relationship in Mentoring Programs

Formal mentoring programs may last from a few months to a year or more. The program guidelines may require the mentor meet with their protégé regularly (e.g., weekly or monthly) or may leave it up to the individuals involved. Short-term

relationships with infrequent meetings can be expected to result in less intense personal relationships than in those that of longer duration with frequent and regular interactions.

A longer relationship allows time for mentors to provide both career-related and psychosocial functions, for trust to develop in the relationship, and for more information to be shared. As is generally the case with any skill, proficiency is enhanced with practice and experience. Consistent with this line of reasoning, longer mentoring relationships should result in more positive outcomes (Fagenson-Eland, Marks, & Amendola, 1997). Further, Kalbfleisch and Davies (1993) claimed that interpersonal communication between mentors and protégés plays a role in the protégé's success. By self-disclosing personal "tricks of the trade," promotion strategies, and techniques for dealing with difficult colleagues, mentors facilitate the development of valuable skills in the inexperienced protégé. The more a protégé interacts with his mentor, the greater the opportunity to discuss career goals and work-related issues, and in turn, to realize all of the benefits associated with having a mentor (Lyons & Oppler, 2004).

Length of mentoring relationships and frequency of interaction are two of the more frequently studied aspects of mentoring relationships. Clawson (1980), looking at informal mentoring relationships, showed that more effective mentors communicated more frequently with protégés than less effective mentors. Burke (1984), in a study of 80 participants in a management development course, reported significant correlations between the length of the mentoring relationship and both career-related ($r = .23, p < .05$) and psychosocial functions ($r = .20, p < .05$) provided by the mentor. This study did not differentiate between formal and informal mentoring relationships, but due to the date of the report, it is expected that the majority of these relationships were informal in nature.

Burke, McKeen, and McKenna (1993) found that frequency of interaction was significantly correlated with providing more psychosocial functions ($r = .41, p < .001$) and career development functions ($r = .56, p < .001$). However the length of the relationship was not related to the provision of either psychosocial or career-related functions. Again, no distinction was made between informal and formal mentoring relationships. Robinson, Tannenbaum, and Givens-Skeaton (2003), in a study that included protégés in both formal and informal relationships, found that while the frequency of interaction had a positive effect on the perception of the developmental experience ($F = 15.61, p < .01$), the length of the relationship was not a significant predictor of satisfaction with the relationship.

Researchers have also investigated the role of the length of mentoring relationships and frequency of interaction specifically within formal mentoring relationships. Chao, Walz, and Gardner (1992) found that the more time mentors and protégés spent together, the more likely they were to continue the relationship. In an evaluation of a formal peer mentoring program, Allen Russell, and Maetzke (1997) reported protégés who spent more time with their mentors were more satisfied with the mentoring relationship ($r = .51, p < .01$). Ragins, Cotton, and Miller (2000) found that protégés in programs that offered guidelines for the frequency of meetings reported that the programs were more effective than protégés who were in programs lacking such guidelines. Lyons and Oppler (2004) recently reported results of a study involving a formal mentoring program within a federal agency. Respondents who met with their mentors daily, weekly or monthly were more satisfied with the mentoring relationships

than were respondents who met with the mentor quarterly or less frequently ($t(128) = 7.12, p < .0001$).

One of the reasons interaction between the mentor and protégé is important is that information is consistently needed because change and uncertainty are common organizational realities. A mentoring relationship can provide a safe haven for seeking information or feedback, particularly for the protégé, and may be a valuable source of various types of information. As mentioned above, social identity processes are not only motivated by self-enhancement (the self-esteem hypothesis) but also by a self-evaluative motive to reduce subjective uncertainty (the uncertainty reduction hypothesis) (Hogg & Mullin, 1999). Uncertainty can be reduced through information seeking.

Individuals seek information either to actually gain more information about evaluations and expectations or they seek information for the impression the seeking makes on others (e.g. impression management). Impression management is an important motive behind much feedback seeking. Assertive impression management is based on self-enhancing motivation wherein one seeks to take advantage of a perceived opportunity to create a favorable impression on an important other (Tetlock & Manstead, 1985). More frequent interaction allows the protégé to manage impressions. This may allow for a closer, more favorable relationship to develop between mentor and protégé, leading to more positive outcomes.

Based on the general support for the more frequent interaction and longer duration of the mentoring relationship, the following hypotheses were proposed:

Hypothesis 8: Greater frequency of interaction between mentor and protégé within formal mentoring programs will be associated with more positive outcomes than in those with less frequent interaction.

Hypothesis 8a: Greater frequency of interaction between mentor and protégé within formal mentoring programs will be associated with more positive career outcomes than in those with less frequent interaction.

Hypothesis 8b: Greater frequency of interaction between mentor and protégé within formal mentoring programs will be associated with more positive personal outcomes than in those with less frequent interaction.

Hypothesis 8c: Greater frequency of interaction between mentor and protégé within formal mentoring programs will be associated with more positive organizational outcomes than in those with less frequent interaction.

Hypothesis 9: A longer length of the mentoring relationship within the formal mentoring program will be associated with more positive outcomes.

Hypothesis 9a: A longer length of the mentoring relationship within the formal mentoring program will be associated with more positive career outcomes.

Hypothesis 9b: A longer length of the mentoring relationship within the formal mentoring program will be associated with more positive personal outcomes.

Hypothesis 9c: A longer length of the mentoring relationship within the formal mentoring program will be associated with more positive organizational outcomes.

Index of Best Practices

In addition to the individual program characteristic, an index of best practices was constructed to determine if there is a constellation of program characteristics associated with effective formal mentoring programs. Successful mentoring programs may be related to a particular collection of program characteristics that support one another rather than any one particular program characteristic. Based on the empirical literature (Gray, 1988; Burke & McKeen, 1989; Murray, 2001; Zey, 1991; Cunningham, 1993, Godshalk & Sosik, 2000; Givens-Skeaton, Baetz, & D'Abate, 2003) and the prescriptive popular literature (Phillips-Jones, 1983; Zey, 1985; Benabou & Benabou, 1999; Geiger-Dumond & Boyle, 1995; Tyler, 1998; Klasen & Clutterbuck, 2002), the program characteristics discussed above are most often cited as necessary for an effective formal mentoring program. For this study, a program received one point for each of the characteristics that it included. While this approach captures the effect of multiple program characteristics, it is important to note that these characteristics and their relationship to career, personal, and organizational outcomes may be impacted by other organizational factors as well. These organizational characteristics have not been randomly assigned but rather the formal mentoring programs are nested within specific organizations with particular characteristics. These organizational characteristics were not captured by this study and constitute a limitation.

A similar index of best practices was constructed for use in a meta-analysis of youth mentoring programs (DuBois, Holloway, Valentine, & Cooper, 2002). Their results showed that programs that followed more of the best practices in their index were found to be a significant moderator of effect sizes ($Q(1, 59) = 13.65, p < .001$).

Additionally, sensitivity analysis showed that this result was not attributable to any single program characteristic included in the index. A similar outcome was expected with respect to adult formal mentoring programs, leading to the following hypotheses:

Hypothesis 10: Higher scores on the index of best practices will be positively related to the outcomes of the programs.

Hypothesis 10a: Higher scores on the index of best practices will be positively related to the career outcomes of the programs.

Hypothesis 10b: Higher scores on the index of best practices will be positively related to the personal outcomes of the programs.

Hypothesis 10c: Higher scores on the index of best practices will be positively related to the organizational outcomes of the programs.

Potential Moderators

When the magnitude of the unexplained variance in a relationship is large, the potential for moderators is present. Due to the variety of the formal mentoring programs expected within this systematic review, unexplained variance was possible and expected. Therefore, it was useful to develop hypotheses, a priori, to attempt to account for the unexplained variance. The first moderator investigated involves the composition of the mentoring dyad with respect to race and gender. The second moderator analysis focused on the supervisory status of the mentor. The final moderator explored the country location of the formal mentoring program. Additional moderators were investigated (e.g., industry setting, study design, publication type, publication date) but no a priori hypotheses were proposed.

Race and Gender

Since much of the early mentoring research, both qualitative and quantitative, involved white men almost exclusively, the issue of race and gender in mentoring has drawn a great deal of interest. Even after the passage of the Civil Rights Act of 1964, women and minorities continued to have difficulty moving up the executive career ladder. Mentoring researchers decided to see how mentoring relationships impacted women and minorities.

The evidence suggests that women and minorities benefit from mentoring relationships (Burke & McKeen, 1997; Riley & Wrench, 1985; Thomas, 2002). However, these groups do not participate in mentoring relationships as often. The Federal Glass Ceiling Commission (1995) reported fewer women have mentors and receive less management training. Several barriers, including lack of access to information networks, tokenism, stereotyping, socialization practices, and norms regarding cross-gender and cross-race relationships, may inhibit the development of mentorships for these individuals (Noe, 1988b; Greenhaus, Parasuraman, & Wormley, 1990).

Women and minorities may have limited contact with potential mentors. This may be due to a lack of knowledge of how to develop informal networks, a preference for interacting with others of similar status (based on race or gender) in the organization, or the intentional exclusion of women or minorities by those in higher positions within the organization. All of these can limit their participation in mentoring relationships.

Women and minorities may suffer from “treatment discrimination” within organizations. This occurs when the treatment of employees is based on their subgroup

membership rather than on their merit or achievement (Levitin, T., Quinn, R. P., & Staines, G. L., 1971). Such treatment discrimination may be due to the lack of senior members within the organization willing to mentor individuals from particular subgroups. Research shows that women, in particular, have fewer opportunities to develop mentoring relationships (Rosen, Templeton, & Kichline, 1981; McDonald & Hite, 1998; Lyness & Thompson, 2000). Treatment discrimination experienced by minorities may reduce their job performance and career prospects, since they would receive fewer opportunities to enhance work-related skills and develop supportive relationships within an organization than other employees would (Greenhaus, Parasuraman, & Wormley, 1990).

Women and minorities may be tokens within an organization, especially within the higher levels of business organizations. Tokens tend to be highly visible and to attract attention (Kanter, 1977). Jackson, Thoits, and Taylor (1995) found racial tokenism related to higher levels of depression and gender tokenism to be related to greater anxiety. Women and minorities deal with it by either overachieving or underachieving. They may accept distorted roles where they limit how much of themselves they put into the job, thereby limiting their informal interaction with other organizational members. Women and minorities may choose not to strive for the leadership jobs within the organization and therefore may not seek the necessary developmental opportunities (e.g., mentoring). Women and minorities may be given less visible positions that entail less risk and reduced responsibility (Ohlott & Ruderman, 1994; Lyness & Thompson, 1997). Potential mentors for female and minority employees may be dissuaded from developing a relationship because of the visibility of women and minorities in the organization. If the mentorship is unsuccessful, the manager may have a

greater likelihood of receiving adverse publicity that could hinder the attainment of his or her own career goals.

Research conducted in the early 1970s indicated the existence of a stereotype wherein managers possessed specific traits such as leadership ability, competitiveness, self-confidence, aggressiveness, and ambition, which women were believed not to possess. Heilman (1983) presented a lack-of-fit model to clarify this phenomenon. The greater the lack-of-fit, the greater the likelihood or magnitude of sex-biased judgments. This can negatively influence decisions on when and how women are selected for leadership training and development. Similarly, LMX theory (Dansereau, Graen, & Haga, 1975) suggests that leaders differentiate their subordinates in terms of competence, the extent to which they can be trusted, and their motivation to assume responsibility. Within business organizations, women and minorities may not be perceived as possessing desirable qualities such as leadership, assertiveness, competitiveness, and emotional control making them less likely to be considered in-group members. This could affect the selection of women as protégés in informal mentoring relationships and may also effect how women are treated within formal developmental mentoring programs.

Byrne's (1971) similarity-attraction paradigm suggests that mentors and protégés of the same race or gender will be more attracted to each other because of this similarity. Research indicates that men and women prefer interacting with members of the same sex in the work environment (e.g., Larwood & Blackmore, 1978). Tsui and O'Reilly used the term relational demography to refer to "the comparative demographic characteristics of members of dyads or groups who are in a position to engage in regular interactions" (1989, p.403). People routinely classify themselves and others based on social categories

such as age, race and gender. Research has consistently shown that individuals opt to interact with members of their own group rather than with members of other groups (Tajfel & Turner, 1986). These demographic characteristics can be used to infer similarity in attitudes, beliefs, or personality (Tsui, Egan, & O'Reilly, 1992). These similarities lead to attraction and increased interaction – both important in successful mentoring relationships. The effects of relational demography, although seldom explored in organizational settings, have been documented in marriage practices (Guttentag & Secord, 1983), public attitudes (Glenn, 1969), crime rates (Maxim, 1985), and mobility patterns (Stewman & Konda, 1983). It has been suggested that two of the dimensions particularly salient to the similarity-attraction aspect of the development of the mentoring relationship are race and gender. When looking at middle managers and their superiors in a Fortune 500 company, Tsui and O'Reilly (1989) found differences in education, sex, and race between members of superior-subordinate dyads to be associated with subordinates' heightened role ambiguity, unfavorable performance evaluations, and a lower level of attraction by the superiors to these subordinates.

Stangor, Lynch, Duan, and Glass, in an experimental study of self-categorization theory, reported that the results from five experiments were all "supportive of the hypotheses that perceivers spontaneously categorize people on the basis of their immediately apparent physical features. These feature included the social categories of race and sex..." (1992: p. 215). Age, sex, and race, because they are easily observable, are more accessible characteristics than education and tenure. The more readily accessible the social category, the more easily that category may be used for self-

categorization. The 'lack-of-fit' will also be most easily determined for those categories that are easily accessible.

Some organizations establish formal mentoring programs to enable women and minorities to participate in mentoring relationships. These programs, however, do not guarantee that productive mentoring relationships will be formed. When professional and personal dilemmas are quite different between the mentor and the protégé, interaction concerning how to manage these dilemmas is of limited value because empathy and joint problem solving are difficult to achieve. When neither individual sees central parts of the self embodied in the other, the individuals do not identify with each other. Kram (1985) touted the need for both interaction and identification but these are less likely in cross-gender relationships. While Kram (1985) was referring to cross-gender relationships, this argument would most likely apply to cross-race relationships as well.

Same-gender versus cross gender mentoring relationships

Several challenges may be unique to cross-gender relationships: sexual harassment, actual or perceived sexual involvement, and dominating mentors (Klasen & Clutterbuck, 2002). Clawson and Kram (1984) asserted that women face a double-edged sword when it comes to mentoring relationships – “unproductive closeness” and “unproductive distance.” Closeness can be unproductive if it leads to rumors of perceived sexual intimacy causing problems both in the workplace and at home. To compensate for the dangers of closeness, mentors or protégés may keep each other at arms length, failing to develop a productive relationship. Formal programs may ease some of the problems in cross-gender mentoring relationships. Since these relationships

are sanctioned and encouraged by the organization, male mentors may be more willing to take on female protégés (Klasen & Clutterbuck, 2002)

While the attraction-similarity paradigm suggests that same-sex mentoring relationships will be more successful than cross-gender relationships, there are opposing arguments. Existing literature supports the notion that women often distance themselves from other women in organizations. For instance, Kanter (1977) suggested that one strategy adopted by 'token' women who belong to work groups in which men set and control the dominant culture is to identify with men and turn against women who attempt to join the group. Gordon (1991) suggested that women in corporations who have strived to be treated as equals, and who have in large part succeeded by attaining high-level positions, tend to identify personally with men and the 'masculine' characteristics associated with men, and distance themselves from women and the 'feminine' characteristics associated with women. (Graves & Powell, 1995). This phenomenon, often referred to as the Queen Bee Syndrome, was expected to diminish as more women entered the senior ranks within organizations (Gallese, 1993). However, a recent study (Ellemers, van der Heuvel, de Gilder, Maass, & Bonvini, 2004) found female faculty members (as opposed to male faculty members) held more negative views of the career commitment of female doctoral students in scientific fields in which few women have advanced.

The similarity-attraction paradigm may not be applicable with respect to gender in power-differentiated cultures such as male-dominated occupations or male-dominated positions. In these types of organizational cultures, women may feel more comfortable with male mentors because of the perceived career benefit. Due to this perception,

female protégés could view their male mentors as being a facilitator for promotional chances, recommendations, and career guidance. Protégés may choose mentors, regardless of gender, who embody similar characteristics and values for high achievement and advancement (Lyons & Oppler, 2004).

The empirical research looking at same-gender as compared to cross-gender mentoring relationships is contradictory. Much of the research that supports same-gender mentoring relationships over cross-gender mentoring relationships is qualitative (Fitt & Newton, 1981; Kram, 1985; Zey, 1991). Several studies support the notion that same-gender dyads will be able to form a closer relationship. For example, Ragins and McFarlin (1990) found that same-gender pairs reported engaging in more social activities than mixed gender pairs. Turban, Dougherty, and Lee (2002) found it was more common for individuals to be in mentoring relationships with someone of the same gender. Additionally, same gender within the mentoring dyad was a significant predictor of psychosocial mentoring ($p < .05$).

In contrast, Alleman, Cochran, Doverspike and Newman (1984) demonstrated that mentors did not behave differently when their protégés were of the same gender than they did when their protégés were of the opposite gender. In two separate experiments involving college students, Olian, Carroll, Giannantonio, and Feren (1988) demonstrated that proteges were no more attracted to same-gender mentors than they were to opposite-gender mentors. Olian, Carroll, and Giannantonio (1993) found no difference between same-gender pairs and cross-gender pairs with respect to career and psychosocial functions.

Same-race versus cross-race mentoring relationships

The empirical evidence on same-race versus cross-race mentoring relationships is mixed. While some studies indicate a benefit (primarily with the provision of psychosocial functions) when protégés are paired with same-race mentors, others studies indicate that the racial composition of the dyad does not matter. No studies found evidence that more mentoring functions were provided in cross-race dyads than same-race dyads.

According to Kogler-Hill and Bahniuk (1998), both cross-race and same-race mentoring relationships provide career support. However, same-race relationships provide more psychosocial support and have shorter and easier initiation periods. A study of mentoring relationships within a public utility company concurred with these results, showing mentors provide more psychosocial functions when they are in same-race relationships (Thomas, 1990). Koberg, Boss, and Goodman (1998) only investigated psychosocial functions provided to protégés in the health care field. They found more psychosocial functions were provided by same-race mentors than by cross-race mentors. In a study of black protégés within the public accounting field, Viator (2001) found protégés with same-race mentors reported greater levels of role modeling and psychosocial support. Witt-Smith, Smith and Markham (2000), in a study of mentoring relationships of university faculty, found no significant differences in the amount of mentoring functions provided between same-race and cross-race dyads. Similarly, Turban, Dougherty, and Lee (2002) reported no significant differences in mentoring functions provided between same-race and cross-race mentoring relationships involving doctoral students and faculty advisors. Ensher and Murphy's (1997) was the

only study noted that reported greater career support for same-race pairs. None of these studies differentiated between formal and informal mentoring relationships, nor did they report on the outcomes of the relationships.

