AFIT/GIR/LAL/99D-9

AN ASSESSMENT OF MENTORING FUNCTIONS
AND BARRIERS TO MENTORING

THESIS

Kristopher A. Singer, First Lieutenant, USAF

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THESIS

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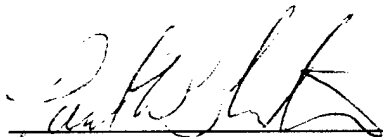
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<div align="right">Kristopher A. Singer</div>

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Abstract

A study of 91 Coast Guard junior officers and their mentors established the construct validity for mentoring functions and barriers to mentoring. The Air Force relies on supervisors to provide mentoring to their subordinates. The key predictors of whether junior officers report their supervisors as mentors were similarity between mentor and mentee and the quality of the supervisory relationship in terms of LMX and psychosocial and career development mentoring functions. The results demonstrated evidence for a compensatory theory of mentoring. Multiple mentors do not have a synergistic effect on mentoring relationships. The key predictors of reporting an additional mentor (other than the supervisor) were not considering supervisors as mentors and not experiencing the barrier, lack of access to mentors. The study identified a critical group who might be overlooked by organizations' mentoring programs. People who report not having a mentor (supervisor or other) have the lowest scores on self-assurance, supervisory relationships and mentoring functions.

AN ASSESSMENT OF MENTORING FUNCTIONS

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I. Introduction

Overview

The United States Air Force (USAF) has a number of complex and important messages that need to be conveyed to its Company Grade Officers (CGOs) in order to cultivate future leaders. These messages consist of Air Force Core Values, steps in professional development, and other knowledge such as organizational structure, politics and personalities, technical knowledge, career guidance, and personal growth in the Air Force. These messages are important because they influence retention and are necessary for CGOs to reach their full potential as future leaders of the Air Force.

The Air Force uses several means to pass on this message to CGOs. These methods include professional military education (PME), professional and social organizations, performance evaluation, promotion selection, and mentoring. Opportunities for PME are limited and infrequent. Professional and social organizations deliver the Air Force message to groups more frequently, but not at the individual level. Performance feedback and evaluations provide the message at the individual level, but they are often limited to specific job performance rather than personal development issues. Evaluations and feedback also focus on the near term – how the CGO can improve in the next evaluation period or for the next promotion board. The Air Force relies on mentoring to provide a message that is individually focused, continuous, and

future oriented. Mentoring attempts to match the people with the message (today's leaders) with the people who need the message to succeed (today's CGOs).

General Ronald R. Fogleman, then Air Force Chief of Staff released Air Force Policy Directive (AFPD) 36-34, Air Force Mentoring Program, which set out to "formally establish mentoring in the Air Force and provide guidance for its implementation," (AFPD 36-34, 1996:1). That guidance directs that "mentoring is a fundamental responsibility of all Air Force supervisors," (AFPD 36-34, 1996:1). Other organizations, however, cite research showing that the most effective mentor is not the first or second level supervisor. Supervisors, in many cases, have time constraints or are unable to provide the necessary guidance even though they may be able to share some of the knowledge and skills the mentee needs.

A qualitative examination of past mentoring relationships makes clear that successful officers were able to get quality career, life, and work-related guidance from more than one source. This allowed them to further distance themselves from their peers. Junior officers need tools to develop the job skills necessary to be effective. With many successful officers, the tools not provided by their supervisors were likely received through an external mentor. In addition, the superior communication skills of successful officers allowed them to get the most advantage from the relationships with their supervisors and mentors. This suggests that mentoring programs would help the Air Force most if they could help all officers model those who were most successful (i.e., create high-quality relationships with both their supervisor and with an additional mentor).

The Coast Guard began a mentoring program in 1991 after a leadership study found that mentoring was "a major factor in retaining personnel in an organization," (History of CG Mentoring Program, 1998). The Secretary of Transportation stated in a memo to all Department of Transportation (DOT) employees that "partnerships between mentors and mentees" will help develop "the resources of a motivated, knowledgeable work force focused on growth and development" need to move into the 21st century (Secretary of Transportation, 1998). In an attempt to address the problems of matching mentors and mentees one at a time and on paper, the Coast Guard teamed with the Department of Transportation to introduce the One DOT Mentoring Program. This program is accessible via the Internet and allows matches across organizations (History of the CG Mentoring Program, 1998). Such a program eliminates many of the barriers to establishing a mentoring relationship, such as access to mentors, personal risk, and organizational rejection of mentoring. The research on these barriers is scarce and very few mentoring programs have addressed the impact of these barriers.