This overview of the mentoring literature and empirical research concerning both the gender and racial composition of the mentoring dyad was inconclusive, especially with respect to formal mentoring relationships. Due to the opposing theoretical arguments and the mixed research evidence, research questions rather than hypotheses were proposed:

Research Question 1a: Within formal mentoring programs, are same-gender mentoring relationships associated with more positive career, personal and organizational outcomes than are cross-gender mentoring relationships?

Research Question 1b: Within formal mentoring programs, are same-race mentoring relationships associated with more positive career, personal and organizational outcomes than are cross-race mentoring relationships?

Supervisory Status

If a mentor is the supervisor for the protégé, this may increase contact between mentor and protégé, and, in turn, augment the amount of mentoring received. As discussed above, more frequent interaction tends to lead to a closer relationship.

Additionally, supervisory mentors may have a better assessment of the career needs of their protégés than non-supervisory mentors and may be in a better position to provide career development functions because of proximity, contact, and control over work assignments (Ragins & Cotton, 1999). Supervisory mentors may have greater control

over assignments and developmental opportunities that may be career enhancing (Scandura, 1998).

Several studies have found such an effect. Ragins and McFarlin (1990) found supervisor-mentors provided more mentoring functions than non-supervisor mentors. The relationship was significant for three out of four of the mentoring career functions (sponsorship, protection and challenging assignments). Burke and McKeen (1997), looking at women protégés, found they generally received more mentoring functions when their mentor was their supervisor. Fagenson-Eland, Marks, and Amendola (1997) found that supervisor-mentors communicated more frequently with their protégés ($r = .58, p < .001$) and provided significantly more career functions ($r = .52, p < .01$) and psychosocial functions ($r = .46, p < .01$) than non-supervisory mentors. None of these studies differentiated between formal and informal mentoring relationships.

Conversely, some researchers have argued that the presence of a direct reporting relationship may hinder the development of a close mentoring relationship. Supervisors may hold back on providing psychosocial functions because they feel developing too close a relationship may conflict with their supervisory role (Ragins & Cotton, 1999). The supervisor may be too focused on the task at hand and may not provide a full range of mentoring functions, especially career related functions in which a mentor might encourage their protégé to seek a different position or a more challenging assignment. A mentor tends to look more toward the protégé's future, trying to provide a broad perspective of the organization. A supervisor serving as a mentor might be more focused on the day-to-day tasks of the job and may not express as broad a perspective as a mentor

who is from a different function or at a higher level in the organization (Stott & Walker, 1992).

Scandura (1998) claims that supervisors as mentors may exacerbate the potential for abuse within a mentoring relationship. The supervisory mentor is probably required to complete a formal performance appraisal of their subordinate-protégé. This direct reporting relationship may be on the protégé's mind when deciding whether or not to take their supervisory mentor's advice thereby altering the nature of the mentoring relationship. The subordinate-protégé knows that failing to meet their supervisor's expectations could ultimately result in job termination.

Tepper (1995) investigated differences in communication patterns between subordinate-protégés and non-subordinate protégés. When the protégé's mentor was not their supervisor, protégés tended to use a more personal communication style indicating the protégé's willingness to question and challenge their mentor in a non-threatening context. When the protégé's mentor was their supervisor, protégés tended to use more regulative and contractual tactics. Regulative tactics are those in which the subordinate limits their contact, communication and emotional displays with their superiors. Contractual tactics are those that involve formal communications that conform to role requirements and supervisor expectations. Tepper's study indicates supervisor-mentors may not be able to establish as close a relationship as non-supervisory mentors can. While this study highlights particular communication patterns in cases where mentors are supervisors, it does not necessarily follow that fewer mentoring functions are provided.

While there are opposing theoretical arguments with regard to supervisors serving as mentors, the empirical evidence tends to support the effectiveness of these types of

relationships primarily due to the greater interaction between the mentor and protégé.

Therefore, the following hypotheses were proposed:

Hypothesis 11: Supervisory status is a moderator in the relationship between the quality of a formal mentoring relationship and the outcomes. Specifically, protégés will experience more positive outcomes when their mentor is their supervisor than when their mentor is not their supervisor.

Hypothesis 11a: Protégés will experience more positive career outcomes when their mentor is their supervisor than when their mentor is not their supervisor.

Hypothesis 11b: Protégés will experience more positive personal outcomes when their mentor is their supervisor than when their mentor is not their supervisor.

Hypothesis 11c: Protégés will experience more positive organizational outcomes when their mentor is their supervisor than when their mentor is not their supervisor.

Country Location

Mentoring is not a developmental relationship that is unique to the United States; however, much of the mentoring research has been conducted within the United States. In their review of the literature on mentoring in business organizations, Hansford, Tennent, and Ehrich (2002) retrieved 151 quantitative and qualitative studies on the topic dating back to 1986. They reported that more than 70% of the studies had been conducted within the United States. The United Kingdom was second with 13.9% of the studies followed by Canada (3.3%), Australia (2.6%), Asia (2.6%), South Africa (1.3%), Saudi Arabia (0.7%), and India (0.7%).

No evidence was found that researchers have investigated any differences in formal mentoring relationships between countries. There is, however, some speculation that mentoring may be different. In her book, *The Corporate Connection*, Missirian (1982) states that the Japanese have institutionalized mentoring. While mentors in other countries may be slow to take on the added responsibility of becoming volunteer mentors, the Japanese show respect for age and experience. In Japanese organizations, taking on the responsibility of mentoring is considered an honor and a recognition of one's status within the organization.

Klasen and Clutterbuck (2002), in their book, *Implementing Mentoring Schemes: A Practical Guide to Successful Programs*, suggest that mentoring is different in Europe than it is in North America. They claim that within the United States, the focus of mentoring is on the career development of the individual protégé. In Europe, however, the mentoring relationship highlights the protégé's learning and development rather than the potential outcomes that might be achieved. The goals of mentoring are sponsorship, support, self-reliance and learning in both North America and in Europe. It is a difference in emphasis, with North Americans focusing primarily on the first goal and Europeans focusing on the last one. Since no empirical research was cited to support these claims, the following research question was proposed:

Research Question 2: Does country location moderate the relationship between mentoring relationship quality and their outcomes within formal mentoring programs?

Chapter 3

Methods

Meta-analysis was used to test the hypotheses proposed in the preceding chapter. Meta-analysis is a technique that allows individual study results to be aggregated while correcting for various artifacts that can bias relationship estimates. Meta-analysis is a research method whereby the information from multiple empirical studies are statistically combined so as to provide an estimate of the overall magnitude of the effect (Rothstein, McDaniel, & Borenstein, 2001). Several different analyses were conducted in order to test the proposed hypotheses. First, the differences in mentoring functions and mentoring outcomes between formal and informal programs were examined (hypotheses 1 and 2). Next, looking specifically at formal mentoring programs, the magnitude of the relationship between the quality of the mentoring relationship and its outcomes was estimated (hypothesis 3). Following that, the relationships between the individual program characteristics (as well as the index of best practices) and the program outcomes were analyzed (hypotheses 4 through 11).

Criteria for Inclusion and Exclusion

Studies had to meet the following criteria to be included in this systematic review:

Characteristics of the intervention:

The intervention for this study was the participation in a formal mentoring program. The interventions had to meet the three criteria used to define formal mentoring programs. The definitional criteria were as follows:

1. Programs must be sanctioned by the organization with one or more organizational members involved in the administration of the program.
2. A mentoring relationship must include one mentor and one protégé where the mentor is more experienced within the organization than the protégé.
3. The intent of the program is to develop the protégé either personally or professionally or both.

To test the first two hypotheses, a comparison to informal relationships needed to be included in the study. Those studies that included a comparison between formal and informal programs were analyzed separately. Studies testing the remaining hypotheses and research questions did not need to include any information regarding informal mentoring relationships.

Settings and Subjects:

The interventions had to involve adults as both mentors and protégés. Programs could be within any type of business or organization. Government, military, and religious organizations were included. Faculty and administrators within educational organizations were included. Research supports the use of studies from a variety of organization types since the process and outcomes of mentoring has been shown to be very similar. For example, Reich's (1986) research showed that mentoring resulted in increased promotions for lawyers, physicians, computer specialists, and managers. Fagan and Walter (1982) found police officers and nurses had similar relationships between mentoring and job satisfaction.

School settings were also included if the protégés were in graduate level schooling. Those in graduate schooling have made a significant commitment to a field of

study and perhaps to a profession or occupation. Mentoring relationships in these situations should parallel those within organizations. Undergraduate students, serving as either mentors or protégés, were not included since these relationships may be significantly different. Undergraduates are more focused on completing school rather than on their future occupation or profession. Studies using graduate students were initially analyzed separately to see if the results obtained are similar to the remaining studies. Programs conducted within any country were eligible for inclusion.

Types of Studies:

Correlational, experimental and quasi-experimental research designs were all included. It was expected that the majority of the studies retrieved would be correlational. Many studies were expected to be reports of program evaluations that collected data on outcomes solely from those who had participated in the program. Unless a study collects similar outcome data from non-participants, it cannot provide unambiguous conclusions about that particular program. This is noted, but it was anticipated that these studies would be used in this meta-analysis with respect to the analysis involving program characteristics.

Studies needed to provide a thorough description of the formal mentoring program so that program characteristics could be coded. In general, qualitative studies were excluded. However, studies in which quantitative data on programs and outcomes were collected via qualitative methods, such as interviews or focus groups, were considered for inclusion if the study reported the data from individual respondents. No dates were specified for inclusion as all studies on formal mentoring programs were

eligible to be included. It was believed that few studies conducted prior to 1970 would be retrieved. Studies had to be reported in English

Outcomes:

To test the proposed hypotheses, measures of both mentoring functions and career, personal and organizational outcomes were needed. Mentoring functions include both career functions and psychosocial functions as delineated by Kram (1985). There are several instruments that have been developed to measure these types of functions (e.g., Noe, 1988a; Ragins & McFarlin, 1990; Scandura, 1992). These measures have shown acceptable reliability and construct validity. In the absence of an objective measure of mentoring functions, a measure of relationship quality or relationship satisfaction was used.

All of the hypotheses required a measure of program outcomes. Program outcomes were defined in terms of benefits for the protégé since the purpose of formal mentoring programs was to develop the protégé either personally or professionally. While mentors and organizations often benefit from formal mentoring programs as well, benefits for protégés are the most often measured outcome. Outcomes were classified as career outcomes, personal outcomes or organizational outcomes. Career outcomes are those that pertain directly to the protégé's career such as promotion, compensation, career satisfaction and career commitment. Examples of personal outcomes include measures of self-esteem or self-confidence. Organizational outcomes may include organizational commitment, intention to stay with the organization, socialization, and organizational citizenship behavior. Table 1 below indicates how the outcomes that were expected to be present in studies would be categorized as either career, personal, or organizational.

Table 1: Categorization of Outcomes

Career Outcomes	Personal Outcomes	Organizational Outcomes
Promotion	Job Satisfaction	Organizational Commitment
Compensation	Self-esteem	Organizational Socialization
Career Satisfaction	Self-confidence	Procedural Justice
Career Commitment	Self-efficacy	Work Motivation
Career Success	Psychological Strain	Performance
Impact on Professional Life	Coping	Occupational Stress
Career Aspirations	Learning	Organizational Citizenship Behavior
Intent to Remain in the Profession	Mentor or Program Satisfaction	Retention/Attrition/Intent to Stay with the Organization
	Perceived Effectiveness of Formal Mentoring	Achievement of Program Goals
	Derive Pleasure from Work	

Other outcomes were found. How additional outcomes would be categorized was discussed with the individuals who participated in the reliability checks for the coding of studies that are discussed in the data evaluation section below. This ensured the reliability of the coding of the outcomes.

Studies had to report statistical data to allow for the calculation of an effect size. In this meta-analysis a standardized mean difference or a Pearson correlation coefficient, or other type of test statistics that could be converted into one of these, had to be reported. The standardized mean difference was the effect size statistic used for the meta-analyses involving the comparison of informal and formal mentoring relationships as well as the meta-analysis that looked at formal mentoring program characteristics. The correlation was used as the effect size statistic for the portion of the study that

investigated the relationship between mentoring functions and outcomes within formal mentoring relationships.

Search Strategy for Identification of Studies

An attempt was made to identify and retrieve the entire population of empirical studies that met the eligibility criteria specified above, both published and unpublished. First, an electronic search was conducted of the following databases: Academic Search Premier, Business Source Premier, PsychINFO, PsychArticles, Dissertation Abstracts, and Social Sciences Abstracts. These databases were proposed for this study because they include journals that publish peer-reviewed empirical research and they cover a wide range of studies conducted in a wide variety of organizations. Further, some of these databases include both published and unpublished studies. Electronic searches of the Defense Technical Information Center (DTIC) database and Educational Resources Information Center (ERIC) database were conducted to determine if there were any relevant studies in the military and education domains, respectively.

Additionally, several databases that include grey literature were searched. Grey literature includes unpublished or un-indexed reports generally not available commercially. The following types of documents are considered grey literature: theses, conference proceedings, internal reports, technical reports, working papers, business documents, and non-indexed journals. The greatest challenges involved with these items are (1) the process of identification since there is limited indexing, and (2) acquisition since availability is often uncertain. The databases searched for grey literature were System for Information on Grey Literature in Europe (SIGLE), Sociological Abstracts, and the Social Sciences Citation Index. In an effort to further identify unpublished

studies, a search of the internet was conducted using readily available search engines (e.g., scholar.google.com).

The primary search terms used included mentor and mentoring. Secondary terms included formal mentoring, planned mentoring, structured mentoring, role model, sponsor, and developmental relationship. It was expected that most studies would be identified by the term “mentor”. It was necessary to carefully screen these studies since the title and abstract did not always indicate whether or not a formal mentoring program was involved in the study.

A manual search aided in the inclusion of relevant studies that might not have been identified due to the keywords used in the electronic searches. Also, the manual search included studies from years not included in the electronic databases. Journals searched manually included Journal of Vocational Behavior, Journal of Career Development, and Career Development Quarterly. A snowballing procedure is a common technique used in the literature search. With a snowballing procedure, the reference lists in the studies meeting the inclusion criteria as well as review articles were scanned to identify other relevant studies.

Informal channels can provide leads to additional published and unpublished studies. With respect to this study, there were several individuals and organizations that might physically have studies or be able to point this researcher in the direction of relevant studies. In order to cover these informal sources, I attempted to make contact with these individuals and organizations via e-mail. Individuals contacted included noted academic researchers in the field of mentoring.

The researcher made the decision on whether or not retrieved studies were relevant to this study. Studies were initially evaluated based on report title with a bias toward including more studies rather than fewer. Abstracts were then be reviewed. Studies were excluded if they were clearly not empirical studies or if they did not involve formal mentoring relationships or programs. Again, the decision was biased toward retaining more studies rather than fewer. Full reports were then analyzed to ensure they met the inclusion criteria listed above. If the studies appeared to be relevant but data was missing, studies were retained and author(s) contacted to obtain the missing information.

Data Evaluation

Coding of Data:

Categories of information to be coded included: report identification, setting of the study (i.e., industry), subjects or participants (age, race, etc.), methodology, mentoring program characteristics, and statistical outcomes or effect sizes (Cooper, 1998). Some meta-analysts advocate coding the quality of the studies collected. Coding quality requires judgment on the part of the coder and can be difficult depending on what information is provided in the primary study. Quality of studies was not be coded here. Rather, study design was coded to determine if there were any differences between the types of study designs used.

To ensure coder reliability, two checks were done. First, three studies were randomly selected for coding by one or more doctoral students and by the researcher. The researcher gave the doctoral students a short training session to ensure they understood the coding instructions and coding form. The volunteers and the researcher

then coded the three studies. The results recorded on the coding forms were then be compared and a percentage of agreement statistic, also known as the agreement rate, was computed by dividing the total number of observations by the number of observations agreed upon (Cooper, 1998). An agreement rate above 80% was acceptable but any inconsistencies were discussed among the coding participants to ensure the researcher was coding reliably. If the agreement rate had been below 80%, the researcher would have modified the coding sheet and conducted this check again with three different studies. The researcher conducted the second coder reliability check. After approximately 50% of the studies had been coded, a sample of three previously coded studies was randomly selected and recoded. Again, a percentage of agreement statistic was computed. Any discrepancies were investigated and resolved (Lipsey & Wilson, 2001).

Missing Data:

Some research reports retrieved did not contain sufficient statistical outcome information needed. When this occurred, the researcher attempted to contact the primary author(s) of the study to retrieve the necessary information. If unable to retrieve the information, the study was eliminated. If certain study characteristic data were missing, studies were retained for the overall analysis but not included in subsequent moderator analyses if the pertinent data was not reported.

Independent Data Points:

The next step in the data evaluation stage was to ensure the data points were independent. This involved determining the unit of analysis to be used. Here, each study constituted the unit of analysis. Outcome measures were classified as either career

outcomes, personal outcomes or organizational outcomes. When a study included more than one outcome within a single category, those effect sizes were averaged prior to entry into the analysis. If a study reported more than one type of outcome, then an effect size was calculated for each outcome type. For example, a study might report both compensation (a career outcome) and organizational commitment (an organizational outcome). In an analysis that examined the different categories of outcomes, the sample contributed one effect size to estimates for each of the two relevant categories of outcome measures.

Outlier Analysis:

Once the effect sizes had been calculated and recorded, the data set was examined for outliers. Analysis for outliers is an essential step since outliers can distort results. One method for handling outliers is to simply eliminate them if it is believed that these outliers are not believed to be representative of study findings. Discarding data was not a desirable solution. Instead, the procedure known as Winsorizing was considered. Here, effect sizes more than three standard deviations from the mean of all the effect sizes are identified and recoded to a value at two standard deviations. This technique allows the discrepant values to be included in the analysis, and as a relatively large value, but they are not so extreme as to greatly distort the analysis (Lipsey & Wilson, 2001; Huffcutt & Arthur, 1995). Here, however, the purpose of the study was more exploratory in nature. For this reason, the Winsorizing technique was not used. Outliers were explored to ensure that the data extracted from the studies was properly entered into the analysis but no changes were made to the data.

Corrections for Statistical Artifacts:

Hunter and Schmidt (1990) encourage the adjustment of effect sizes for artifacts. These can include adjustments to individual effect sizes for (1) unreliability of the variables involved in the effect sizes, (2) for restrictions in range of the variables, (3) for the dichotomization of continuous variables, and (4) the imperfect construct validity of the measures used. The purpose of these adjustments is to estimate the magnitude of the relationship represented by the effect size under ideal conditions (Lipsey & Wilson, 2001). Other meta-analysts are wary of these corrections that are based on assumptions about the data. In this procedure, I have chosen to use Hedges and Olkin's (1985) procedures. Their procedures do not call for the correction of statistical artifacts. It was expected that not all of the data would be available in the retrieved studies to make artifact adjustments and, therefore, it will be better to leave all of effect sizes unadjusted. By not adjusting for artifacts, it was expected that the calculated mean effect sizes would underestimate their actual values.

Identification of Moderator Variables:

When considering the presence or absence of moderator variables, it is important to consider whether or not the individual effect sizes used to calculate the mean effect size are estimates of the same population effect size. This is known as the homogeneity of the effect size distribution. If a distribution of effect sizes is homogeneous, then the dispersion of the effect sizes around their mean is less than that expected from sampling error alone (Lipsey & Wilson, 2001).

It is necessary to conduct a homogeneity test that is based on the Q statistic. The formula for Q is

$$Q = \sum w_i (ES_i - ES_M)^2$$

where ES_i is the individual effect size for $i = 1$ to k (the number of effect sizes), ES_M is the weighted mean effect size of the k effect sizes, and w_i is the individual weight for ES_i . If Q is significant, using the critical value for a chi-square with $k - 1$ degrees of freedom, then the null hypothesis of homogeneity is rejected and this indicates a heterogeneous distribution that warrants additional analysis (Lipsey & Wilson, 2001). A heterogeneous distribution of effect sizes indicates the need to investigate moderators. Several potential moderators were identified a priori (gender, race, supervisory status and country location).

Software for Analysis

All coded data was entered into *Comprehensive Meta-Analysis, Version 2*, a meta-analysis software program. This software allows for the synthesis of data from multiple studies and provides a means for determining the source of variation when effect sizes differ significantly. Additionally, this software program calculated overall effect sizes for both fixed and random effects models. For this study, the random effects model was most appropriate since heterogeneity was expected within both mentoring relationships and mentoring programs. Effect sizes can be considered fixed when the only random influence on them are sampling error. Here, there were several other sources of error. Some of these sources included the mentoring programs, the mentors and the protégés involved in the mentoring relationships, and the organizations in which the mentoring programs were embedded.

Chapter 4

Results

Overview

The purpose of this study was to examine formal mentoring relationships and formal mentoring programs, with the goal of synthesizing what we currently know. As a result, this study can provide direction to future research so as to fill in the gaps in what we know. In addition, it provides information that may be useful to practitioners.

A profile of the studies included in and the findings of this meta-analysis on formal mentoring relationships and formal mentoring programs are described in this chapter. The first portion of this chapter provides the overall results of the literature search. Since three separate meta-analyses were required to answer the three separate research questions, more specific information on the studies included in each meta-analysis will be provided in their corresponding sections. First, results are first reported on those studies that compared informal mentoring relationships with formal mentoring relationships. Second, results are reported for studies that examined the relationship between mentoring functions and mentoring outcomes within formal mentoring relationships. Finally, results for the portion of the study that investigated the relationship between the program characteristics and program outcomes for formal mentoring programs are presented. The results section for each portion of the study includes a description of the studies in that portion presenting such information as publication type, publication year, industry, and location.

Results of the Literature Search

The electronic searches of the Academic Search Premier, Business Source Premier, PsychINFO, PsychArticles, Dissertation Abstracts, Social Sciences Abstracts, DTIC, ERIC, SIGLE, Sociological Abstracts, and the Social Sciences Citation Index databases returned thousands of potential studies. There were a large number of duplicate citations and citations on topics that were not specifically of interest to this meta-analysis. Overall, 1,124 studies were initially identified as being potentially relevant. Of these, 5% could not be retrieved either through the university library system or through attempts to contact the author(s). These were primarily conference papers or research reports. Twelve studies that were cited in other works could not be retrieved due to either incomplete or bad citations. Full abstracts were reviewed for the remaining studies and full text was retrieved if a decision on inclusion could not be made based solely on the abstract.

The manual search of the Journal of Vocational Behavior, the Journal of Career Development, and the Career Development Quarterly yielded one additional study beyond those retrieved by the electronic search. This study (Blau, 1988) was found in the Journal of Vocational Behavior. I believe the manual search resulted in only one study because the relevant studies from these three journals were captured by the electronic searches. Internet searches using scholar.google.net and other mentoring websites yielded two studies (Angell & Garfinkel, 2002; Jambor & Jones, 1997).

Several individuals with experience in the mentoring field were contacted as informal sources. The primary author of a literature review on mentoring in business that was conducted in the United Kingdom, as well as individuals from the academic, medical

and military domains were contacted. None of these contacts yielded any additional relevant studies.

Studies were rejected for a variety of reasons. Many articles retrieved were simply not empirical in nature. Some studies described some theoretical aspect of mentoring while others provided information on how to set-up a mentoring program. Others studies were qualitative in nature. These studies generally did not report data for individuals involved in mentoring relationships but rather discussed themes that emerged as a result of the qualitative research. Many empirical studies did not differentiate between formal and informal mentoring. Oftentimes these studies asked protégés to consider their most recent mentoring relationship and reported on the functions and outcomes of those relationships without determining whether those relationships were formed formally or informally.

Overall, 82 studies were found to be relevant to this study. While some studies were included in only one portion of the meta-analysis, others provided enough information to be used in more than one area. The date of the earliest study retrieved was 1981 (Atwood, 1981). The most recent was published in 2005 (Allen, Day, & Lentz, 2005). Appendix A provides the complete list of studies included. Superscripts are used to indicate in which of the three portions of this meta-analyses each study contributed data.

Two checks were conducted to ensure reliability in the coding of data from the studies. In the first check, two other doctoral students coded three different studies. Their coding was compared to this author's coding and a 90% agreement rate was achieved. This was an acceptable level of interrater agreement. All discrepancies were

discussed with the coding participants and discrepancies were resolved. The second check involved this author's recoding of three studies approximately halfway through the coding process. A 97.14% agreement rate was achieved indicating consistency in the author's coding.

Informal versus Formal Mentoring Relationships

This portion of the study focused on the first research question: Are formal mentoring relationships less effective in achieving desired outcomes than are informal mentoring relationships?

For this portion of the meta-analysis, 27 studies were found to be relevant. Subsequently, five studies were discarded. Three were discarded because the data could not be used as provided nor could it be transformed into a useable form. Two studies were found to use the same sample as another study. The duplications that were found and the courses of action taken were:

1. An author later published research first reported in a conference paper. The study as it appeared in the refereed journal was used in this meta-analysis (Fagan, 1988).
2. The authors published two articles based on the same sample. One article used a subset of the data used in the other article. The study that reported the full data set was included in this study (Allen & Eby, 2004).

One other group of authors also published two articles based on the same sample. In one article, mentoring functions were reported (Ragins & Cotton, 1999) while mentoring outcomes were reported in the second article (Ragins, Cotton & Miller, 2000). In this case both articles were kept with one being used in the part of the meta-analysis

dealing with functions while the other was used in the portion dealing with outcomes. All other studies represented independent samples.

While some studies reported data on both mentoring functions and mentoring outcomes, others reported on only one or the other. Table 2 summarizes the sources of the studies included in this portion of the meta-analysis. With respect to mentoring functions, 64% of the studies came from peer-reviewed journals, 32% came from dissertations, and 4% from conference papers. With respect to mentoring outcomes, 55% of the studies came from peer-reviewed journals while 45% came from dissertations.

Table 2: Sources of Studies Included in Comparison of Informal and Formal Mentoring Relationships

Source	Mentoring Functions	Mentoring Outcomes
Journals		
Academy of Management Journal	1	2
Accounting Horizons		1
Asia-Pacific Journal of Teacher Education		1
Career Planning and Adult Development Journal		1
Group and Organizational Management	1	1
Innovative Higher Education	1	
Journal of Applied Psychology	1	
Journal of Business and Entrepreneurship		1
Journal of Career Development	1	1
Journal of Organizational Behavior	1	1
Journal of Vocational Behavior	5	2
Personnel Psychology	1	1
Sex Roles	1	
Western Journal of Nursing Research	1	
Dissertations	7	10
Conference Papers		
American Educational Research Association	1	
Total	22	22

Results for Mentoring Functions

Twenty-two studies in this meta-analysis contributed a total of 22 effect sizes with respect to mentoring functions. Seventeen studies reported results for career functions, 18 studies reported results for psychosocial functions, and five studies reported results for overall quality of the relationship. All of these studies reported mentoring functions from the perspective of the protégé and were, therefore, self-report measures. Table 3 presents a summary of the studies included in the comparison of mentoring functions provided in informal mentoring relationships versus formal mentoring relationships.

Table 3: Summary of Studies Involving Mentoring Functions

Author	Publication Type	Date	Industry	Country	Career	Psychosocial	Overall Quality
Allen et al.	Journal	2005	Business	US	X	X	
Allen & Eby	Journal	2004	Business	US	X	X	
Bouquillon	Dissertation	2004	Mixed	US	X	X	
Boyle & Boice	Journal	1998	Education	US			X
Brashear Alejandro	Dissertation	1998	Business	Mixed	X	X	
Chao et al.	Journal	1992	Business	US	X	X	
Dimasi	Dissertation	1992	Gov't	US	X	X	
Dunlap & Pence	Conference paper	1990	Business	US	X	X	
Evans	Dissertation	2002	Business	US			X
Fagenson-Eland et al.	Journal	1997	Business	US	X	X	
Finkelstein et al.	Journal	2003	Education	US	X	X	X
Godshalk & Sosik	Journal	2003	Business	US	X	X	
Haggis	Dissertation	1997	Mixed	US	X	X	
Hayes	Journal	1998	Students	US			X
Lyon	Dissertation	2003	Business	Mixed	X	X	
Mullen & Noe	Journal	1999	Business	US	X	X	
Ragins & Cotton	Journal	1999	Business	US			X
Scandura & Williams	Journal	2001	Business	US	X	X	
Sosik & Godshalk	Journal	2000	Business	US	X	X	
Stave	Dissertation	2001	Student	US		X	
Tepper	Journal	1995	Mixed	US	X	X	
Turban et al.	Journal	2002	Student	US	X	X	

Table 4 presents the results of this portion of the meta-analysis. The number of studies used to calculate the mean effect size for each type of mentoring function is indicated by k . The table shows the total sample sizes for both the informal and formal groups (Total N). The standardized mean difference, d , was the effect size statistic used. The standard error (SE), 95% confidence intervals and p-values are also reported.

For this study, the random effects model was most appropriate since heterogeneity was expected within both mentoring relationships and within mentoring programs. I have included the results for both the fixed effects and random effects models for the reader's benefit. This allows those who are interested to see the differences between the fixed effects and random effects models. Additionally, the Q statistics measuring the amount of homogeneity among the studies were calculated and are presented in Table 5. Since the p-values were less than 0.05, this indicates the amount of variance in the effect sizes was not likely to be due solely to sampling error. This provided further support for the use of the random effects model.

Table 4: Mentoring Functions Effect Size Results

	k	Total N		d	SE	95% Confidence Interval		p-value
		Informal	Formal			Lower Limit	Upper Limit	
Career Functions								
Fixed Effect	17	1,979	755	0.399	0.046	0.309	0.490	0.000
Random Effect	17	1,979	755	0.411	0.114	0.187	0.635	0.000
Psychosocial Functions								
Fixed Effect	18	2,038	821	0.284	0.044	0.197	0.371	0.000
Random Effect	18	2,038	821	0.272	0.085	0.104	0.439	0.001
Overall Quality								
Fixed Effect	5	790	521	-0.005	0.065	-0.133	0.122	0.935
Random Effect	5	790	521	-0.031	0.185	-0.394	0.332	0.866

Hypothesis 1, which stated that a greater amount of career-related and psychosocial functions would be provided in informal mentoring relationships than in formal mentoring relationships, was supported. Looking at the results of the random effects model, the effect size for career-related functions was 0.411. According to the widely used convention for appraising the magnitude of effect sizes for behavioral science research, standardized mean difference effect sizes less than or equal to 0.20 are considered small, effect sizes equal to 0.50 are considered medium, and effect sizes greater than or equal to 0.80 are considered large (Lipsey & Wilson, 2001). Here, the effect size was in the medium range. Additionally, the 95% confidence interval did not contain zero further illustrating the robustness of this effect size. The effect size for psychosocial functions was smaller at 0.272, but still informal mentoring relationships provided significantly more of these types of functions than formal mentoring relationships as evidenced by the 95% confidence interval that did not contain zero.

Some studies used an overall quality measure of mentoring functions. As defined earlier in Chapter 2, quality of the mentoring relationship refers to the amount of mentoring functions provided. In some cases studies used instruments with established construct validity (e.g., Noe, 1988; Scandura, 1992) and simply combined the scores for career-related and psychosocial functions into a single score. Other studies used author-developed measures that did not report on the career-related and psychosocial functions separately. When looking at the overall quality measure of mentoring functions, the effect size was found to be -0.031, indicating that the two types of mentoring were not different in their overall quality. However, the confidence interval was large, due to the small number of studies in this category. Based on the current data, the effect could be as

large or small as +/- 0.30; it is clear more research is needed before we conclude there is no difference in overall quality of the two types of mentoring relationships.

Fail-safe N analysis was conducted for the results pertaining to the career-related functions and psychosocial functions. Orwin's approach determines the number of "missing" (unretrieved) studies with an average effect size of zero needed to reduce the observed mean effect size to a level specified by the researcher to be no longer theoretically or practically important (Lipsey & Wilson, 2001). Orwin's formula was used to determine the number of findings required to reduce the cumulated effect across studies to a trivial level. Results indicated that 682 studies with an effect size of zero would have to be added to the results of the retrieved findings for career-related functions to reduce the resulting mean effect size from 0.411 to 0.01. In other words, nearly 40 unretrieved studies must exist for each one retrieved in this study. This suggests that the current findings are very robust with respect to the effects of unretrieved studies. When the fail-safe N was calculated with the criterion effect size set to 0.10 (still a very low effect size) rather than 0.01, the results showed that 53 studies would be required. This equates to over three unretrieved studies for each study retrieved here – still a robust result.

Similarly, the result of the fail-safe N calculation for psychosocial functions, using a criterion effect size of 0.01, was 472 studies, or 26 unretrieved studies for every one retrieved here. Looking at the sensitivity of this analysis, the fail-safe N was recalculated using 0.10 rather than 0.01. In this case, 31 unretrieved studies with an average effect size of zero would be needed to reduce the observed mean effect size to 0.10. While it seems possible that another 31 studies might exist, it seems unlikely that

the average effect size of these studies would be zero. Therefore, these results appear fairly robust as well.

Mentoring Functions Moderator Analysis

To determine if moderators were present, Q statistics were calculated. These results are presented in Table 5. As shown below, the p-value was less than .05 in all three cases indicating heterogeneity among the studies and the likely presence of moderators.

Table 5: Mentoring Functions Q Statistics Test for Moderators

	Q Statistic	df	p-value
Career	93.951	16	0.000
Psychosocial	59.636	17	0.000
Overall	25.368	4	0.000

For this portion of the study, the following moderators were investigated: type of publication, date of publication by decade, and industry. For publication type, only studies from journals and dissertations were included. Since there was only one conference paper, it was not included in this moderator analysis. While location of the study was a moderator that was considered a priori, there were insufficient studies in locations outside the United States to conduct moderator analysis on this variable. Similarly, moderators on race, gender, and supervisory status were not investigated in this portion of the study. This data was not available in the majority of studies that compared informal and formal mentoring relationships, but more importantly, these moderators were of greater interest within formal mentoring relationships for the purposes of this study. These moderators will be addressed later in this chapter. Additionally, only the studies that measured career or psychosocial functions were used

in the moderator analysis. Those measuring overall quality were not included due to the small number of studies. Table 6 presents the results of the moderator analysis. Results for the random effects model are reported.

Table 6: Mentoring Functions Moderator Analysis

Moderator: Publication Type					
	<i>k</i>	<i>d</i>	SE	CI Lower Limit	CI Upper Limit
Career Functions					
Journal	11	0.311	0.081	0.151	0.470
Dissertation	5	0.698	0.341	0.030	1.366
Psychosocial Functions					
Journal	11	0.161	0.091	-0.017	0.338
Dissertation	6	0.501	0.160	0.186	0.815
Moderator: Date of Publication					
Career Functions					
1990s	8	0.530	0.237	0.066	0.994
2000s	9	0.293	0.081	0.135	0.452
Psychosocial Functions					
1990s	8	0.382	0.186	0.016	0.747
2000s	10	0.204	0.062	0.083	0.325
Moderator: Industry					
Career Functions					
Business	10	0.347	0.080	0.191	0.504
Education	2	0.190	0.189	-0.181	0.561
Psychosocial Functions					
Business	10	0.255	0.088	0.083	0.427
Education	2	0.018	0.161	-0.298	0.335
Students	2	0.306	0.138	0.037	0.576

With respect to publication type, a much larger magnitude effect size was found for dissertations than for journals for both career-related functions and psychosocial functions. This suggested that publication type might be a moderator. However, there was a great deal of overlap in the confidence intervals, which can be interpreted to mean that effects do not differ across subgroups. Hedges and Pigott (2004), though, have asserted that moderator analysis is similar to analysis of interactions in primary research. Just as tests for interactions are less powerful than tests for main effects, tests for

moderators tend to be less powerful than tests for the average effects size in meta-analysis.

Using the two-sided test for planned comparisons with a critical value of 95%, power was calculated using the formula $1 - \Phi(c_{\alpha/2} - \gamma/\sqrt{v_G}) + \Phi(-c_{\alpha/2} - \gamma/\sqrt{v_G})$, where $c_{\alpha/2}$ is the 100(1- $\alpha/2$) percent point of the standard normal distribution (e.g., $c_{\alpha/2} = \pm 1.96$ for $\alpha/2 = .05$), γ is the contrast parameter, v_G is variance for the groups being compared, and $\Phi(x)$ is the standard normal cumulative distribution function (Hedges & Pigott, 2004). Setting $\gamma = 0.25$ determines the power necessary to detect a difference between the groups of one fourth of a standard deviation. This value of γ was selected because this was thought to indicate a meaningful difference between the two groups. For a smaller difference to be detected, even greater power would be required. The calculated values for the variances were found to be $v_G = (1)^2(0.081)^2 + (-1)^2(0.341)^2 = 0.1229$ for career functions and $v_G = (1)^2(0.091)^2 + (-1)^2(0.160)^2 = 0.0339$ for psychosocial functions. For publication type, the power was then calculated to be 29% for career functions and 27% for psychosocial functions. These fall well below the 80% recommended by Cohen (1977). This indicated that moderators might not have reached statistical significance due to the low power.