Problem Statement

Mentoring obviously has received much support from senior leaders in the Air Force. Yet, much of the burden for mentoring in the Air Force falls to the supervisors. The Air Force believes that supervisors can provide mentoring to their subordinates because they have the opportunity to challenge their subordinates, provide performance feedback and guidance, and set professional and personal development goals (AFPD 36-34:1). Although supervisors have the advantage of access to mentor their people and an understanding of the knowledge and skills the mentee needs, they may not always be the

best choice for mentoring. Supervisors, in many cases, have time constraints and are unable to provide the guidance needed by their subordinates. In addition, subordinates may not have good relationships with their supervisors. Poor quality relationships can be due to the subordinate, the supervisor, or both. By singling out the supervisor as the person primarily responsible for mentoring a CGO, the Air Force jeopardizes the communication of its important message. For some CGOs, however, finding a mentor other than their supervisor may be very difficult. Individual and organizational barriers may prevent CGOs from gaining access to mentors or from starting a mentoring relationship. A lack of mentors is often discussed as a problem, however the numbers show that there are enough field grade officers to mentor CGOs. Individual CGOs might find it hard to initiate a mentoring relationship because of their feelings about themselves or how a potential mentor will react to their advancement. In order to remove these barriers, they must first be identified and measured to determine which barriers require the most attention.

Research Focus

The CG has tried to tackle the access problem head on by introducing a matching database to its personnel. Is it working? This study plans to use the junior officer population of the Coast Guard to help clarify the types of barriers to mentoring that exist and to determine if their approach has worked.

II. Literature Review

Mentoring

"Mentoring is viewed as a special relationship that develops between two individuals, where the mentor recognizes a uniqueness or potential in the less experienced person and takes a special interest in the growth of that person. Likewise, the protege admires or values the experience, knowledge, skill, or behavior of the mentor and wishes to emulate this" (Searcy, Lawson, and Trombino, 1995:307).

Mentoring is paramount to the professional indoctrination of personnel new to an organization. Mentoring is driven partly by the "need to meet an organization's goals," including "the need to develop effective leaders" and "to extract full potential from all employees" (Burgess, 1994:439, 445). It involves relations between senior managers and junior employees, in which the latter can "become interwoven into an organization's culture" (Townley, 1994:125) by efforts of the former. The senior managers, embodying the "core values that best promote desired organizational culture," "help frame the inculcation process" as well as "help cultivate desired norms and values" (Townley, 1994:125). Junior members observe the more subtle, tacit aspects of an organization's goals (embodied in superiors). The junior members then evaluate these aspects and determine which aspects should be internalized. This develops their new identities as members of the organization (Kanter, 1977; Kram, 1983; Noe, 1998; Ragins, 1989).

People with mentors receive numerous benefits from the relationship including more promotions, higher incomes (Dreher & Ash, 1990) and more career satisfaction

(Fagenson, 1989) than those people without mentors. Specifically, mentees can receive "on-going support and encouragement; association with a successful role model; help in building a professional network; and helpful career advice and direction" (Clark, 1995:38). Benefits of mentoring often differ depending on the career stage of the mentee. Individuals that are new to an organization need someone with more experience that can pass on "organizational savvy, culture, politics, and personality; while organizational veterans can receive guidance to achieve one or more career goals" (Mentoring FAQ, 1998). Mentors also benefit from a mentoring relationship. Often they gain "personal satisfaction in teaching and sharing experience; exposure to new ideas; and recognition" from others in the organization (Clark, 1995:38).

The extent of benefits depends on both the motivation and the match of the mentor and mentee. Mentees must take responsibility for their own personal growth and direction. They must be willing to take feedback constructively and learn and desire to make the organization more effective (Mentoring System Instructions, 1998). Mentees must be aware of their needs in order to attract a suitable mentor – deciding whether they "want a teacher, a psychologist, a protector, a promoter" (Zey, 1984:170).

Organizations reap the benefits of personnel who reach their full potential, when they provide mentors to those people who need them. Organizational benefits of mentoring relationships such as improved job satisfaction (Koberg, et. al., 1994), better morale of mentors and mentees, (Clark, 1995:38) and reduced turnover (Clark, 1995; Viator & Scandura, 1991) far outweigh the costs involved in the mentoring process.

Success Factors for Mentoring

Three major characteristics that are key to successful mentoring relationships are commitment, mutual respect, and time spent together.

Mentors need to be committed to the idea that mentoring is important for employee development, individual advancement, and organizational success. Mentoring takes effort, so the mentors need to believe that their efforts can make a difference. The mentor must encourage the mentee to attempt difficult tasks, yet protect the mentee from too much damage if the attempt fails. A successful mentor is supportive and patient in this process (Mentoring Handbook, 1998). The mentor must be available to provide support when the mentee needs him or her and be patient enough to dedicate the time necessary for the relationship to be successful.

There must also be mutual respect in successful mentoring relationships. The mentor and mentee view each other as "competent, seriously committed to work and to doing what they really did well, to being successful, to moving up, and to doing so on the basis of competence and building on success," (Pfleeger and Mertz, 1995:68). It is also important that the mentee recognize the knowledge, skills, and abilities of the mentor because these are the things the mentee needs to learn to be successful (Five Essentials, 1998). The mentor often accesses information and shares knowledge and experience about his or her organization with the mentee. In some cases, the mentor may share networks of contacts garnered from years of working in the field (Pfleeger and Mertz, 1995:68).

Successful mentor – mentee pairs spent time together by meeting regularly. Research shows that the meetings do not have to be formal or on a schedule; they could

be accomplished by email or a telephone conversation. The most important aspect of these meetings was that the mentee felt comfortable calling for the meeting and was afforded more access (than his or her peers) to the mentor (Pfleeger and Mertz, 1995:67; Five Essentials, 1998).

Pfleeger and Mertz found that effective mentors were "generous of spirit, wanting to see young people succeed, even in a climate of increasingly fierce competition at all ranks" (1995:71). They also explained that a mentor should believe mentoring is helpful and should see themselves as critical to the process (Pfleeger and Mertz, 1995:71). The mentor must help the mentee "clarify career goals and carry out a plan to reach those goals by sharing the insights and knowledge they have gained through their experiences" (Mentoring FAQ, 1998).

Air Force Approach to Mentoring

The Air Force uses several means to pass on its message of personal and professional development to CGOs. These methods include Professional Military Education (PME), professional associations, evaluation and performance feedback, promotion, and mentoring. While CGOs are attending PME, they receive briefings on the Core Values, professional development and career guidance while enhancing their technical knowledge. Unfortunately opportunities for in-residence PME are limited. For instance, only 80% of Captains are selected for Squadron Officer School. The percentages are even lower for Air Command and Staff College (Majors) and Air War College (Lieutenant Colonels and Colonels (select)). Not only are these opportunities

highly competitive, but they are also infrequent. Therefore, officers are only exposed to the message in this manner approximately every 6 years during their careers.

The Air Force also recommends that CGOs become involved in professional and social organizations that will help explain the structure, politics and personalities of the Air Force. Organizations, such as the Air Force Association and Society for Military Engineers, provide a more frequent opportunity for the passing of the Air Force message. The Company Grade Officer Council and Air Force Cadet/Officer Mentor Action Program, Incorporated (AFCOMAP) provide local opportunities for CGOs to receive the Air Force message on a regular basis. AFCOMAP was chartered by the Secretary and the Chief of Staff of the Air Force and is "committed to supporting the Air Force in the recruitment, professional development, and retention of cadets and junior officers" (AFI 36-3401, 1997:9).

PME and organizations deliver the Air Force message to groups, but not at the individual level. One way the Air Force delivers the message to individuals is through personnel evaluations and performance feedback. During evaluations and performance feedback, CGOs are given appraisals of their technical knowledge and personal growth in the Air Force as well as career guidance explaining what path to take to be successful. Promotion acts as a check of whether the message has been received by the CGOs. If the CGOs have not received the message, it will reflect in their job performance and ultimately, they will not be promoted. The nature of these means of delivery is often limited to specific job performance rather than personal development issues. Another drawback of these methods is that they are focused on the near term – how the CGO can improve in the next evaluation period or for the next promotion board.

The Air Force needs an alternative method to deliver its message that is individually focused, continuous, and future oriented. This method needs to fill the gaps left by the previously explained methods. Mentoring attempts to match the people with the message (today's leaders) with the people who need the message to succeed (today's CGOs). The Air Force has selected mentoring as the primary means of passing on its message. General Ronald R. Fogleman, then Air Force Chief of Staff, released Air Force Policy Directive (AFPD) 36-34, *Air Force Mentoring Program*, in November 1996. AFPD 36-34 sets out to "formally establish mentoring in the Air Force and provide guidance for its implementation," (1996:1).

Air Force Mentoring Goals

The goal of Air Force Instruction (AFI) 36-3401, *Air Force Mentoring*, which implemented AFPD 36-34, is to "help each officer reach their full potential as officers, thereby enhancing the overall professionalism of the officer corps" (1996:1). The Air Force Mentoring Program was established to "bring about a cultural change in the way we view professional development for company grade officers" (AFI 36-3401, 1996:1).

Mentoring in the Air Force encompasses many areas including "career guidance, professional development, Air Force history and heritage, and knowledge of air and space power" (AFPD 36-34, 1996:1). Air Force mentoring also includes passing on the "knowledge of the ethos of our profession, and the understanding of the Air Force's Core Values of integrity, service, and excellence," (AFPD 36-34, 1996:1). The Air Force believes that mentoring relationships prepare CGOs for the increased responsibilities they

assume during their careers. Mentoring is not a program to enhance promotions; it is an "essential ingredient in developing well-rounded, professional, and competent future leaders" (AFPD 36-34, 1996:1).