Similarly, the magnitude of the effect sizes for publication date was greater for those studies published in the 1990s than those published more recently. This was true for both career and psychosocial functions but there was a much smaller difference for psychosocial functions. Again, there was a large overlap in the confidence intervals but the power was low here as well (17% for career functions and 25% for psychosocial

functions). It is difficult to draw firm conclusions regarding moderators when the power to detect them is so low.

With respect to industry, the moderator analysis suggested there was a greater amount of career and psychosocial functions provided in informal mentoring relationships as compared to formal mentoring relationships within business organizations. In other words, within business organizations, more mentoring functions (both career and psychosocial) were being provided through informal mentoring relationships as compared to formal mentoring relationships than in educational organizations. Within educational organizations, informal and formal mentoring relationships provided more similar amounts of career and psychosocial functions. The effect sizes found for business organizations were of a small magnitude ($d = 0.347$ for career functions and $d = 0.255$ for psychosocial functions). The corresponding values within educational organizations were $d = 0.190$ and $d = 0.018$. With respect to graduate students, the results suggested that more psychosocial functions were provided through informal mentoring relationships than through formal mentoring relationships ($d = 0.306$). Protégés in business organizations and graduate students seem to be receiving more mentoring functions when they participate in informal mentoring relationships. There was quite a large overlap in the confidence intervals again and power to detect moderators was low. For career functions, power was calculated to be 23%. For psychosocial functions, the power to detect moderators was calculated at 9%. Both of these were well below the recommended level of 80%. While industry may be a moderator here, more research is needed to reach a firm conclusion.

Results for Mentoring Outcomes

This next section reports the results of the meta-analysis where the mentoring outcomes were compared between formal and informal mentoring relationships.

Mentoring outcomes were categorized as either career, personal or organizational. Some studies reported more than one type of outcome. This is indicated in Table 7 below.

Table 7: Summary of Studies for Mentoring Outcomes

Author	Publication Type	Date	Industry	Location	Outcomes		
					Career	Personal	Organization
Allen et al.	Journal	2005	Business	US		X	
Barr	Dissertation	1998	Mixed	Unknown	X	X	
Bouquillon	Dissertation	2004	Mixed	US	X	X	X
Carter & Francis	Journal	2001	Education	Australia	X	X	
Chao et al.	Journal	1992	Business	US	X	X	X
Dreher & Chargois	Journal	1998	Mixed	US	X		
Evans	Dissertation	2002	Business	US	X	X	
Fagan	Journal	1988	Business	US		X	
Finkelstein et al.	Journal	2003	Education	US		X	
Godshalk & Sosik	Journal	2003	Business	US	X		
Haggis	Dissertation	1997	Mixed	US	X	X	
Haynes	Dissertation	2003	Education	US			X
Lowe	Dissertation	2003	Education	US		X	
Lyon	Dissertation	2003	Business	Mixed		X	
Mullen & Noe	Journal	1999	Business	US		X	
Olson	Dissertation	1984	Education	US	X	X	
Ragins et al.	Journal	2000	Business	US	X	X	X
Read	Dissertation	1997	Military	US			X
Stave	Dissertation	2001	Student	US		X	X
Tepper	Journal	1995	Mixed	US		X	
Viator	Journal	1999	Business	US		X	
Weis	Dissertation	1992	Students	US	X		

A total of 22 studies contributed effect sizes to this portion of the meta-analysis.

Personal outcomes were the most frequently reported with these types of outcomes being reported in over 77% of the studies. This was followed by career outcomes, which were included in 50% of the studies. Organizational outcomes were reported in 27% of the

studies. Some studies measured multiple outcomes within an outcome category. For example, Haggis (2000) measured three career outcomes: promotion, salary and career success. When more than one outcome within a single category was reported, the average of those outcomes was used. The Comprehensive Meta-Analysis software program conducted this function automatically when the appropriate option was selected.

Table 8 presents the results of this portion of the meta-analysis. The number of studies used to calculate the mean effect size for each type of mentoring outcome is indicated by k . The table shows the total sample sizes for both the informal and formal groups (Total N). The standardized mean difference, d , was the effect size statistic used. The standard error (SE), 95% confidence intervals, and p-values are also reported. Again, the results for both the fixed and random effects model are provided but readers should focus on the random effects model due to the heterogeneity in the studies. The calculated Q statistics reported are in Table 9 and these reveal that there was a lot of variation among the studies included in this portion of the meta-analysis.

Table 8: Mentoring Outcomes Effect Size Results

	k	Total N		d	SE	95% Confidence Interval		p-value
		Informal	Formal			Lower Limit	Upper Limit	
Career Outcomes								
Fixed Effect	11	1,626	767	0.114	0.048	0.019	0.209	0.019
Random Effect	11	1,626	767	0.166	0.099	-0.028	0.361	0.094
Personal Outcomes								
Fixed Effect	17	2,039	1,296	0.113	0.038	0.039	0.186	0.003
Random Effect	17	2,039	1,296	0.119	0.070	-0.018	0.256	0.089
Organizational Outcomes								
Fixed Effect	6	881	351	0.199	0.069	0.064	0.334	0.004
Random Effect	6	881	351	0.241	0.136	-0.026	0.508	0.077

Hypothesis 2a, which stated that a greater amount of career outcomes would be found in informal mentoring relationships than formal mentoring relationships, received partial support. Using the random effects analysis, the effect size found was 0.166, a small magnitude effect. While the effect was in the hypothesized direction, the confidence interval contained zero indicating that the career outcomes in formal versus informal mentoring relationships were not significantly different. The 95% confidence interval, however, resided more in positive territory than negative territory and, looking at the results of the fixed effects model, the confidence interval did not contain zero. Based on this data, it appears likely that there is a true effect of a small magnitude but I could not rule out that this was due to chance using the traditional value of alpha embodied in the 95% confidence interval. The exploratory nature of this study does not call for such a strict confidence interval and so a 90% confidence interval was calculated. The lower limit of the 90% confidence was found to be 0.003 and the upper limit was 0.329. This indicated that it was likely that greater career outcomes were realized in informal mentoring relationships than in formal mentoring relationships, but that the difference is small.

Hypothesis 2b, which stated that a greater amount of personal outcomes would be found in informal mentoring relationship than in formal mentoring relationships, also received some support. The effect size was 0.119, again, a very small magnitude effect size. The calculated effect size was in the hypothesized direction, but the confidence interval contained zero – though barely. Switching to a 90% confidence interval, the lower limit was found to be 0.004 and the upper limit was 0.234. This indicated a 90% probability that the population mean effect size was between these two values.

Therefore, we can be fairly confident that more personal outcomes were realized in informal mentoring relationships as compared to formal mentoring relationships. But again, the true relationship, if there is one, is very likely to be small.

Hypothesis 2c, which stated that a greater amount of organizational outcomes would be found in informal mentoring relationships than in formal mentoring relationships, received some support as well. A small magnitude effect size was found in the hypothesized direction ($d = 0.241$), but with a 95% confidence interval that included zero. Again, the confidence interval was skewed more in the positive direction than the negative direction. The 90% confidence interval of 0.017 to 0.465 indicated that greater organizational outcomes were likely to be realized in informal mentoring relationships than in formal mentoring relationships.

Fail-safe N analysis was conducted for the results pertaining to all three types of outcomes. Again using Orwin's approach (Lipsey & Wilson, 2001), and a criterion effect size of 0.01, results showed that approximately 172 studies with an effect size of zero would have to be added to the results of the retrieved findings for career outcomes to reduce the resulting mean effect size from 0.166 to 0.01. This equates to 15 additional studies for each study that was retrieved here. For personal outcomes, the fail-safe N was calculated to be 185 studies. For organizational outcomes, the fail-safe N was 139 studies. In all three cases, the results appear robust with respect to unretrieved studies.

Overall, Hypothesis 2 was partially supported for career, personal, and organizational outcomes. For all three types of outcomes, the effect sizes were in the hypothesized direction and the 90% confidence intervals did not contain zero.

Unfortunately, the number of studies included in each of the three groups is relatively small indicating a need for more research to confirm these findings.

Mentoring Outcomes Moderator Analysis

To determine if moderators were present, Q statistics were calculated. These results are presented in Table 9. As shown below, the p-value was less than or equal to 0.05 in all three cases indicating the presence of moderators.

Table 9: Mentoring Outcomes Q Statistics Test for Moderators

	Q Statistic	df	p-value
Career Outcomes	35.170	10	0.000
Personal Outcomes	45.086	16	0.000
Organizational Outcomes	16.688	5	0.005

For this portion of the study, these moderators were investigated: type of publication (journal versus dissertation), date of publication by decade, and industry. While location of the study was a moderator that was considered a priori, there were insufficient studies in locations outside the United States to conduct moderator analysis on this variable. Additionally, only the studies that measured career or personal outcomes were used in the moderator analysis. Those measuring organizational outcomes were not included due to the small number of studies. Also, if the sub-groupings by moderator did not include at least two studies, then those studies were not included. Table 10 presents the results of the moderator analysis.

For publication type, the mean effect sizes for studies involving dissertations were twice as large as those that came from journals for both career and personal outcomes. This suggested that publication type might be a moderator with greater effects reported in dissertations than in journals. For both types of outcomes, however, there was a great deal of overlap in the confidence intervals. Power to detect moderators was found to be

low (20% for career outcomes and 16% for personal outcomes), again indicating the need for more research.

Table 10: Mentoring Outcomes Moderator Analysis

Moderator: Publication Type					
	<i>k</i>	<i>d</i>	SE	CI Lower Limit	CI Upper Limit
Career Outcomes					
Journal	4	0.105	0.151	-0.192	0.401
Dissertation	6	0.247	0.164	-0.075	0.569
Personal Outcomes					
Journal	9	0.102	0.059	-0.015	0.218
Dissertation	8	0.244	0.145	-0.039	0.527
Moderator: Date of Publication					
Career Outcomes					
1990s	4	0.400	0.149	0.107	0.692
2000s	6	0.013	0.096	-0.175	0.201
Personal Outcomes					
1980s	2	0.045	0.363	-0.666	0.756
1990s	5	0.222	0.057	0.111	0.334
2000s	10	0.101	0.108	-0.111	0.313
Moderator: Industry					
Career Outcomes					
Business	4	0.059	0.144	-0.223	0.341
Education	2	-0.039	0.221	-0.471	0.394
Mixed	4	0.238	0.095	0.051	0.424
Personal Outcomes					
Business	7	0.054	0.085	-0.113	0.220
Education	4	0.181	0.278	-0.363	0.725
Mixed	4	0.213	0.089	0.038	0.387

For publication date, it was interesting to note that greater effect sizes were found for studies conducted in the 1990s as compared to those conducted in the 1980s or 2000s. This was particularly true for career outcomes where only a small overlap in the confidence intervals was found. Again, this can be considered only a tentative finding since the power to detect moderators was low (29%).

Looking at industry as a moderator, little difference was seen with respect to career outcomes. However, for personal outcomes, the magnitude of the effect size for

studies conducted in the education sector ($d = 0.181$) was found to be over three times the magnitude of the effect for studies conducted in the business sector ($d = 0.054$). In both cases though (in education and in business), effect sizes were small. Additionally, the confidence interval for studies in the education sector was quite large.

For all three potential moderators (publication type, publication date, and industry), there was a great deal of overlap in the confidence intervals making it difficult to draw firm conclusions about whether or not these moderators account for variation among the studies. Again, the power was low, making it difficult to detect moderators with respect to outcomes when comparing informal mentoring relationships and formal mentoring relationships.

Mentoring Functions and Mentoring Outcomes within Formal Mentoring Relationships

This portion of the study focused on the second research question: Within formal mentoring relationships, what is the relationship between the number and type of mentoring functions provided by the mentor and the outcomes realized by the protégé? Many studies reported information on either mentoring functions or mentoring outcomes within formal mentoring relationships but failed to report both. Nine studies were retrieved which reported both mentoring functions and outcomes but did not report the relationship between the two variables. Unfortunately, these studies had to be discarded, resulting in 27 studies. Subsequently, one study was rejected. Here, an author later published a journal article based on her dissertation. The dissertation was used since it contained a more complete data set (Whitaker, 1999).

Table 11 summarizes the sources of the 26 studies included in this portion of the meta-analysis. Seventy-three percent of the studies came from peer-reviewed journals while 27% came from dissertations. Fourteen different journals provided data for this portion of the meta-analysis with the Journal of Vocational Behavior providing the greatest number with four.

Table 11: Sources of Studies Included in Relationship Between Mentoring Functions and Mentoring Outcomes in Formal Mentoring Relationships

Source	Number of Studies
Journals	
Academic Psychiatry	1
Group and Organizational Management	1
Journal of Business and Psychology	1
Journal of Career Development	1
Journal of Management	1
Journal of Management Studies	1
Journal of Managerial Issues	1
Journal of Organizational Behavior	3
Journal of the American Academy of Business	1
Journal of Vocational Behavior	4
The Learning Organization	1
Lifelong Learning	1
Personnel Psychology	1
Western Journal of Nursing Research	1
Dissertations	7
Total	26

While some studies reported data on the relationship between both career and psychosocial mentoring functions and outcomes, others only reported on one or the other. Other studies did not report career and psychosocial functions separately, but rather reported mentoring functions using an overall quality measure. Studies are reported by career and psychosocial functions when this data was available. When this data was not available, then the overall measure of the functions provided was used. Additionally, the

data was broken down by the category of the outcome (career, personal, and organizational) in Table 12.

Table 12: Summary of Studies for Formal Mentoring Functions and Mentoring Outcomes

Author	Publication Type	Date	Industry	Country	Outcomes		
					Career	Personal	Organization
Allen et al.	Journal	2005	Business	US		X	
Allen & Eby	Journal	2003	Business	US		X	
Armstrong et al.	Journal	2002	Mixed	UK			X
Blau	Journal	1988	Business	US		X	X
Clark & Zimmer	Journal	1989	Education	US			X
Fagenson-Eland et al.	Journal	1997	Business	US		X	
Feldman et al.	Journal	1999	Students	Mixed	X	X	X
Finkelstein et al.	Journal	2003	Education	US		X	
Godshalk & Sosik	Journal	2003	Business	US	X		
Harper	Dissertation	1997	Business	Canada	X	X	X
Hatzopoulos	Dissertation	2003	Education	US		X	
Hayes	Journal	1998	Students	Not known		X	
Heimann & Pittenger	Journal	1996	Education	US		X	X
Joiner et al.	Journal	2004	Business	Australia	X		X
Lyon	Dissertation	2003	Business	US		X	
Mullen & Noe	Journal	1999	Business	US			X
Noe	Journal	1988	Education	US		X	
Orpen	Journal	1997	Business	UK			X
Raabe & Beehr	Journal	2003	Business	US		X	X
Schrum	Dissertation	2002	Education	US			X
Seibert	Journal	1999	Business	US		X	X
Shaffer	Dissertation	2003	Military	US		X	
Waters et al.	Journal	2002	Business	Australia	X	X	X
Whitaker	Dissertation	1999	Education	US	X	X	
White	Dissertation	1995	Education	US	X		X
Young & Perrewe	Journal	2000	Education	US		X	X

A total of 26 studies contributed effect sizes to this portion of the meta-analysis.

Personal outcomes were the most frequently reported with these types of outcomes being

reported in over 69% of the studies. This was followed by organizational outcomes, which were included in 58% of the studies. Career outcomes were reported in 27% of the studies. Some studies measured multiple outcomes within an outcome category. When more than one outcome within a single category was reported, the average of those outcomes was used. The Comprehensive Meta-Analysis software program conducted this function automatically when the appropriate option was selected. The results are presented below with the relationships between the different types of functions (career, psychosocial, overall quality) and the different types of outcomes (career, personal, organizational) reported separately. The correlation is the effect size statistic used in this portion of the study. Ninety-five percent confidence intervals and p-values are also reported. Career functions are reported in Table 13, psychosocial functions in Table 14, and overall quality in Table 15.

Table 13: Relationship between Career Functions and Outcomes in Formal Relationships

	<i>k</i>	Total N	Mean Correlation	95% Confidence Interval		p-value
				Lower Limit	Upper Limit	
Career Functions and Career Outcomes						
Fixed Effect	2	113	0.462	0.301	0.598	0.000
Random Effect	2	113	0.402	-0.042	0.713	0.074
Career Functions and Personal Outcomes						
Fixed Effect	9	702	0.352	0.284	0.416	0.000
Random Effect	9	702	0.274	0.046	0.476	0.019
Career Functions and Organizational Outcomes						
Fixed Effect	8	665	0.345	0.275	0.411	0.000
Random Effect	8	665	0.335	0.181	0.473	0.000

Hypothesis 3a stated that within formal mentoring relationships, there would be a positive relationship between career functions provided by the mentor and career outcomes attained by the protégé. Here the mean correlation, using the random effects model, was 0.402. Again the random effects model is appropriate due to variation in the studies beyond sampling error variance. The Q statistics, as shown in Table 16, confirmed this.

For correlation effect sizes, the widely used convention considers a correlation less than or equal to 0.10 to be small, a correlation of 0.25 to be of a medium magnitude, and a correlation greater than or equal to 0.40 to be large (Lipsey & Wilson, 2001). While the mean correlation here was of a large magnitude ($r = 0.402$), the 95% confidence interval was quite large and contained zero. The small number of studies contributed to the wide confidence interval, suggesting that the reason Hypothesis 3a was not fully supported was that the small number of studies did not permit an adequate test of this of this hypothesis. Using a 90% confidence interval, the lower and upper limits were found to be 0.034 and 0.674, respectively. This suggested that it is quite likely that there is a positive relationship between career functions and career outcomes in formal mentoring relationships.

Hypothesis 3b stated that there would be a positive relationship between the career functions provided and the personal outcomes attained. Here the effect size of 0.274 and the confidence interval, which did not contain zero, provided support for Hypothesis 3b, meaning there was a medium strength positive correlation between career functions provided by the mentors and the personal outcomes attained by the protégés within formal mentoring relationships.

Hypothesis 3c stated that within formal mentoring relationships, there would be a positive relationship between the career functions provided by the mentor and the organizational outcomes attained by the protégé. A medium effect size of 0.335 was obtained and the confidence interval did not contain zero, providing support for Hypothesis 3c. There was a medium magnitude positive correlation between the career functions provided by the mentors and the organizational outcomes achieved by the protégés in formal mentoring relationships.

Table 14: Relationship between Psychosocial Functions and Outcomes in Formal Relationships

	<i>k</i>	Total N	Mean Correlation	95% Confidence Interval		p- value
				Lower Limit	Upper Limit	
Psychosocial Functions and Career Outcomes						
Fixed Effect	2	113	0.241	0.056	0.410	0.011
Random Effect	2	113	0.241	0.056	0.410	0.011
Psychosocial Functions and Personal Outcomes						
Fixed Effect	9	702	0.425	0.369	0.479	0.000
Random Effect	9	702	0.386	0.154	0.577	0.000
Psychosocial Functions and Organizational Outcomes						
Fixed Effect	8	665	0.460	0.400	0.517	0.000
Random Effect	8	665	0.451	0.211	0.640	0.000

These results regarding the relationship between career functions and both personal and organizational outcomes appear robust with respect to publication bias. The fail-safe N calculations showed 237 studies with a mean effect size of zero would be required to reduce the relationship between career-related functions and personal

outcomes to a trivial level of 0.01. Similarly, 260 studies would be required regarding the relationship between career-related functions and organizational outcomes.