Air Force Mentoring Key Players

AFI 36-3401 states "Commanders are responsible for promoting a robust mentoring program within their unit. The immediate supervisor or rater is designated as the primary mentor (coach, guide, role model, etc.) for each of his or her subordinates" (AFI 36-3401, 1996:2). The AFI goes on to say that this process should not restrict the subordinate from seeking out additional counseling and professional development advice. Although current guidance makes it clear that the Air Force relies upon commanders to ensure mentoring takes place in their units, the task of actually performing mentoring functions falls to the supervisor. AFPD 36-34 states: "Mentoring is a fundamental responsibility of all Air Force supervisors" (1996:2). Supervisors must "know their people, accept personal responsibility for them, and be accountable for their professional development" (AFI 36-3401, 1996:2). The policy directive identifies several programs (such as performance feedback, professional military education (PME) programs, and assignment policies) that are available to help the commander and supervisor with their subordinates' professional development, but does not identify additional mentoring resources.

Effectiveness of the Air Force Mentoring Program

The goals of the Air Force Mentoring Program (as described in AFPD 36-34 and AFI 36-3401) appear to parallel the benefits that come about from mentoring

relationships as described in the literature. The Air Force has acknowledged that there must be commitment to the program, mutual respect between the mentor and mentee, and that time must be spent together for the relationship to develop. The AFPD 36-34 statement that mentoring **must** be accomplished enforces commitment to the program. Mutual respect is inherent in an Air Force officer's relationship with his or her supervisor because of the chain of command. Finally, the Air Force requires mentoring issues be discussed in the mandatory feedback between supervisors and their subordinates, which meets the time success factor. The Air Force expects mentoring to achieve these goals and, on the surface, it appears that the program is aligned with the success factors that will allow it to do so. Beneath the surface, however, the way the Air Force Mentoring Program has been implemented may cause problems.

Much of the burden for mentoring in the Air Force falls to the supervisors. Although supervisors have the advantage of access to mentor their people and an understanding of the knowledge and skills the mentee needs, they may not be the best choice for mentoring. Supervisors, in many cases, have time constraints and are unable to provide the guidance needed by their subordinates. Other drawbacks of supervisor mentoring include perceptions of favoritism and the fact that mentees are sometimes reluctant to being open about their developmental needs and weaknesses for fear of this affecting their performance ratings (Mentoring FAQ, 1998). Low levels of mentor similarity (similarity between the mentor and the mentee) can also hamper the mentoring relationship.

Mentors and Mentoring Effectiveness

Benefits of Supervisors as Mentors

Hypothesis 1a: Junior officers who report high quality relationships with their

supervisors will more likely report that their supervisor is their mentor.

Leader-Member Exchange (LMX) research has shown that "the quality of the relationship that develops between a leader and a follower is predictive of outcomes at the individual, group, and organizational levels of analysis," (Gerstner and Day, 1997:1). The basis of the theory is that subordinates can be categorized into either the "in group" or the "out group" based on the quality of the relationship with the supervisor (Feldman, 1988). The "in group" members receive special attention from the supervisor. Feldman hypothesized that the positive expectations of a supervisor "influence the quality of interaction with each subordinate. High expectations lead to more challenging assignments, more frequent feedback, more training opportunities, higher performance goals, more positive reinforcement" (Feldman, 1986:174).

The special relationship between supervisors and members of the "in group" include many of the same things that characterize effective mentoring. Gerstner & Day (1997:1) found that better LMX relationships lead to better, more productive subordinates. Settoon, Bennett, and Liden found that "desired work behaviors ... are associated with the nature of the relationship with the supervisor." They go on to state that when there is mutual trust and loyalty, interpersonal affect, and respect between a supervisor and subordinate, the subordinate will perform better in terms of expected and "extra" or citizenship behaviors (1995:224).

Low Quality Supervisory Relationships Equate to Low Quality Mentoring

Hypothesis 1b: Junior officers who report low quality relationships with their supervisors will less likely report that their supervisor is their mentor.

Although LMX predicts good things for subordinates in the "in group", there is not much good news for those in the "out group." These people not only receive poorer quality supervision, but under the Air Force program, they get poor mentoring as well. Gibson's (1998) research showed that CGOs with mentors appeared to have better LMX relationships with their supervisors. Gibson (1998:60) also found that "CGO's who demonstrated a higher level of work-related competence, proactive personality, and the ability to engage in high quality communication exchanges were also more likely to have mentors." The evidence suggests that the Air Force mentoring program may be leaving out an important group of people.

Social exchange and reciprocity have been used to explain the motivation of employee behaviors and the formation of positive attitudes (Settoon, et al., 1995:219). According to Settoon, et al., "recipients of positive actions experience a sense of indebtedness that is highly aversive and can be reduced through reciprocation." These positive actions that result from mentoring can motivate average (or sub-) performers to increase their productivity, improve their attitude, and become more loyal to their organization. The Air Force may receive greater efforts from its personnel if it can develop a mentoring program that reaches out to those who otherwise would go without mentoring.

Similarity and Mentoring Effectiveness

Hypothesis 1c: Junior officers who report low similarity with their supervisors will less

likely report that their supervisor is their mentor.

In some cases, supervisors do everything in their power to assist their

subordinates; however, they do not appear to make an impact on a mentoring level. One

possible explanation is that a lack of supervisor similarity (similarity between the

supervisor and the subordinate) acts to block the communication necessary for a

successful mentoring relationship. If supervisors differs greatly enough (in areas such as

age, gender, career field) from their subordinates, the subordinates may not be able to

relate to the supervisors.

Advantages of Having Multiple Mentors

Hypothesis 2a (Compensatory theory): Junior officers who do not have any mentors will

report lower proactive personality and sense of competence, and lesser

quality relationships with their supervisors and mentors.

Although there is little information existing on multiple mentors, Dansky (1996:8)

describes one of her earlier studies that found that "individuals who differed from their

supervisor in age or sex were more likely to report that they received psychosocial

support from a group outside their organization." There are several explanations for why

multiple mentors are beneficial to a mentee. One explanation is that additional mentors

will compensate for a weakness in the first mentor. For example, if Air Force Officers

work for civilians, the civilians may not be able to provide career guidance to those

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officers. The officers could seek out higher-ranking officers from whom to receive career guidance.

Hypothesis 2b (Synergistic theory): Junior officers who have multiple mentors will report higher proactive personality and sense of competence, and better quality relationships with their supervisors and mentors.

Another idea is that the strengths of the mentors will combine synergistically. Dansky states: "In addition to being an exclusive relationship between two people, mentoring may consist of a set of relationships, the sum of which is greater than the parts" (1996:8). Using the same Air Force Officers example, having both civilian and higher-ranking officers as mentors will give officers a clearer picture of the Air Force as a whole than they would have received from either civilians or higher-ranking officers separately.

Barriers to Mentoring

Phillip-Jones states "finding and making use of the right mentors is the most critical step you'll ever take in your career" (1982:16). Finding a mentor appears to be a major problem for some people. There is often the impression that a mentoring relationship is unattainable because of a lack of mentors. The numbers of personnel in management positions, however, indicate that this is not the case. Some barriers reside within junior members. These can include lack of self-confidence; lack of knowledge on how to go about getting mentors; and resistance to initiating a relationship due to questions of appropriateness, fear of rejection from mentors, and fear of rejection by members of the organization, including the supervisor (Ragins & Cotton, 1991; Searcy,

et. al., 1995). Other barriers reside with potential mentors. These can include lack of time and energy, lack of information, and fear of organizational rejection (Ragins & Cotton, 1991; Searcy, et. al., 1995)

Mentoring for All or Only the Select

In their 1990 study on executive mentoring for women and minorities in computing, Pfleeger and Mertz state that "not everyone should be a protégé" (1995:71). They believe that only someone who is on the fast-track should be a mentee because of the visibility of these "up-and-comers" and the desire of mentors to work with those individuals. Pfleeger and Mertz believe that a mentee should have a "clear potential for upward mobility" (1995:71) if the mentoring program is to be successful. By only selecting high performers as mentees, the organization is making it advantageous for the mentor to work with the mentee. This in turn ensures visibility, focuses the program on advancement and shows how committed the organization is to the program (Pfleeger and Mertz, 1995:71).

Air Force Position – Mentors for All

The goals of the Air Force program appear to disagree with the position taken by Pfleeger and Mertz (1995). AFPD 36-34 makes it clear that the Air Force Mentoring Program "applies to **all** [emphasis added] Air Force officers with special emphasis on the company grades" (AFPD 36-34, 1996:1). Since the advantages of mentoring are so great, the chance to be mentored must not be denied to those who are not "up-and-comers." Mentoring for those who are not on the fast-track may not provide the huge individual benefits found in the mentoring relationships of "up-and-comers," but the additive improvement should be significant to warrant the effort. The key to mentoring those not

on the fast-track is to examine how the natural mentoring relationships are developed with "up-and-comers" and attempt to formally replicate these relationships.

Effects of Current Air Force Practice – Mentors for the Select

Hypothesis 3a: Junior officers who report a large number of barriers to mentoring will be less likely to report having mentors other than their supervisors.

Hypothesis 3b: Junior officers who report a higher sense of competence and proactive personality will be more likely to report having mentors other than their supervisors.

The implementation of mentoring in the Air Force, however, may be supporting Pfleeger and Mertz' (1995) conclusions. Gibson's research (1998:60) revealed that CGO's who reported good relationships with their supervisors were more likely to have mentors. These same CGOs "perceived fewer barriers to gaining mentors" (Gibson, 1998:60). Possibly because of their perception of fewer barriers, these CGOs were more likely than their peers "to have mentors outside their chains-of-command" (Gibson, 1998:60). It has been theorized that prospective mentors are attracted to prospective mentees that are considered high performers (Kram 1985; Cook, 1987). Gibson found that "mentors were attracted to high-performing CGOs who demonstrated work-related competence, initiative, and a willingness to learn" (1998:61). Again, it appears that the design of the Air Force program does little to remove barriers for the portion of CGOs that are least likely to have mentors.

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Potential Solutions

Hypothesis 3c: Junior officers who are more aware of organizational programs that facilitate mentoring are more likely to report having mentors other than their supervisors.