Hypotheses 3a, 3b, and 3c were all supported with respect to psychosocial functions with effect sizes of 0.241, 0.386, and 0.451 for career, personal and organizational outcomes, respectively. In all three cases the 95% confidence intervals did not contain zero. The relationship between psychosocial functions and both career outcomes and personal outcomes were of a medium magnitude while there was a large effect found with respect to organizational outcomes. This meant there was a medium strength correlation between the psychosocial functions provided by the mentors and both the career and personal outcomes attained by the protégés. Further, there was a large positive correlation between the psychosocial functions provided and organizational outcomes achieved within formal mentoring relationships.

Fail-safe N calculations resulted in 46 studies, 338 studies, and 353 studies for career, personal and organizational outcomes, respectively. The results regarding the relationship between psychosocial functions and career outcomes are not as robust as for other types of outcomes but this was expected since the calculated effect size was based on only two studies. When the criterion effect size was set to 0.10 rather than 0.01, calculations revealed that only 3 studies with an effect size of zero would be required to reduce the effect size to 0.10. Obviously, the results regarding the relationship between psychosocial functions and career outcomes in formal mentoring relationships should be interpreted cautiously.

Since several studies reported an overall quality measure for mentoring functions rather than breaking the functions out by career and psychosocial factors, the relationship

between overall quality and the three types of outcomes were also tested. The results are reported in Table 15 below.

Table 15: Relationship between Quality and Outcomes in Formal Relationships

	<i>k</i>	Total N	Mean Correlation	95% Confidence Interval		p-value
				Lower Limit	Upper Limit	
Quality and Career Outcomes						
Fixed Effect	5	1,008	0.223	0.163	0.281	0.000
Random Effect	5	1,008	0.357	0.118	0.577	0.004
Quality and Personal Outcomes						
Fixed Effect	9	1,082	0.441	0.391	0.488	0.000
Random Effect	9	1,082	0.501	0.357	0.612	0.000
Quality and Organizational Outcomes						
Fixed Effect	6	388	0.497	0.417	0.570	0.000
Random Effect	6	388	0.476	0.331	0.599	0.000

With respect to all three types of outcomes, effect sizes of a medium to large magnitude were discovered. This clearly indicated that higher quality formal mentoring relationships were associated with positive outcomes within organizations. This lent support to the claim that measures of overall quality are similar to the instruments used to measure career-related and psychosocial functions. Recall from Chapter 2 that higher quality mentoring relationships were characterized as those that provide a greater array of career and psychosocial functions. If the quality measures used in these studies do in fact correspond to the amount of career and psychosocial mentoring provided, this provides further support for Hypothesis 3.

Mentoring Functions to Mentoring Outcomes Moderator Analysis

To determine if moderators were present, Q statistics were calculated and are presented in Table 16. As shown below, the p-value was less than .05 in all but one case (psychosocial functions and career outcomes) indicating the presence of moderators.

Table 16: Mentoring Functions to Outcomes Q Statistics Test for Moderators

	Q Statistic	df	p-value
Career Functions and Career Outcomes	5.221	1	0.022
Career Functions and Personal Outcomes	71.116	8	0.000
Career Functions and Organizational Outcomes	28.882	7	0.000
Psychosocial Functions and Career Outcomes	0.000	1	0.989
Psychosocial Functions and Personal Outcomes	107.510	8	0.000
Psychosocial Functions and Organizational Outcomes	87.629	7	0.000
Quality and Career Outcomes	46.292	5	0.000
Quality and Personal Outcomes	52.125	8	0.000
Quality and Organizational Outcomes	12.244	5	0.032

For this portion of the study, the following moderators were investigated: type of publication (journal versus dissertation), date of publication by decade, industry, and whether or not the protégés were newcomers to the organization. While location of the study was a moderator that was considered a priori, there were insufficient studies in locations outside the United States to conduct moderator analysis on this variable. Also, if the sub-groupings by moderator did not include at least two studies, then those studies were not included in the moderator analysis. Table 17, Table 18, Table 19, and Table 20 present the results of the moderator analysis for publication type, date, industry, and newcomer status, respectively.

Table 17: Function-to-Outcome Relationship Moderator Analysis: Publication Type

	<i>k</i>	Mean Correlation	CI Lower Limit	CI Upper Limit
Quality and Career Outcomes				
Journal	3	0.285	0.019	0.334
Dissertation	2	0.431	-0.244	0.824
Quality and Personal Outcomes				
Journal	6	0.397	0.285	0.499
Dissertation	3	0.640	0.343	0.820

Moderators are most easily determined by looking at the 95% confidence intervals. If a large overlap between the confidence intervals is found, then the less likely it is that the variable can be considered a moderator. The small number of studies in many of the sub-groupings contributed to the wide confidence intervals, making moderator detection difficult. Only one clear moderator was discovered to be operating. This was found with respect to industry in the relationship between the overall quality of the relationship and career outcomes (See Table 19). The results indicated there was a stronger relationship between quality of the relationship and career outcomes in business settings than in educational settings. This was a very tentative finding, however, since only two studies were included in each sub-grouping.

Looking at the results for the moderator analysis for publication type in Table 17, dissertations provided a greater effect size than journals for the relationship between the overall quality of the relationship and both career and personal outcomes. For career functions, however, there was a large overlap in the confidence intervals. For personal outcomes the overlap was not as great suggesting type of publication might be a moderator in the relationship between the overall quality of the formal mentoring relationship and the personal outcomes achieved with dissertations providing greater

effect sizes. Dissertations also provided greater effect sizes than journals in the earlier portion of the meta-analysis that compared informal and formal mentoring relationships.

Table 18: Function-to-Outcome Relationship Moderator: Date of Publication

	<i>k</i>	Mean Correlation	CI Lower Limit	CI Upper Limit
Career Functions and Personal Outcomes				
1990s	2	-0.010	-0.250	0.231
2000s	6	0.391	0.152	0.587
Career Functions and Organizational Outcomes				
1990s	2	0.205	-0.216	0.562
2000s	5	0.311	0.142	0.462
Psychosocial Functions and Personal Outcomes				
1990s	2	0.426	0.244	0.578
2000s	6	0.416	0.105	0.533
Psychosocial Functions and Organizational Outcomes				
1990s	2	0.435	0.225	0.586
2000s	5	0.366	0.027	0.629
Quality and Personal Outcomes				
1990s	5	0.490	0.312	0.635
2000s	3	0.561	0.249	0.767

Slightly overlapping confidence intervals suggested that there might be a moderator operating with respect to date of publication for career functions and personal outcomes. Here, it appeared there was a medium strength relationship between these two variables for studies conducted in the current decade ($r = 0.391$) but a virtually nil correlation for studies conducted in the 1990s ($r = -0.01$). Again, low power (14%) made it difficult for moderators to reach statistical significance.

Turning to industry as a moderator, the results indicated that there was a stronger relationship between both career functions and organizational outcomes and between psychosocial functions and organizational outcomes within formal mentoring

Table 19: Function-to-Outcome Relationship Moderator: Industry

	<i>k</i>	Mean Correlation	CI Lower Limit	CI Upper Limit
Career Functions and Personal Outcomes				
Business	6	0.230	-0.059	0.483
Education	3	0.352	-0.128	0.699
Career Functions and Organizational Outcomes				
Business	4	0.154	-0.085	0.376
Education	3	0.440	0.251	0.597
Psychosocial Functions and Personal Outcomes				
Business	6	0.470	0.060	0.593
Education	3	0.441	-0.048	0.759
Psychosocial Functions and Organizational Outcomes				
Business	4	0.231	-0.151	0.552
Education	3	0.630	0.342	0.810
Quality and Career Outcomes				
Business	2	0.594	0.310	0.781
Education	2	0.120	0.048	0.190
Quality and Personal Outcomes				
Business	3	0.490	0.272	0.661
Education	3	0.463	0.197	0.664
Students	2	0.385	0.295	0.468

relationships. In both cases the effect sizes within the education sector were almost three times as large as the effect sizes within the business sector. There was only a small overlap in the 95% confidence intervals in these two cases. Again the power was too low for them to have a fair chance to reach statistical significance. As discussed earlier, industry was found to be a moderator in the relationship between the quality of the relationship and career outcomes with a stronger relationship found in the business sector

than in the education sector. Looking at newcomer status, career functions, psychosocial functions and overall quality seemed to have a more positive relationship to organizational outcomes when the protégés were not newcomers to the organization than when they were newcomers. In all three cases the effect sizes for non-newcomers were large while the effect sizes for newcomers were only of a small to medium magnitude. There was only a small overlap in the 95% confidence intervals in these three cases. A tentative conclusion that newcomer status may be a moderator in the relationship between mentoring functions and organizational outcomes is offered.

Table 20: Function-to-Outcome Relationship Moderator: Newcomer Status

	<i>k</i>	Mean Correlation	CI Lower Limit	CI Upper Limit
Career Functions and Personal Outcomes				
Newcomers	2	0.150	-0.231	0.491
Non-newcomers	7	0.380	0.035	0.540
Career Functions and Organizational Outcomes				
Newcomers	2	0.081	-0.095	0.345
Non-newcomers	6	0.408	0.257	0.541
Psychosocial Functions and Personal Outcomes				
Newcomers	2	0.434	0.271	0.572
Non-newcomers	7	0.377	0.086	0.609
Psychosocial Functions and Organizational Outcomes				
Newcomers	2	0.204	-0.180	0.535
Non-newcomers	6	0.517	0.255	0.708
Quality and Career Outcomes				
Newcomers	3	0.203	0.052	0.344
Non-newcomers	2	0.594	0.310	0.781
Quality and Personal Outcomes				
Newcomers	7	0.490	0.335	0.619
Non-newcomers	2	0.542	0.242	0.749
Quality and Organizational Outcomes				
Newcomers	3	0.465	0.261	0.827
Non-newcomers	3	0.472	0.188	0.684

Overall Hypothesis 3 received substantial support. There was considerable evidence that there was a positive relationship between both types of mentoring functions and all three types of outcomes. While the effect sizes ranged from small to medium for career functions, the effect sizes ranged from medium to large for psychosocial functions. Additionally, large effect sizes were found for the relationship between quality and all three types of outcomes.

A Priori Moderators

Research Questions 1a and 1b dealt with same-gender and same-race participants versus cross-gender and cross-race participants in mentoring relationships. These questions could not be tested. Several studies reported the number of same-gender versus cross-gender mentoring dyads but did not report results for each of these subgroups. Other studies (Allen, Day, & Lentz, 2005; Allen & Eby, 2003; Feldman, Folks, & Turnley, 1999; Godshalk & Sosik, 2003; Noe, 1988) used a dummy coded variable for dyad gender composition (e.g., 0 = same-gender, 1 = cross-gender) and/or dyad race composition (e.g., 0 = same-race, 1 = cross-race) as well as formality of the relationship (e.g., 0 = formal mentoring relationship, 1 = informal mentoring relationship). These dummy coded variables along with variables on mentoring functions and mentoring outcomes were included in a correlation matrix but the data for the relationships of interest could not be determined.

Hypothesis 11 stated that protégés would experience more positive outcomes when their mentor was their supervisor than when their mentor was not their supervisor. While several studies reported the percentage of mentors who were or were not their

protégés' supervisor, results in terms of mentoring functions and mentoring outcomes were not reported. Other studies (Fagenson-Eland, Marks, & Amendola, 1997; Finkelstein, Allen, & Rhoten, 2003) provided correlation matrices where supervisory status and formality of the mentoring relationship were dummy coded along with correlations of mentoring functions and mentoring outcomes. It was not possible to untangle these correlations to obtain effect sizes for the relationship of interest. Hypothesis 11 could not be tested.

Research Question 2 concerned the effect of country location on the formal mentoring relationship. This question could not be tested due to the small number of studies retrieved that were conducted outside the United States. Overall, only five studies conducted outside of the United States that contained data relevant to this portion of the meta-analysis were retrieved. Two were conducted in Australia, two in the United Kingdom, and one in Canada. While every attempt was made to conduct a thorough search, the databases used in the search strategy tended to favor studies conducted in the United States.

Formal Mentoring Program Characteristics

The final portion of this chapter reports on the meta-analysis that examined the relationship between the program characteristics of formal mentoring programs and the outcomes achieved. It addresses the third research question: What is the relationship between specific program characteristics and the career, personal and organizational outcomes within formal mentoring programs?

For this portion of the meta-analysis, 32 studies were found to be relevant. Studies were rejected primarily because of insufficient evaluation data. Most often studies reported a post-only measure for a single group that participated in the formal mentoring program. Mentoring program evaluation data was often very sketchy with means reported without standard deviations. Table 21 summarizes the sources of the studies included in this portion of the meta-analysis. In this portion of the study, 62.5%

Table 21: Sources of Studies Included in Formal Mentoring Program Characteristics

Source	Number of Studies
Journals	
Academic Psychiatry	1
Action in Teacher Education	1
Community College Journal of Research and Practice	1
Innovative Higher Education	1
International Journal of Social Work Education	1
Journal of Continuing Education in Nursing	1
Journal of Education Research	1
Journal of Nursing Education	4
Journal of Nursing Staff Development	1
Journal of Vocational Behavior	1
Journal of Women and Minorities in Science and Engineering	1
Manager's Magazine	1
Medical Teacher	1
Mentoring International	1
Nursing Connections	1
Teaching and Teacher Education	2
Book Chapter	1
Dissertations	6
Research Reports	4
Conference Papers	
Mid-Western Education Research Association	1
Total	32

of the studies came from peer-reviewed journals, 19% came from dissertations, 12.5% from research reports, 3% from book chapters, and 3% from conference papers.

While some studies reported data for one outcome, others reported data for multiple outcomes. Again, the outcomes have been categorized by type (career, personal, and organizational). This information, along with other descriptive information on the studies included in this portion of the meta-analysis, is presented in Table 22 below. Each of the studies provided one effect size except for Evertson and Smithey (2000), which provided two. Additionally, in two cases it was necessary to use two studies to gather the necessary information with regard to this portion of the study. Specifically, two studies reported on the outcomes of the formal mentoring program (Boyle & Boice, 1998; Odell & Ferraro, 1992) while two other studies provided detailed information on the corresponding program characteristics (Boice, 1990; Odell, 1990).

Results for Program Characteristics

32 studies in this meta-analysis contributed a total of 33 effect sizes with respect to the relationship between formal mentoring program characteristics and outcomes achieved from the mentoring program. Seven studies reported results for career outcomes, eight studies reported results for personal outcomes, and 23 studies reported results for organizational outcomes. When more than one outcome within a single category was reported, the average of those outcomes was used. The Comprehensive Meta-Analysis software program conducted this function automatically when the

Table 22: Summary of Studies for Formal Mentoring Program Characteristics

Author	Pub Type	Date	Industry	Country	Outcomes		
					Career	Personal	Organization
Alleman	Journal	1989	Business	Not known			X
Angell & Garfinkel	Research Report	2002	Education	US			X
Atwood	Dissertation	1981	Medical	US			X
Benson et al.	Journal	2002	Education	US			X
Boyle & Boice	Journal	1998	Education	US			X
Bremer	Dissertation	2002	Gov't	US		X	
Brown	Journal	1990	Business	US			X
Chiang	Conference Paper	1989	Education	US		X	
Cox	Book Chap	1995	Education	US	X		
Craver & Sullivan	Journal	1985	Medical	US		X	X
Dobbs	Journal	1988	Students	US		X	
Evertson & Smithey	Journal	2000	Education	US			X
Fox et al.	Journal	1998	Education	US			X
Gardiner	Research Report	1999	Education	Australia	X	X	
Hamilton et al.	Journal	1989	Education	US		X	X
Jairath et al.	Journal	1991	Medical	Not known			X
Jambor & Jones	Research Report	2003	Medical	US			X
Kelly & Lauderdale	Journal	1999	Gov't	US	X		X
Klug & Salzman	Journal	1991	Education	US			X
Laschinger & MacMaster	Journal	1991	Medical	Canada			X
Montelone et al.	Journal	2003	Education	US	X		
Odell & Ferraro	Journal	1992	Education	US			X
Scales et al.	Journal	1993	Students	US			X
Scheetz	Journal	1989	Students	US			X
Scott	Research Report	1998	Education	Canada			X
Seibert	Journal	1999	Business	US	X	X	
Shelton	Dissertation	1982	Business	US	X		
Smith, A.L.	Journal	1990	Education	US			X
Smith, L.A.	Dissertation	1985	Medical	US	X		
Stromei	Dissertation	1998	Business	US			X
White	Dissertation	1995	Education	US			X
Woullard & Coats	Journal	2004	Education	US		X	

appropriate option was selected. Table 23 presents the results of this portion of the meta-analysis. The number of studies used to calculate the mean effect size for each type of mentoring outcome is indicated by k . The standardized mean difference, d , was the effect size statistic used. The standard error (SE), 95% confidence intervals and p-values are also reported.

Table 23: Formal Mentoring Program Characteristics Effect Size Results

	k	d	SE	95% Confidence Interval		p-value
				Lower Limit	Upper Limit	
Career Outcomes						
Fixed Effect	7	0.244	0.082	0.083	0.404	0.003
Random Effect	7	0.181	0.164	-0.141	0.502	0.270
Personal Outcomes						
Fixed Effect	8	0.069	0.037	-0.004	0.142	0.064
Random Effect	8	0.356	0.326	-0.284	0.996	0.275
Organizational Outcomes						
Fixed Effect	23	0.618	0.042	0.536	0.700	0.000
Random Effect	23	0.593	0.171	0.258	0.927	0.001

These results suggest that formal mentoring programs produced a positive result with respect to all three types of outcomes. Based on the random effects model results, there is a medium effect size for organizational outcomes ($d = 0.593$) versus small effect sizes for career and personal outcomes ($d = 0.181$ and $d = 0.356$, respectively). While the 95% confidence intervals contained zero for career outcomes and personal outcomes, the 95% confidence interval did not contain zero for organizational outcomes, and dropping to the 90% confidence intervals did not alter this result for career and personal outcomes. This suggested that organizational outcomes, as compared to career and personal outcomes, were stronger for those participating in formal mentoring programs. Only

seven studies reported career outcomes and eight studies reported personal outcomes while 23 studies reported organizational outcomes. It was clear that organizations that have instituted formal mentoring programs were interested in measuring their program's effect on their organization.