The United States Coast Guard started a mentoring program in 1991 after a leadership study found that mentoring was "a major factor in retaining personnel in an organization" (History of the Coast Guard Mentoring Program, 1998). Initially, the program consisted of a five-day training course and "a 'formal' network where people sent in applications volunteering to be mentors or requesting mentors" (History of the Coast Guard Mentoring Program, 1998). These requests were then matched by hand according to "career field, grade, or what the person requesting the mentor said they needed" (History of the Coast Guard Mentoring Program, 1998). As the program grew to encompass much of the Coast Guard, it became impossible to individually match mentors with mentees because of human resource and budget constraints.

In 1997, the Coast Guard teamed with the Department of Transportation (DOT) (the agency the Coast Guard reports to during times other than war) to develop the One DOT Mentoring Program. The One DOT Mentoring Program was "designed to give employees the opportunity to receive career guidance from role models from any organization or operating administration in the Department and to subsequently help them reach their full potential" (Mentoring System Instructions, 1998).

The program requires that personnel who want to be mentors register and fill out an "application form" [database] with fields such as grade or military rank, email address,

telephone number, sex, age range, work skills, interests, and hobbies " (Mentoring

System Instructions, 1998). Mentees must register with their name, last four digits of

their social security number, and their operating administration before gaining access to

the program. Once registered, mentees can search for mentors by any of the fields that

the mentors are asked to complete. A list of mentors matching the mentee's search

criteria is then displayed to the mentee from which he or she can select a mentor "

(Mentoring System Instructions, 1998). This program is accessed via the Internet,

permitting easy contact to personnel who are interested in mentoring (and being

mentored). By expanding the Coast Guard mentoring program to include the DOT,

contact with more mentors/mentees is made possible for Coast Guard personnel.

In 1997, the research and technical services (RTS) division of Shell International

Exploration and Production realized that their mentoring program was not keeping up

with the times. Employees at Shell were changing jobs every three to four years and it

was becoming more difficult to keep track of mentor-mentee pairs as they became more

mobile, relocating all over the world. Initially an RTS senior management team

attempted to control the matching of mentors and mentees, however, after months of

inactivity between the pairs, Shell RTS realized there was a problem. Re-examining the

program, senior management found that their mentoring program could be more

successful if mentors and mentees were given a choice as to participation and were

allowed to match themselves (Stott and Sweeney 1999).

"Mentors now nominate themselves," then enter information about themselves

"into a central database and await the call" (Stott and Sweeney 1999:46). The mentees

are then allowed to select their mentor candidates from this central database. Shell also

motivates employees who have an "excellent reputation as a mentor" to "take on as many as – but no more than – three mentees" (Stott and Sweeney 1999:46). By releasing control over the matching process, Shell RTS was able to "eliminate suspicion and free the pairs to develop a relationship of trust" (Stott and Sweeney 1999:46). In November 1998, two external observers evaluated the RTS mentoring program and found that the "first assignees' [mentees'] ability to select their own mentors 'was a key to the scheme's success'" (Stott and Sweeney, 1999:47).

Possible Improvements

There are several improvements that can be made upon the One DOT Mentoring Program and Shell's mentoring program. First, in both programs, once mentors have filled out their applications, they must wait for mentees to find and contact them. A better program would have the mentees complete a similar application and allow mentors to search for available mentees.

In order to produce successful mentor-mentee matches, the fields included in a matching database should be based on mentoring success factors. For example, since spending time together has been explained as a success factor, there should be a field where mentors can enter the amount of time they can give to prospective mentees. Likewise, mentees should be able to enter the amount of time they feel they will need from prospective mentors.

In order to assess these improvements and the general applicability of the programs, there must be a way to quantify different aspects of mentoring relationships.

By measuring these aspects, organizations can evaluate the success of their mentoring programs and tailor the programs to their specific needs.

Predicting Mentoring Effectiveness

To this point, this chapter has laid out three sets of hypotheses concerning junior officers: These include whether they report their supervisors as mentors, the characteristics of junior officers who have mentors, and factors predicting whether junior officers have mentors. The chapter has discussed how factors like the quality of the relationship and similarities with supervisors influence whether junior officers report their supervisors as mentors. The study put forth the hypothesis that junior officers who have multiple mentors will more likely report a higher sense of competence and have better quality relationships with their supervisors and their mentors. The study also hypothesized that having mentors other than the supervisors was dependent on characteristics of the junior officers and barriers to mentoring. The final hypothesis concerns the relative effectiveness of mentors.

Hypothesis 4: Successful mentoring relationships will be demonstrated by a combination of similarity, leader affect (e.g. LMX), commitment to mentoring, barriers to mentoring, and the awareness of programs that breakdown barriers.

Erikson (1963) stated that mentors choose mentees who are like themselves. Dreher and Cox's (1996) report that people who shared similar gender and race were more likely to begin a mentoring relationship partially supports this theory. As discussed previously, Gibson (1998) found that leader affect and barriers to mentoring were related to the presence of mentors. It follows that an organizational commitment to mentoring

and the implementation of programs that will breakdown the barriers to mentoring will increase the mentoring functions that are provided within an organization. Mentoring functions should therefore be comprised of some combination of these factors.