Next, differences between the programs with varying characteristics were investigated. The characteristics examined were (1) the process by which mentors and protégés are matched, (2) voluntary versus involuntary participation in the mentoring program, (3) purpose of the program, (4) use of training and orientation, (5) frequency of interaction between mentor and protégé, and (6) duration of the mentoring relationship.

Matching

Matching refers to how the mentor-protégé dyad was formed. Mentors and/or protégés may be involved in the process or the organization may determine how the dyad is formed. The results for the mentoring outcomes achieved with respect to how the mentoring relationship was formed are reported in Table 24. Personal outcomes are not reported since fewer than two studies were available.

Table 24: Relationship Between Matching and Outcomes

	<i>k</i>	<i>d</i>	SE	CI Lower Limit	CI Upper Limit
Career Outcomes					
Mentor and/or Protégé	3	0.221	0.252	-0.273	0.715
Organization	4	0.145	0.273	-0.391	0.681
Organizational Outcomes					
Mentor and/or Protégé	3	0.901	0.253	0.405	1.398
Organization	16	0.649	0.191	0.275	1.024

Hypothesis 4a stated that formal mentoring programs that allowed the mentor and/or protégé to be involved in the selection of their partner would be associated with

more positive career outcomes. Here the findings were in the hypothesized direction. The magnitude of the effect size was small for both types of matching ($d = 0.221$ when the mentor or protégé were involved and $d = 0.145$ when the organization made the matching decision). However, there was a large overlap in the 95% confidence intervals, making it difficult to draw a firm conclusion regarding this program characteristic. Power for the detection of the effects of the different types of matching was very low (10%), however, so this hypothesis did not receive a fair test.

Hypothesis 4b, involving personal outcomes, could not be tested due to an insufficient number of studies. Hypothesis 4c involved organizational outcomes. Here a large magnitude effect size ($d = 0.901$) was found for organizational outcomes when the mentor and/or protégé were involved in the selection of their mentoring partner. When the mentoring dyad was formed by the organization only a medium effect size ($d = 0.649$) was detected. This suggested that greater organizational outcomes might be reached when the mentor and/or protégé participate in the matching process. Given that there is a fairly large overlap in the 95% confidence intervals, a firm conclusion on this hypothesis could not be reached due to insufficient power to detect moderators (12%). It is safest to conclude that hypothesis 4c received partial support.

Voluntary versus Involuntary Participation

Studies were coded as voluntary if either the mentor or the protégé or both volunteered to participate in the mentoring program. Studies were coded as involuntary if participation was required by both the mentor and the protégé. It is useful to note that in several studies within the education sector, monetary stipends or class release time were used as incentives to entice people to volunteer to serve as mentors. Similar

incentives were not noted in other sectors. The results for the mentoring outcomes achieved with respect to the voluntary or involuntary nature of participation in the mentoring relationship are reported in Table 25.

Table 25: Relationship Between Voluntary Participation and Outcomes

	<i>k</i>	<i>d</i>	SE	CI Lower Limit	CI Upper Limit
Career Outcomes					
Voluntary	5	0.036	0.204	-0.364	0.435
Involuntary	2	0.526	0.269	-0.001	1.053
Personal Outcomes					
Voluntary	6	0.067	0.284	-0.490	0.624
Involuntary	2	0.985	0.435	0.132	1.838
Organizational Outcomes					
Voluntary	18	0.629	0.185	0.266	0.991
Involuntary	5	0.640	0.443	-0.228	1.508

Hypothesis 5a stated that voluntary participation in formal mentoring programs by mentors and protégés would be associated with more positive career outcomes than in those programs in which participation was mandated. Here, the results were not in the hypothesized direction. There was a greater effect size when participation in the formal mentoring program was required by both the mentor and protégé ($d = 0.526$) than when participation by at least one member of the pair was voluntary ($d = 0.036$).

Hypothesis 5b involved personal outcomes and, again, the effect size was greater for involuntary participation ($d = 0.985$) than voluntary participation ($d = 0.067$).

Hypothesis 5c involved organizational outcomes. Here, the results were greater for involuntary participation than for voluntary participation but only slightly and the confidence intervals are completely overlapping. Hypotheses 5a and 5b were definitely not supported since the effects found were not in the predicted direction. While the results for hypothesis 5c were not in the predicted direction, the similar magnitude in

effect sizes, as well as the largely overlapping confidence intervals, provided, at best, minimal support for this hypothesis.

Program Purpose

Hypothesis 6 stated that formal mentoring programs with an explicitly stated purpose would be associated with more positive outcomes than would programs without a stated purpose. A program purpose was stated in all but one study (Dobbs, 1988) so this hypothesis could not be tested. Instead, specific program purposes were investigated to determine if certain program purposes had stronger relationships to mentoring outcomes. The most frequently mentioned purposes were (1) to improve protégé performance, (2) to socialize newcomers to the organization, and (3) to increase retention. Career outcomes were not tested due to an insufficient number of studies. The results of this analysis are provided in Table 26.

Table 26: The Relationship Between Program Purpose and Mentoring Outcomes

	<i>k</i>	<i>d</i>	SE	CI Lower Limit	CI Upper Limit
Personal Outcomes					
Retention	4	0.255	0.448	-0.623	1.134
Socialization	2	0.273	0.354	-0.421	0.967
Organizational Outcomes					
Improve Performance	7	0.447	0.320	-0.180	1.073
Retention	10	0.881	0.145	0.596	1.165
Socialization	4	0.304	0.419	-0.517	1.126

None of the program purposes were found to be significantly related to personal or organizational outcomes but low power made detection of a relationship difficult. Effect sizes of comparable magnitude were found for personal outcomes whether the program purpose was retention ($d = 0.255$) or socialization ($d = 0.273$). There was a large overlap in the confidence intervals as well. Based on the small number of studies

used in this analysis, I could not make any claims with respect to the relationship between program purpose and personal outcomes.

Looking at organizational outcomes, a large magnitude effect size was found with respect to retention as the primary program purpose ($d = 0.881$) while smaller magnitude effect sizes were found when the primary program purpose was to improve protégé performance ($d = 0.447$) or socialization ($d = 0.304$). While there is some overlap in the confidence intervals, the results suggested that when the program purpose was retention, there would be a greater positive association to organizational outcomes than for the other two purposes. I believe this to be a very tentative conclusion, however, because it was difficult to separate program purposes. While the primary stated purpose of a formal mentoring program might be retention, retention is aided by improving the protégé's performance and through the better socialization of newcomers to the organization. This was seen in the description of the formal mentoring programs in the studies. While the primary purpose might have been stated as retention, studies often mentioned other purposes (such as improving protégé performance and better socialization of newcomers) as the means to achieving greater retention.

Training

Studies were coded as "Training Yes" if either the mentor or the protégé or both received some kind of training or orientation regarding the mentoring program and their role in it. If no training was mentioned in the study, then the study was coded as "Training No." The results for this portion of the meta-analysis are provided in Table 27.

Hypothesis 7a stated training and/or orientation provided to mentors and/or protégés would be associated with more positive career outcomes than in programs in

which no training or orientation was provided. This hypothesis was not supported since the effect size was greater when there was no training ($d = 0.274$) than when at least one

Table 27: Relationship Between Training and Mentoring Outcomes

	<i>k</i>	<i>d</i>	SE	CI Lower Limit	CI Upper Limit
Career Outcomes					
Training Yes	4	0.054	0.305	-0.543	0.652
Training No	3	0.274	0.137	0.006	0.542
Personal Outcomes					
Training Yes	6	0.372	0.173	0.033	0.712
Training No	2	0.016	0.677	-1.312	1.343
Organizational Outcomes					
Training Yes	20	0.598	0.186	0.233	0.962
Training No	3	0.988	0.119	0.755	1.221

member of the mentoring dyad received training ($d = 0.054$). Hypotheses 7b concerned personal outcomes and the results were in the hypothesized direction. A greater effect size was found when training was conducted ($d = 0.372$) than not ($d = 0.016$). However, the confidence intervals overlapped to a great degree making it difficult to draw firm conclusions about this program characteristic with respect to personal outcomes.

Hypothesis 7c dealt with organizational outcomes. Again, the result was not in the hypothesized direction with a greater effect size found when no training was conducted ($d = 0.988$) than when training was conducted ($d = 0.598$). Hypotheses 7a and 7c were clearly not supported while Hypothesis 7b received minimal support.

Frequency of Interaction

Frequency of interaction was broken into three categories: (1) mentor and protégé meet at least monthly, (2) mentor and protégé meet less frequently than monthly, and (3) meeting frequency is not specified. Table 28 presents the results with respect to frequency of interaction between mentors and protégés.

Table 28: Relationship Between Frequency of Interaction and Mentoring Outcomes

	<i>k</i>	<i>d</i>	SE	CI Lower Limit	CI Upper Limit
Personal Outcomes					
Monthly or greater	3	0.588	0.369	-0.135	1.310
Not specified	5	0.145	0.414	-0.667	0.957
Organizational Outcomes					
Monthly or greater	16	0.670	0.199	0.280	1.061
Less than monthly	2	0.172	0.984	-1.757	2.101
Not specified	5	0.672	0.099	0.477	0.866

Hypothesis 8a stated that greater frequency of interaction between mentor and protégé within formal mentoring programs would be associated with more positive career outcomes than in those programs with less frequent interaction. This hypothesis could not be tested due to an insufficient number of studies. For studies reporting career outcomes, one study reported meeting frequency was greater than or equal to monthly, one study reported meeting frequency was less than monthly, and four other studies did not specify the frequency of meetings between mentors and protégés.

Hypothesis 8b, with respect to personal outcomes, could not be tested either since three studies reported meeting frequency of monthly or greater while in the other five studies meeting frequency was unspecified. It was interesting to note that an effect size of a medium magnitude was found when meeting frequency was monthly or greater ($d = 0.588$) as compared to a small effect size when meeting frequency was not specified ($d = 0.145$). Much of the popular literature on formal mentoring programs supports the specification of meeting frequency so that both parties feel an obligation to meet on a regular basis. These results provided some support for this recommendation.

Meeting frequency with respect to organizational outcomes was found to be in the hypothesized direction with a greater effect size when mentors and protégés met monthly

or more frequently rather than less than monthly. Greater meeting frequency produced a medium magnitude effect size ($d = 0.670$) while lesser meeting frequency produced only a small effect size ($d = 0.172$). However, there was a very large overlap in the confidence intervals and, therefore, a firm conclusion on Hypothesis 8c could not be reached.

Overall, Hypotheses 8a and 8b could not be tested and Hypothesis 8c received minimal support.

Duration of the Program

Duration of the formal mentoring program was coded dichotomously as either six months or less in duration or greater than six months in duration. The results of this analysis are provided in Table 29.

Table 29: Relationship Between Program Duration and Mentoring Outcomes

	<i>k</i>	<i>d</i>	SE	CI Lower Limit	CI Upper Limit
Personal Outcomes					
Six months or less	4	0.344	0.460	-0.577	1.245
Greater than six months	4	0.379	0.201	-0.016	0.776
Organizational Outcomes					
Six months or less	7	0.412	0.302	-0.179	1.003
Greater than six months	16	0.733	0.194	0.352	1.114

Hypothesis 9a stated that a longer length of the mentoring relationship within the formal mentoring program would be associated with more positive career outcomes.

This hypothesis could not be tested since all studies with career outcomes involved relationships that were greater than six months in length. Hypothesis 9b pertained to personal outcomes. Here the results were in the hypothesized direction with greater personal outcomes realized in relationships of a longer length ($d = 0.379$) as compared to a shorter length ($d = 0.344$). However, the magnitude of the effect sizes were approximately equal and there was a large overlap in the confidence intervals making it

difficult to draw a firm conclusion. Hypothesis 9c pertained to organizational outcomes. The effect size for the longer relationships was of a large magnitude ($d = 0.733$) while the effect size for the shorter relationship was approaching a medium magnitude ($d = 0.412$). While there is some overlap in the confidence intervals, it was not as large as for some other relationships suggesting that length of the mentoring relationship might be an important program characteristic with respect to organizational outcomes. Again, low power (11%) made it difficult to reach firm conclusions. Overall, Hypothesis 9 was partially supported.

On the whole, low power made it difficult to detect differences in mentoring outcomes that are associated with varying program characteristics. The results suggest that participation of the mentor or the protégé in the matching process, more frequent interaction between mentor and protégé, and longer duration of the program may be associated with greater outcomes. Unexpectedly, training and voluntary participation were not found to be associated with greater outcomes. Much more research is required to confirm these tentative conclusions.

Index of Best Practices

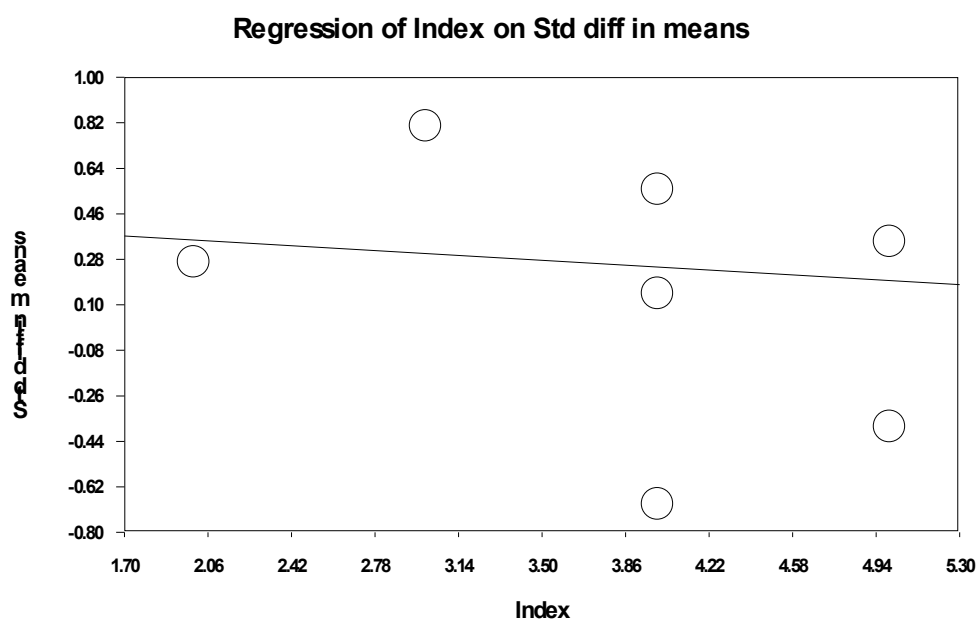
An index of best practices was constructed to determine if the constellation of program characteristics was related to mentoring outcomes. A study was awarded one point for each of the following characteristics: (1) the mentor and/or protégé were involved in the matching process, (2) participation of the mentor or protégé was voluntary, (3) a program purpose was stated, (4) the mentor and/or protégé received training, (5) the meeting frequency was monthly or greater, and (6) the program was

greater than six months in duration. If no mention was made concerning a particular characteristic, it was assumed that it was not present.

Meta-regression was used to determine the relationship between the Index of Best Practices and the three types of outcomes. The unrestricted maximum likelihood method was used since it is a mixed effects method with the index of best practices used as the covariate. This was an appropriate method here due to the variability in the studies.

Figure 1 displays the results for career outcomes.

Figure 1: Meta-Regression for Index of Best Practices and Career Outcomes



Hypothesis 10a stated that there would be a positive relationship between the index of best practices and career outcomes. The downward slope of the line shows this hypothesis was not supported. Additionally, neither the slope nor the intercept was found to be significant ($p = 0.161$ and $p = 0.118$, respectively). Hypothesis 10a was not supported, but more data points are required to adequately test this hypothesis.

Figure 2 below illustrates the relationship between the index of best practices and personal outcomes. Hypothesis 10b stated that higher scores on the index of best

practices would be positively related to the personal outcomes of the programs. The upward slope of the line in Figure 2 shows support for this hypothesis. Additionally the slope and intercept were both significant at $p < 0.000$. Thus, Hypothesis 10b was supported.

Figure 2: Meta-Regression for Index of Best Practices and Personal Outcomes

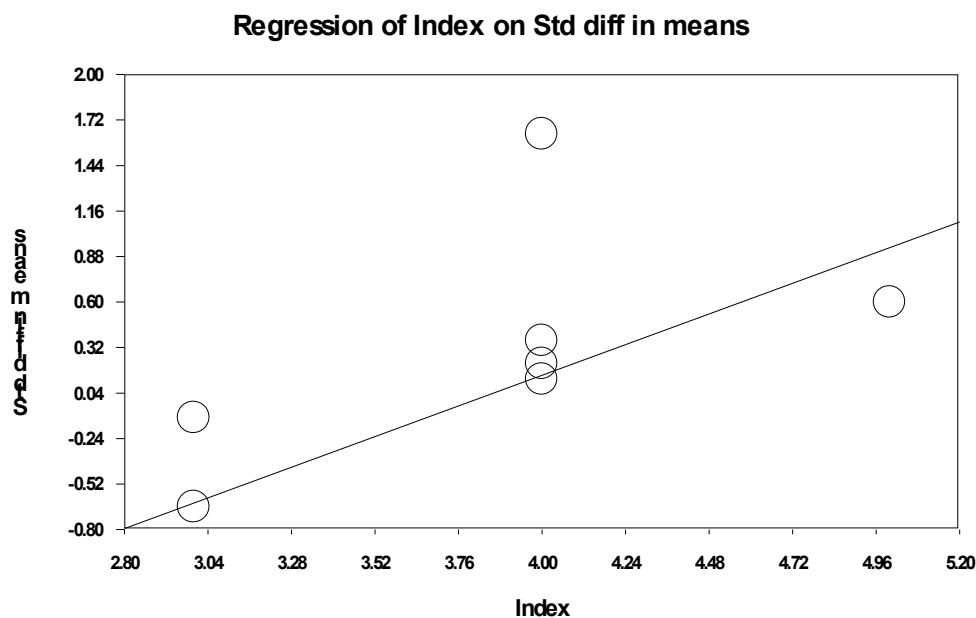
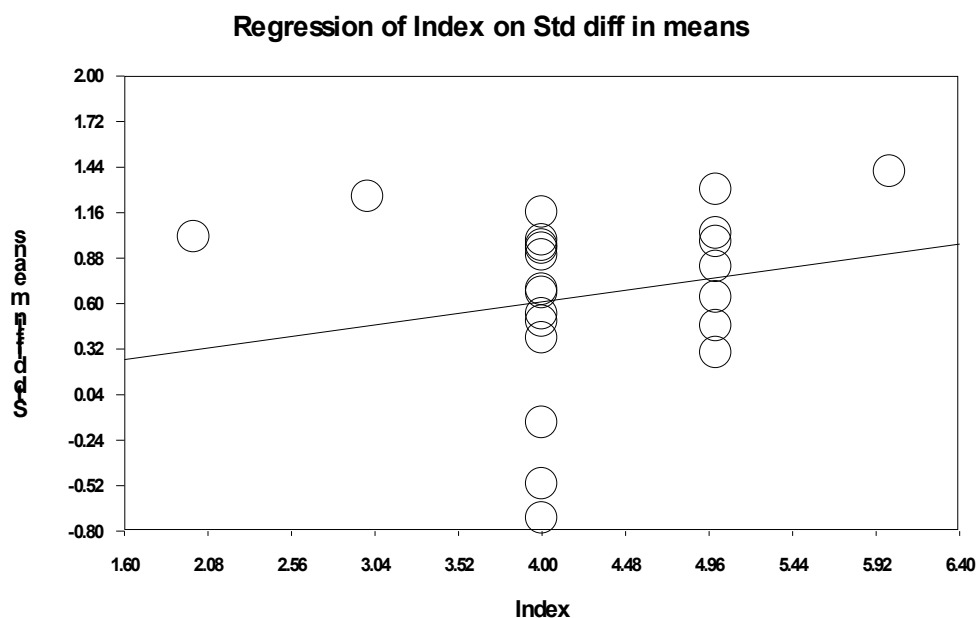


Figure 3 below illustrates the relationship between the index of best practices and organizational outcomes. Hypothesis 10c stated that higher scores on the index of best practices would be positively related to the organizational outcomes of programs. The upward sloping line provides support for the positive relationship. While the slope was found to be significant ($p = 0.001$), the intercept was not ($p = 0.924$). Hypothesis 10c was not fully supported. Overall, Hypothesis 10 received partial support with respect to personal and organizational outcomes.