Measuring Mentoring Functions and Barriers to Mentoring

The ability to measure barriers and mentoring functions allows organizations to quantify their programs' success. These measurements will also allow organizations to identify and improve problem areas in their mentoring programs.

Measuring Mentoring Functions

There has been some controversy about the best way to measure the effectiveness of mentoring functions. The controversy revolves around whether there are two or three types of mentoring. Kram identified two broad categories of mentoring functions, career development and psychosocial (1985). These broad categories have remained at the core of mentoring from the time they were developed. Career development functions "help protégés learn the ropes and facilitate the protégé's advancement in the organization" (Ragins & Cotton, 1999:530). Psychosocial functions are those that "address interpersonal aspects of the mentoring relationship and enhance the protégé's sense of competence, self-efficacy, and professional and personal development" (Ragins & Cotton, 1999:530).

These two functions are found in most measures of mentoring functions. In 1988, Noe conducted a study in which he designed a measure to "assess the various types of functions provided by mentors" (1988:460). He developed thirty-two items "on the basis of career and psychosocial functions identified by previous qualitative analyses and

descriptive studies of mentoring relationships" (1988:466). Noe used an exploratory factor analysis strategy "to identify the constructs underlying the mentoring functions items" (1988:467). The internal consistency reported by Noe for the career development functions scale (7 items) was .89. The psychosocial functions scale, made up of 14 items provided an alpha of .92. Noe reported the intercorrelation between the scales as .49 (1988:469-470).

Tepper, Brown, and Hunt developed "a 16-item measure of supervisory mentoring functions based on Noe's (1988) 29-item scale" (Tepper, Brown & Hunt, 1993:1911) to examine the "moderating effects of subordinate gender" (Tepper, Brown & Hunt, 1993:1903). They found that "men who employ stronger upward influence tactics obtain higher performance ratings and more career-related mentoring functions" (Tepper, Brown & Hunt, 1993:1903). Their results also showed that women who employed "weaker upward influence tactics obtain more psychosocial mentoring functions" (Tepper, Brown & Hunt, 1993:1903).

In 1996, Tepper, Shaffer, and Tepper analyzed the latent structure of Tepper, Brown, and Hunt's (1993) 16-item scale described above. They assessed items' skewness and kurtosis and factor structure (Tepper, Shaffer & Tepper, 1996:848). Their "analyses provided support for a two-factor oblique model" which corresponded with Kram's psychosocial and career-related mentoring functions (Tepper, Shaffer & Tepper, 1996:848).

Other authors have proposed a third category of mentoring functions. Turban and Dougherty added "protection and assistance" to Kram's two-factor theory for their three-

factor measure (1994). Their added function consisted of two items whose correlation was not convincing ($r = .48$). The first item is "protected you from working with other managers or work units before you knew about their likes/dislikes, opinions on controversial topics, and the nature of the political environment" (Turban and Dougherty, 1994:693). Not only is this item long and complicated, it appears to measure more than one perception. The second item, "helped you finish assignments/tasks or meet deadlines that otherwise would have been difficult to complete" (Turban and Dougherty, 1994:693), seems to measure task performance rather than the "protection and assistance" one would receive from a mentor.

The items in the scales from the different researchers are virtually identical even though their hypotheses on the number of factors differ. For example, many of the same items found in Noe's and Tepper, Brown, and Hunt's scales are described in Turban and Dougherty's 1994 research.

An examination of the literature reveals that there is room for many interpretations of the kinds of functions that mentoring provides. This research tests the hypothesis that Kram's mentoring functions along with those described in various other literature (Air Force and Coast Guard publications) best fall into three categories: networking, career development, and psychosocial. Networking functions are best described as those actions that mentors take to expand their mentees' circles of influence. Career development and psychosocial are the same functions hypothesized by Kram (1985).

Table 1

Alternative Allocations of Mentoring Functions

	Noe (1988)	Tepper, Brown and Hunt (1996)
Networking		
Increase awareness of personal contacts		
Responsibilities that increase contact with people who will judge potential	*Career*	*Career*
Projects that increase contact with higher level managers	*Career*	*Career*
Meet new colleagues	*Career*	*Career*
Projects that increase written and personal contact with senior officers	*Career*	
Career development		
Shares personal experiences as alternative to my problems	*Psychosocial*	*Psychosocial*
Informed about higher levels in organization		
Prepare for advancement	*Psychosocial*	*Career*
Projects to learn new skills	*Career*	*Career*
Informed on external conditions affecting organization		
Psychosocial		
Serves as role model	*Psychosocial*	*Psychosocial*
Feelings of respect for me	*Psychosocial*	*Psychosocial*
Talk about anxieties and fears	*Psychosocial*	*Psychosocial*
Displays similar attitudes and values	*Psychosocial*	*Psychosocial*
Interacts with me socially outside of work		

Measuring Barriers to Mentoring

While there is an abundance of research on the measuring of mentoring functions (Kram, 1985; Choa, et al., 1992; Noe, 1988), for many years there were "no published measures" that "define the construct of barriers to mentoring" (Ragins & Cotton, 1991:942). In their 1991 study, Ragins and Cotton developed a 19-item, seven-point Likert-type scale to assess barriers to mentoring. Their research revealed five factors: access to mentors, fear of initiating a relationship, willingness of mentor, approval of others, and misinterpretation (Ragins & Cotton, 1991:942-943).