Figure 3: Meta-Regression for Index of Best Practices and Organizational Outcomes



Summary

Overall, the results presented in this chapter indicated that informal mentoring relationships were more effective than formal mentoring relationships both in terms of the amount of mentoring functions provided and in terms of the mentoring outcomes achieved. While there was stronger support regarding mentoring functions than mentoring outcomes, the results for mentoring outcomes were in the hypothesized direction. Additionally, generally strong support was found for a positive relationship between mentoring functions provided and mentoring outcomes obtained in formal mentoring relationships. Unfortunately, the small number of studies available contributed to the low power to detect effects and hampered the investigation of the relationship between program characteristics and outcomes within formal mentoring programs. Relationships were found to be in the hypothesized direction for matching, frequency of interaction and duration of the program. Results were generally not in the

expected direction for voluntary versus involuntary participation and training. The index of best practices provided promising results with a positive relationship found between the index of best practices for personal outcomes and in the hypothesized direction for organizational outcomes.

Chapter 5

Discussion

The purpose of this study was threefold. First, it examined the differences between informal and formal mentoring relationships. Second, focusing solely on formal mentoring relationships, it examined the association between mentoring functions and mentoring outcomes. Third, it analyzed the relationship between formal mentoring program characteristics and the outcomes of those programs. In this chapter, the major findings of the study are discussed, based upon the hypotheses that were proposed earlier. Additionally, the limitations of the study are presented, and the theoretical and practical implications are discussed.

Major Findings: Comparison of Informal and Formal Mentoring Relationships

It was hypothesized in the present study that more mentoring functions would be provided and greater mentoring outcomes achieved in informal mentoring relationships than in formal mentoring relationships. The first of these propositions received strong support. The magnitude of the effect size for career functions was particularly strong for informal mentoring relationships as compared to formal mentoring relationships. It seems reasonable that fewer career functions would be provided in formal mentoring relationships where the focus is more likely to be on organizational outcomes. Additionally, it has been suggested that it would be easier for formal mentors to provide psychosocial support than career-related support (Chao, Walz, & Gardner, 1992).

In the same vein, I would have expected to find a greater amount of career outcomes in informal mentoring relationships than in formal mentoring relationships.

The effect sizes were positive for all three types of outcomes (career, personal and organizational) indicating greater outcomes in informal than in formal mentoring relationships. However, the magnitudes of the effect sizes were small for all three types of outcomes. In fact, the effect size for organizational outcomes was slightly greater than that for career outcomes. These are only tentative conclusions, based on a relatively small number of studies. More research will assist in clarifying this. At the present time, the bottom line does appear to be that greater mentoring outcomes are achieved in informal mentoring relationships than in formal ones.

A consistent claim within the mentoring literature is that informal mentoring relationships are superior to formal mentoring relationships (Kram, 1985). This study provides empirical support for this claim. This meta-analysis found a greater amount of mentoring functions provided and outcomes achieved in informal relationships. Organizations would be wise to encourage the formation of informal mentoring relationships among its members to garner the benefits of these types of relationships. On the other hand, the outcomes of formal mentoring relationships appear to approach those of informal mentoring relationships as evidenced by the small differences in effect sizes found in this study. These results support the use of formal mentoring programs within organizations as an effective means of realizing outcomes similar to those achieved in informal mentoring relationships.

Major Findings: Relationship Between Mentoring Functions and Mentoring Outcomes in Formal Mentoring Relationships

This study found strong support for a positive relationship between the amount of mentoring functions provided by mentors and the amount of mentoring outcomes attained

by protégés within formal mentoring relationships. In fact, the only hypothesis in this area that did not receive full support was that concerning the relationship between career-related mentoring functions and career outcomes. The relationship was in the hypothesized direction and the use of a 90% confidence interval provided a fair amount of certainty that there is a positive relationship between the amount of career functions provided and the amount of career outcomes achieved in formal mentoring relationships. Again, the focus of formal mentoring programs tends to be more on personal and organizational outcomes rather than on career outcomes. This was evident in the fact that only two studies were used in this portion of the analysis.

The findings here support Allen et al.'s (2004) meta-analytic study which found that the most consistent benefits of mentoring were achieved with regard to subjective outcomes such as affective reactions to the workplace rather than for objective outcomes like compensation and promotion. While Allen and her colleagues did not differentiate between formal and informal mentoring relationships, the findings of this study provide support that there is a positive relationship between mentoring functions and mentoring outcomes in formal mentoring relationships just as there is in informal mentoring relationships. Both types of relationships seem to be operating in a similar manner.

While the relationships seem to be operating in a similar way, they are clearly not identical as demonstrated by the results of the first portion of this study. Since there appear to be greater differences in the mentoring functions provided between formal and informal relationships, researchers should begin by taking a closer look at the specific types of career functions (visibility and exposure, coaching, sponsorship, protection, and challenging assignments) and psychosocial functions (role modeling, acceptance and

confirmation, counseling and friendship) provided in both types of mentoring relationships. Additionally, research should look at how the sub-functions are related to the specific outcomes. Results from this type of research can help delineate how these two types of relationships differ and can assist practitioners in developing more effective formal mentoring programs by highlighting how specific sub-functions are related to specific types of outcomes.

Major Findings: Relationship Between Program Characteristics and Outcomes in Formal Mentoring Programs

Six different program characteristics and their relationship with career, personal, and organizational outcomes were investigated. Unfortunately, once studies were categorized by outcome (career, personal, and organizational), each grouping contained few studies thereby making it difficult to draw firm conclusions about any differential effects of the program characteristics on the outcomes. In fact, none of the hypotheses in this portion of the study were fully supported, due at least in part to the low power to detect significant effects. In several cases, the effects found were in the hypothesized direction but only tentative claims about the superiority of these program characteristics can be made. Each of the program characteristics is discussed below but note that all conclusions regarding these characteristics are tentative and should be interpreted cautiously.

When the mentor or the protégé or both were involved in the matching process, both career and organizational outcomes were of a greater magnitude than when the organization made the assignment. The effect size was particularly large for organizational outcomes ($d = .90$ when the mentor and/or protégé were involved). Again,

this may be due to the focus more on organizational outcomes than career outcomes within formal mentoring programs. Matching does appear to be an important program characteristic with greater outcomes achieved when the mentor or protégé are involved in the selection of their mentoring partner.

With respect to the voluntary versus involuntary participation in the mentoring program, the results were not in the expected direction for all three outcome categories. Greater outcomes were realized when participation was required by both members of the mentoring dyad. Participants in many of the studies, however, were newcomers to their organizations where all newcomers were required to participate as protégés in formal mentoring relationships. The potential problems noted earlier with requiring people to participate may not have been realized since required participation did not seem to single particular people out as needing more help than their peers. Requiring individuals to participate as protégés in mentoring programs appears to yield results for the organization. Requiring mentors to participate does not seem to hinder program effectiveness either. While many managers might complain about the amount of time required to participate as mentors in formal mentoring programs, they may be receiving some benefits as well. Organizations whose mentoring programs are limited by the number of volunteer mentors they have, should consider eliminating this restriction.

All but one of the studies had a stated program purpose. Clearly, program purpose was communicated in the reports of the results of the studies but it is not known whether the program purpose was communicated to the participants of the program. The stated program purpose in the studies may not be a good proxy for the program characteristic of interest here.

The most frequently cited program purpose was retention. This was particularly true in the fields of education and nursing. Many formal mentoring programs have been implemented to reduce the high initial attrition in these two fields. It is interesting to note the small effect size with respect to retention and personal outcomes ($d = 0.255$), but the large effect size with respect to retention and organizational outcomes ($d = 0.881$). In several studies, mentoring programs resulted in reduced self-confidence (a personal outcome) but higher retention (an organizational outcome). New teachers and nurses fresh out of school had high self-confidence in their abilities to perform as a result of their education. However, their self-confidence dropped after they saw what they were actually expected to do. The support they received through their mentoring relationship was often cited as a key to keeping them in the profession. They felt that they would be able to gain the skills necessary to handle their requirements and, therefore, retention of new nurses and teachers was high. This implies that looking at a single outcome may not give a true picture of the impact of a formal mentoring program on protégés. Organizations need to think about what they are trying to accomplish with their programs and measure several outcomes that are relevant to their particular program.

Training conducted by the organization was likely to focus on how to make the mentoring relationship successful and, therefore, was expected to have a positive relationship with the outcomes. Training appeared to be important with respect to personal outcomes but not with respect to career or organizational outcomes. In fact, greater career and organizational outcomes were achieved in programs where no training was conducted. Possibly the impact of training was realized more quickly with respect to personal outcomes than the other two types of outcomes.

Another explanation is that it may not be the mere presence of training that makes a difference but rather the quality of the training. If the training was of poor quality, then it might have given the mentors and protégés a bad first impression of the mentoring program, thereby failing to gain the commitment of the program participants. Lengthy training sessions might have angered busy managers who were serving as mentors, again having a negative impact on their commitment. Perhaps the training failed to focus on the needs of the participants and did not cover what the participants needed to know about what makes mentoring relationships successful. One other possible explanation is that training might just not be needed. Those who have been in organizations might be familiar with how mentoring relationships work. This implies that organizations need to conduct training assessments for their formal mentoring programs as they would do for other training and developmental activities. These assessments can help the organization pinpoint the type and amount of training required for the actual program participants.

More frequent interaction was expected to strengthen the mentoring relationship and allow for the provision of more mentoring functions and thus be associated with greater outcomes. When mentors and protégés met at least monthly, organizational outcomes were greater than when meetings were less frequent than monthly. However, organizational outcomes were also high when meeting frequency was not specified. This may again be an issue with how the variable was defined. Just because meeting frequency was not specified by the program does not mean the mentor and protégé were not meeting frequently. For personal outcomes, greater results were achieved when meeting frequency was monthly or more but smaller when the meeting frequency was not specified. This suggests that meeting frequency should be specified in order to make the

participants feel obligated to meet on a regular basis. While each mentoring program is unique based on the participants and the purpose of the program, I would recommend participants meet at least monthly in order to build and maintain a close relationship.

The length of the mentoring relationship was also expected to be associated with greater outcomes. This was the case with respect to organizational outcomes with those relationships whose length was more than six months having a greater magnitude in organizational outcomes than when the relationship length was less than six months. There was little difference with respect to personal outcomes. Rather than looking at frequency of interaction and duration of the program separately, perhaps these variables should be looked at in combination. Several studies described programs that were of a short duration but were more intense in that the mentor and protégé met on an almost daily basis. Organizations need to determine what they are trying to accomplish with their programs as well as the length of time available for mentors and protégés. These two factors are instrumental in establishing the appropriate program duration and frequency of interaction.

Support for the index of best practices was found with respect to personal and organizational outcomes but not for career outcomes. This is encouraging and supports the idea that it is not any single characteristic that makes a program effective but rather an effective grouping of characteristics. Again, more research is necessary to confirm this finding.

The most common characteristics include in the index were involvement of the mentor and/or protégé in the matching process, interaction of monthly or more frequently, and program duration of six months or longer. These three characteristics

seem to be important features necessary for a mentor and protégé to establish and maintain a close relationship where more mentoring functions can then be provided. Program purpose was also included in the index, but again, this variable does not provide any useful information based on how it was defined in this study. Those programs where mentors and/or protégés participated voluntarily and received training scored higher on the index and were associated with greater personal and organizational outcomes. Despite the findings that the program characteristics of involuntary participation and no training seemed to be associated with greater outcomes, this was not seen when the characteristics were grouped together. This suggests that the mentor/protégé involvement, frequency of interaction, and duration of the program might have a strong association to program outcomes. Research that looks at different combinations of program characteristics is necessary to confirm this.

Major Findings: Moderators

Due to the variability among the studies used in all portions of this paper, moderators were expected to exist. Unfortunately, none of the a priori moderators were tested in this study due to the lack of data on the variables of interest. Dyad composition with respect to race and gender, as well as supervisory status of the mentor, remain fruitful areas for future research with respect to formal mentoring relationships. As discussed in Chapter 2, the research evidence on these topics is mixed. More research is still needed to determine the impact of these factors on formal mentoring relationships.

Only a few studies that had been conducted outside of the United States were retrieved. Globalization of the workplace makes this an important area for future

research. Improved technology should enhance meta-analysts ability to retrieve a broader range of studies in the future.

Several study characteristics were also investigated as moderators. The low power made detection of moderators difficult. Only tentative conclusions could be reached regarding moderators. In particular, publication type, publication date, and newcomer status might be moderators. The results of moderator analysis on industry was mixed making it difficult to draw any conclusions.

With respect to publication type, here it appeared that greater effect sizes were often found in dissertations rather than in journals. This was true with respect to both types of mentoring functions and for career and personal outcomes in the comparison of informal to formal mentoring relationships. It was also true in the portion of the meta-analysis that looked at the association between the quality of the relationship and career and personal outcomes in formal mentoring relationships. One would expect that the results from dissertations with strong results would subsequently be published. However, here the results of only one dissertation (Whitaker, 1999) included in this study was found to be later published in a journal. This suggests that meta-analysts need to make a concerted effort to include dissertations in their integrations of research findings in order to give a true picture of the effect being studied. Allen et al.'s (2004) meta-analysis on mentoring relationships did not incorporate the results of any dissertations and may, therefore, not provide an accurate estimate of the effects investigated. Researchers will need to determine whether or not to code for the quality of the studies included in their meta-analyses. It is possible that dissertations are of a different methodological quality than those published in peer-reviewed journals.

Date of publication was another moderator investigated. With respect to the portion of the study that compared informal and formal mentoring relationships, it was found that more functions were provided and greater outcomes achieved in informal relationships than formal relationships for studies conducted in the 1990s as compared to more recent studies. This suggests that as formal mentoring programs were being instituted to a greater degree throughout the 1990s, their results lagged as compared to informal mentoring relationships. As organizations gained more experience with formal mentoring programs, the gap between formal and informal programs may have narrowed or closed. As discussed earlier, informal mentoring relationships are more effective than formal mentoring relationships but it does appear that as organizations have learned more about mentoring, formal mentoring programs are improving. When looking at the relationship between functions and outcomes within formal mentoring relationships, greater effects were found between career functions and outcomes in the current decade while greater effects were found between psychosocial functions and outcomes in the previous decade. Perhaps the focus in formal mentoring programs has been on improving the career functions provided rather than the psychosocial functions provided. This may be due to a call for greater career functions by the protégés in the programs. As organizations have evaluated their programs over time and received feedback from their protégés, program administrators may have shifted the focus of their programs toward the provision of more career functions. Also, those who participate in mentoring relationships, both formal and informal, gain greater experience with mentoring and may have a better understanding of how to provide career functions. Further, many mentors have previously had the experience of being a protégé in a mentoring relationship. These

new mentors bring their experiences with them to formal mentoring programs. Their experiences may illuminate for them the importance of providing career functions to their protégés.

Whether or not the protégés in formal mentoring programs are newcomers to the organization may affect the relationship. Moderator analysis suggested that there was a stronger relationship between mentoring functions and outcomes when the protégés were not newcomers to the organization. Possibly these more experienced organizational members better understand both the organization and what can be achieved from mentoring relationships, and can take advantage of the potential benefits of mentoring relationships. It is also possible that it may take more time for outcomes to be realized when protégés are newcomers to the organization.

Limitations of the Study

The present study had several limitations that should be noted. First, many of the estimated relationships were based on a small number of studies. Additionally, there was a lot of variability across studies. While first-order sampling error stems from the sampling of subjects within studies, Hunter and Schmidt (2004) noted that second-order sampling error results from the sampling of studies in a meta-analysis. Like primary research, meta-analysis benefits from larger sample sizes. Further, the results of any meta-analysis are only as good as the quality of the studies included in the sample (Lipsey & Wilson, 2001). Here, quality of studies was not used as an inclusion criterion. Rather, all studies were included. While the use of only randomized experiments would

have been preferred, the primary research available did not allow for this nor even for very many good quasi-experiments.

Additionally, this meta-analysis required judgments and assumptions in several areas leading to potential interpretation errors (Wanous, Sullivan, & Malinak, 1989). Incomplete reporting by primary researchers can bias the results of any research synthesis. In this study, for example, this researcher made the assumption that a program characteristic did not exist if it was not reported in the study. While this was probably a valid assumption in some cases, I expect it was not valid in all cases. This researcher did attempt to inform the reader of all assumptions made in this report of the study findings.

While an extensive literature search for applicable studies was conducted, this search certainly did not retrieve all available studies. The fail-safe N calculations do indicate that the results of this study are fairly robust with respect to publication bias. Further, the samples in the studies retrieved may not be representative of the population of all adults involved in traditional mentoring relationships. This study did capture quite a few samples in the fields of business and education, but other fields may not have been adequately covered.

Two checks for coding reliability were conducted in this study. The interrater agreement rates were acceptable but they were not 100%. Inevitably, some coding errors may have occurred but hopefully did not greatly bias the results reported here.

Further, the detection of main effects, as well as the detection of moderators, was hampered by the small number of studies in various subgroups. When power is low, statistically nonsignificant effects do not provide strong evidence for ruling out those effects (Hunter & Pigott, 2004). In all three portions of this study, power was very low.

As a result, all conclusions reached in this meta-analysis are tentative and should be interpreted cautiously. Despite this, I believe a quantitative summary regarding formal mentoring relationships and programs is a valuable contribution to the literature at this point in time. In such cases, the confidence intervals provided can aid the research consumer in making decisions regarding formal mentoring relationships and programs. The use of confidence intervals provides a means for assessing the costs and benefits associated with their decisions (Rothstein & Tonges, 2000). For example, if an organization is deciding whether or not to implement a formal mentoring program versus encouraging informal mentoring within their organization, the results of this study indicate that informal mentoring programs are associated with greater outcomes than formal mentoring programs. The 90% confidence interval tells the organizational decision maker that the difference between informal mentoring relationships and formal mentoring relationships may be as small as zero or as large as 0.465 for organizational outcomes. The organization may decide not to spend the money on the administration of a formal program realizing that the lower cost associated with the encouragement of informal mentoring may yield similar to much greater benefits than formal mentoring. The organization, however, must also consider how they are going to encourage informal mentoring and whether or not this will be successful.

Another limitation involves the individuals that participated in the mentoring programs. When participation is voluntary, who chooses to participate and how does this affect the outcomes attained? When participation is required, do individual characteristics of those in the program affect how the mentoring relationship develops, what types or the amount of the mentoring functions provided, or the types and levels of

the outcomes achieved? It seems likely that protégés in informal mentoring relationships are different than protégés who are required to participate in formal mentoring program. Those in informal mentoring relationships may be those with the highest potential that senior executives are grooming for higher positions within the organization. They would certainly be different than the protégés within formal mentoring programs designed to socialize newcomers to an organization. In the former case, protégés are participating in the informal mentoring relationship because of their past good performance and their exhibited potential for further advancement. In the latter case, protégés are selected due to their lack of experience within the organization. Expectations in terms of the outcomes for these two groups would be different as well. This particular study did not capture any of these individual differences.

A further limitation in this study involves the organizations in which the formal mentoring programs occurred. Not only are individuals different but organizations are different as well. An organization's culture may affect not only who chooses to participate but may also affect the design and implementation of the formal mentoring program. While industry was investigated as a moderator with mixed results noted, other finer grained differences should be investigated. While some studies report the size of the organization, it might be more useful to consider the size of the department in which the formal program resides if the program is not available company-wide. A company's life cycle stage should be considered. Mentoring programs and relationships may be different in younger companies versus more mature companies. Further, mentoring may be different in organizations in high-growth versus low-growth industries. These factors may affect a company's culture as well. Control variables that capture some measure of

an organization's culture would be useful in trying to determine how the organization impacts the formal mentoring program.

Theoretical Implications

It is worthwhile to challenge widely held beliefs to ensure their accuracy. Meta-analytic techniques provide an effective method for doing this. The conclusions reached in this study confirm the generally accepted notion that informal mentoring relationships are more effective than formal mentoring relationships both in terms the mentoring functions provided and the outcomes achieved.

Because there appear to be differences in the mentoring functions provided and outcomes achieved in formal mentoring relationships vice informal mentoring relationships, researchers should report results for those in informal relationships separately from those in formal relationships. Oftentimes researchers have not made a distinction between the two types of mentoring relationships. Lumping these two types of relationships together may obscure some of the findings in the mentoring research. More research is needed to compare formal and informal mentorship characteristics to examine the sources of the dissimilarities. Studies that look at the specific types of career and psychosocial functions provided in formal versus informal mentoring is a logical starting point. The relationships of these sub-functions to the various outcomes would provide a clearer picture of how the two types of mentoring relationships operate.

Since the differences found between informal and formal mentoring relationships were greater in terms of the functions provided and smaller for the outcomes realized, more research is required in this area. For example, a medium magnitude effect size was

found for career functions provided in informal relationships as compared to formal relationships, yet the effect size for career outcomes achieved was small. I recommend that the different types of career-related functions (sponsorship, exposure and visibility, coaching, protection and challenging assignments) and psychosocial functions (role modeling, acceptance and confirmation, counseling, and friendship) be investigated to determine their specific relationship to the different types of outcomes.

While this study found a positive relationship between mentoring functions provided in formal mentoring relationships and the outcomes realized, it may be that certain specific functions are more positively associated with the outcomes than others. Past research has generally aggregated the functions together into the career and psychosocial groupings or into one overall quality measure. It is time to take a closer look at the individual mentoring functions and their relationship to the outcomes.

Another key theoretical finding of this study involves the relationship between mentoring functions and outcomes within formal mentoring relationships. The positive relationship found between mentoring functions and both personal and organizational outcomes demonstrate the value of these relationships within organizations. Longitudinal research may help capture results for career outcomes that take a longer length of time to be realized. Another alternative is to study variables that measure more immediate or short-term career goals that can be achieved during the course of the formal mentoring relationship.

One particular aspect of the formal mentoring relationship that deserves further investigation involves individual differences of protégés. While informal mentors are likely to recruit high performers as their protégés, formal mentoring programs are likely

to encounter protégés with a wider range of performance. Future research should track performance differences of protégés before they enter mentoring relationships and control for these differences to isolate and evaluate their effect on mentoring outcomes.

Individual differences in mentors also deserve additional research since they are the ones providing the mentoring functions in formal mentoring relationships.

Clearly, there is still a need for additional research regarding the composition of the mentoring dyad with respect to race and gender. While much has been written about the impact of race and gender similarity or dissimilarity within the dyad, research has not adequately tested its relationship to mentoring outcomes. The use of supervisors as mentors within formal mentoring programs requires additional research as well to determine its impact on the mentoring relationship.

As noted in the moderator analysis, a stronger relationship between the mentoring functions provided and outcomes achieved in formal mentoring programs was found when protégés were not newcomers to the organization. While studies often report the organizational or job tenure of the protégés, I do not know of any studies that have investigated the link between tenure and mentoring functions or outcomes. This is an avenue that deserves more investigation.

Researchers should pursue more in-depth investigations of formal mentoring relationships with respect to the program characteristics of formal mentoring programs. While frequency of interaction and duration of the program have often been studied, other characteristics such as matching and voluntary participation have not been. Unfortunately, true experiments are difficult to conduct in this area, but quasi-experiments where convenience samples with experimental and control groups are

possible and studies with this design should be pursued. It is essential that organizations conduct high quality evaluations of their interventions so that the relationships of interest are adequately studied. It is in the organization's best interest to conduct rigorous evaluations to determine whether the time and money spent on their interventions are worthwhile. When organizations only ask the participants if they are satisfied with the mentoring program, they learn very little. Evaluations that measure specific outcomes that are tied to the purpose of the program are needed both to advance what we know about mentoring and to enable organizations to design more effective mentoring programs. Additionally, thorough descriptions of the formal programs should be reported in all studies.

Matching seems to be an important program characteristic. In this study, matching was dichotomized where either the mentor and/or protégé were involved in the process or the organization made the decision. In fact, there are a number of variations that are subsumed within these two categories. Only mentors or only protégés might be involved or both might be involved in the matching process. Sometimes program participants are involved to the extent that mentors and protégés meet face-to-face prior to the formation of the mentoring partnership. In other cases, the involvement might be on paper only where the mentor and/or protégé fill out a resume or information sheet and then the mentor or protégé selects their partner based on the information provided. Similarly, these paper measures might be used by the organizational decision maker to make the match or the organization might decide to randomly pair mentors and protégés. While the results here suggest involvement of the mentor and/or protégé is important, this study could not determine if it was more important for the mentor be involved or for the

protégé to be involved. Research is needed to investigate these various matching schemes. While difficult, it is possible. For example, if an organization is implementing a mentoring program in several different departments, the program administrator could set up different matching schemes in the different departments and compare results. Of course, controls for the individual differences among the participants in the different departments would be necessary.

Theory suggested that voluntary participation would be associated with a stronger relationship between mentoring functions and outcomes than involuntary participation within formal mentoring relationships because this would more closely parallel informal mentoring relationships. This study found a stronger relationship when participation was required. It is possible that organizational members appreciate the assistance in finding mentors. Perhaps the protégés who would not have volunteered are actually the ones who can derive the greatest benefits from mentoring relationships. This too calls for more research into the individual differences of the protégés. Personality differences among protégés is one potential area ripe for investigation.

More research is certainly required with respect to training and formal mentoring programs. Again, training was viewed dichotomously here - either being provided or not provided. The mere presence of training was not found to add any benefit to the formal mentoring relationship. Future research should look at how the quality of training affects the formal mentoring relationship. Again, individual differences of the participants can be expected to affect this. In addition to personality differences, it would be useful to consider past mentoring experiences and length of tenure in the organization.

There is certainly a wide variation among the programs that different organizations are using. This study attempted to determine if the grouping of program characteristics is associated with greater outcomes. The first step toward this was taken in this study and the results were promising. As more evidence on the results of formal mentoring programs is accumulated, a more sophisticated index of best practices should be used to determine if there are certain constellations of characteristics that are found to be associated with greater outcomes.

Practical Implications

Many organizations have implemented formal mentoring programs within their organizations with the hope of attaining the positive results reported for informal mentoring relationships. Programs are designed and introduced with the expectation that mentoring will occur. This study provided support for the positive relationship between mentoring functions and mentoring outcomes within formal mentoring relationships. This reinforces the continued, and even expanded, use of formal mentoring programs within organizations. Because much can be gained from formal mentoring relationships, organizations should not simply rely on random processes where relationships may or may not form spontaneously. Formal mentoring programs, however, should not be considered a substitute for informal mentoring relationships but should be offered as a complement or an addition to informal mentoring. Organizations should certainly encourage the formation of informal mentoring relationships.

Since the results showed that more mentoring functions were provided in informal mentoring relationships as compared to formal mentoring relationships and because there

was a positive relationship between mentoring functions and outcomes in formal mentoring relationships, then it follows that formal programs should be designed to mirror informal relationships. Programs that involve the mentor and protégé in the formation of the mentoring partnership seem to be particularly relevant. When mentors and protégés perceive they have a voice in the matching process, they may invest more in the relationship. This suggests that organizations should allow the participants to be more involved. Certainly careless assignment of participants by the organization should be avoided. Organizations that continue to use organization-based matching schemes should evaluate how the scheme affects the outcomes achieved so that we can gain more information about these methods of matching mentors and protégés. Studies that explore different criteria for how organizations match their participants would shed more light on this program characteristic. Therefore, it is necessary for researchers reporting the results of studies include thorough explanations of the matching schemes used.

While the results suggested that greater outcomes were realized in programs where participation by both the mentor and protégé were required, this portion of the meta-analysis did not look at the newcomer status of the protégés. When protégés in formal mentoring programs are all newcomers to the organizations, then it may not matter that participation is required. However, this may not be true for protégés who have been with the organization for a longer period of time. Further investigation is needed to determine if the effect of voluntary participation differs between the two groups. Also, this study was not able to separate differences in the participation of mentors from the participation of protégés. If an organization's program is struggling, decision makers may want to consider revising its policies regarding participation.

Surveying the current mentors and protégés for their thoughts on how their voluntary or involuntary participation affected their mentoring relationship may be useful. Surveys that inquire about how the type of participation affected the closeness of the relationship formed or affected the commitment of their own or their partner's commitment to the relationship would be useful.

While organizations seem to frequently implement mentoring programs for organizational newcomers, it appears that more experienced members of the organization can benefit from formal mentoring programs too. Organizations should consider using multiple mentoring programs to address the needs for those with different levels of experience within the organization. While mentoring programs for newcomers are useful for effectively and efficiently socializing organizational newcomers to the organization, mentoring programs for more experienced organizational members could focus on career progression and the development of the skills and qualities necessary for further advancement within the organization.

Formal mentoring programs can also serve as a springboard for informal mentoring relationships. The findings in this study certainly support the encouragement of informal mentoring relationships in organizations since these relationships provide greater outcomes than formal mentoring relationships. Organizations that are interested in pursuing organizational outcomes in particular might want to encourage the formation of informal relationships since the greatest magnitude effect sizes were found for these types of outcomes for informal relationships as compared to formal ones. One way to do this would be for the organization to promote the continuation of the relationships formed during a formal mentoring program beyond the official end of the program.

Alternatively, protégés who have now gained some understanding of the mentoring relationship can be encouraged to find their own informal mentor to build on what they have already accomplished through the formal mentoring program or to assist them in taking that next step in their career. Organizations might want to consider adding some training (high quality, of course) at the end of their formal programs that includes strategies and skills to help protégés initiate new mentoring relationships.

Organizations need to do a better job in terms of evaluating their programs. Many programs only measure the protégé's satisfaction with their mentor or satisfaction with the program at the conclusion of the program. These types of evaluations are based on the reactions of the participants and would be considered the lowest level of evaluation on Kirkpatrick's (1959, 1998) four level model for evaluating the effectiveness of training and development. The four levels of evaluation in this model are reactions, learning, behavior and results. Organizations often rely on reaction measure due to the ease of their collection. Also, those administering the program may feel they will be able to demonstrate positive results with reaction measures but not with the other measures. Practitioners need to consider what their program is designed to achieve and choose evaluation methods that will capture those results. Control groups must be used when practical. While not always possible, organizations often can and definitely should use non-equivalent control groups when designing their evaluations. While organizations spend substantial time and effort on getting a developmental program, such as a formal mentoring program, off the ground, they do not spend an equivalent amount of resources designing and executing the evaluation of that developmental program. In order to

adequately determine the effectiveness of their programs and to provide the greatest benefit to their organization, better evaluations are required.

Conclusion

Interest in mentoring relationships burgeoned in the late 1970s with the publication of several works that touted its benefits in the business world. Since that time, numerous books and articles have been written on mentoring but much remains to be learned. It was hoped that by aggregating the results of studies involving formal mentoring relationships, a clearer picture of these types of relationships would emerge. For the most part, the results of the present analysis shed a positive light on the effectiveness of formal mentoring relationships. This is especially encouraging given that a conservative approach to meta-analyzing the research studies that did not correct for various measurement errors was used. Much research remains to be done before firmer conclusions can be reached. Unfortunately, the small number of studies hindered the analysis in this study with respect to formal mentoring program characteristics. This remains an area where further research is needed. Pursuing the avenues of research outlined above should enhance our theoretical and practical understanding of these important relationships for the workplace.

APPENDIX A

Studies Included in Meta-Analysis

- ^aComparison of informal and formal mentoring relationships
- ^bRelationship between functions and outcomes in formal mentoring relationships
- ^cProgram characteristics
- ^cAlleman, E. (1989). Two planned mentoring programs that worked. *Mentoring International*, 3, 6-12.
- ^{ab}Allen, T. D., Day, R., & Lentz, E. (2005). The role of interpersonal comfort in mentoring relationships. *Journal of Career Development*, 31(3), 155-169.
- ^bAllen, T. D., & Eby, L. T. (2003). Relationship effectiveness for mentors: Factors associated with learning and quality. *Journal of Management*, 29(4), 469-487.
- ^aAllen, T. D., & Eby, L. T. (2004). Factors related to mentor reports of mentoring functions provided: Gender and relational characteristics. *Sex Role*, 50(1/2), 129-139.
- ^cAngell, C., & Garfinkel, B. (2002). *The power of mentoring beginning teachers*. Retrieved February 27, 2005 from gse.gmu.edu/research/lmtip/arp/vol4pdfs/b.Garfink.pdf
- ^bArmstrong, S. J., Allinson, C. W., & Hayes, J. (2002). Formal mentoring systems: An examination of the effects of mentor/protégé cognitive styles on the mentoring process. *Journal of Management Studies*, 39(8), 1111-1137.
- ^cAtwood, A. H. (1981). *Effects of a three month mentorship on mentors and new graduate nurses in an acute care urban hospital*. Unpublished Dissertation, University of San Francisco.
- ^aBarr, M. J. (1998). *Mentoring relationships: A study of informal/formal mentoring, psychological type of mentors, and mentor/protégé type combination*. Unpublished Dissertation, Nova Southeastern University.
- ^cBenson, C. A., Morahan, P. S., Sachdeva, A.K., & Richman, R. C. (2002). Effective faculty preceptoring and mentoring during reorganization of an academic medical center. *Medical Teacher*, 24(5), 550-557.
- ^bBlau, G. (1988). An investigation of the apprenticeship organizational socialization strategy. *Journal of Vocational Behavior*, 32(2), 176-195.
- ^cBoice, R. (1990). Mentoring new faculty: A program for implementation. *Journal of Staff, Program, and Organizational Development*, 8(3), 143-160.

- ^aBouquillon, E. A. (2004). *Antecedents associated with mentor functions received and career outcomes reported by protégés and non-mentored employees*. Unpublished Dissertation, The Pennsylvania State University.
- ^{ac}Boyle, P., & Boice, B. (1998). Systematic mentoring for new faculty teachers and graduate teaching assistants. *Innovative Higher Education*, 22(3), 157-179.
- ^aBrashear Alejandro, T. G. (1998). *Mentoring in the salesforce*. Unpublished Dissertation, Georgia State University.
- ^cBremer, C. F. *Impact of a mentoring program on occupational stress, personal strain, and coping resources of newly appointed United States Magistrate Judges*. Unpublished Dissertation, Drake University.
- ^cBrown, R. L. (1990). Mentoring program builds million dollar agencies. *Manager's Magazine*, 65(5), 10-18.
- ^aCarter, M., & Francis, R. (2001). Mentoring and beginning teachers' workplace learning. *Asia-Pacific Journal of Teacher Education*, 29, 249-262.
- ^aChao, G. T., Walz, P. M., & Gardner, P. D. (1992). Formal and informal mentorship: A comparison on mentoring functions and contrast with nonmentored counterparts. *Personnel Psychology*, 45, 619-636.
- ^cChiang, L. H. (1989). *The impact of mentoring on first-year teachers*. Paper presented at the annual meeting of the Mid-Western Educational Research Association, Chicago, IL.
- ^bClark, R. W., & Zimmer, B. P. (1989). Mentoring: Does it work? *Lifelong Learning: An Omnibus of Practice and Research*, 12(7), 26-28.
- ^cCraver, D., & Sullivan, P. (1985). Investigation of an internship program. *Journal of Continuing Education in Nursing*, 16(4), 114-118.
- ^aDiMasi, G. J. (1992). *The effects of mentoring on technical personnel of an engineering organization of the United States Government*. Unpublished Dissertation, Temple University.
- ^cDobbs, K. K. (1988). The senior preceptorship as a method for anticipatory socialization of baccalaureate nursing students. *Journal of Nursing Education*, 27(4), 167-171.
- ^aDreher, G. F., & Chargois, J. A. (1998). Gender, mentoring experiences, and salary attainment among graduate students of an historically black university. *Journal of Vocational Behavior*, 53(3), 401-416.

- ^aDunlap, D. M., & Pence, L. J. (1990). *Formal and informal mentorships for aspiring and practicing administrators*. Paper presented at the annual meeting of the American Educational Research Association, Boston, MA.
- ^aEvans, G. J. (2002). *Mentor programs and protégé outcomes*. Unpublished Dissertation, Walden University.
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