Searcy, et. al., identify several barriers to mentoring including time and energy, lack of information and, on the part of the mentee, a lack of self-confidence. They state, "Time for mentoring activities is seldom built into one's job, so adequate time to share, reflect, and brainstorm with others is often unavailable" (1995:314). With respect to the lack of information, their research suggests "people do not understand the importance and effectiveness of mentoring, and there is no institutional support for it" (1995:314). The barriers related to a lack of self-confidence on the part of the mentee are demonstrated in their reluctance to ask for clarification. They also suggest that mentees "may feel inadequate for not understanding what the mentor meant or how to implement a suggestion" (1995:315). Mentees may also feel inadequate to attempt a difficult task and be afraid of failing, or they may feel like they are pestering others and thus they may decide to not even begin a mentoring relationship.

Organizational rejection is one of the biggest barriers to commitment to mentoring. Commitment to mentoring was discussed earlier as a success factor to mentoring relationships. Without an atmosphere that is conducive to mentoring, it will be

difficult for individuals to initiate mentoring relationships. On one hand, since the organization does not support mentoring, the supply of mentors will be limited. On the other hand, even if they were able to find willing mentors, the surrounding environment may become hostile, thereby affecting the commitment of the parties involved in the mentoring relationship.

Ragins' and Cotton's research focused on gender differences; this researcher believes that these issues are minimal in a military setting. This belief is supported by Gibson research, which stated: "race and gender were not found to be factors influencing mentoring effectiveness or barriers to mentoring" (1998:62). If one removes the gender-related statements, it appears that the types of barriers fall into three factors. Access to mentors is the same as Ragins' and Cotton's factor of the same name. The second hypothesized type of barrier, hesitation, refers to the reluctance mentees may have when starting a mentoring relationship. Hesitation is a combination of Ragins' and Cotton's fear of initiating a relationship and willingness of mentor factors. The final hypothesized type of barrier, organizational rejection, refers to the perception of how conducive the environment is to mentoring. Organizational rejection is a combination of Ragins' and Cotton's willingness of mentor and approval of others factors.

Summary

Mentoring creates positive outcomes for mentees, mentors, and the organizations of all involved. The Air Force Mentoring Program appears to be setup to take advantage of these positive outcomes. A possible problem with the Air Force Mentoring Program may be its focus on supervisors as a mentors and its failure to recognize the benefits of

multiple mentors. The Coast Guard and Shell RTS observed similar problems in their experience with mentoring and created programs to eliminate these problems. Their solutions may be applicable to the Air Force if it can be shown that the programs are successful. Measures are needed to evaluate the success of these programs. Chapter III develops a method to validate the mentoring measures and test the hypotheses described here.

III. Methodology

Instrument Development

In 1988, Scandura and Katerberg presented a paper entitled "Much ado about mentors and little ado about measurement: Development of an instrument" (Ragins & Cotton, 1999:549) which identified a lack of research in measuring mentoring constructs. Eleven years later, there is still minimal research available on the subject. For this research, modifications of existing scales were made in order to obtain data from both halves of the mentor - mentee dyad. Expert analysis on certain scales was also accomplished to determine the validity of previously determined factors. Out of these processes, two surveys were composed.

The Junior Officer Survey is a 95-item survey mailed to junior officers in the Coast Guard. The junior officers answered questions about their exposure to mentoring, proactive personality, sense of competence, barriers to mentoring, relationship with their supervisor, and relationship with their mentor (if applicable). The complete Junior Officer Survey is included in Appendix A. The Mentor Survey is a 67-item survey that was distributed by junior officers to individuals they considered to be their mentors. Mentors were asked to answer questions about the mentoring process and their relationship with the junior officer. The complete Mentor Survey is included in Appendix B.

Each survey requested the following demographic information: sex, age, military rank or civilian equivalent, time in service, and highest academic degree earned. The junior officers were asked to provide their experience indicator and source of

commission. The mentors were also asked if they were the official rater of their mentee, how long they had been assigned to their current work unit, and the number of personnel they supervised.

Participants

A brief synopsis of the research proposal and surveys was submitted to the United States Coast Guard Leadership & Professional Development Division. Permission to solicit the participation of Coast Guard officers and their mentors was granted by the Chief, Leadership & Professional Development Division. An Air Force Survey Control Number was not required as the survey was distributed to Coast Guard personnel. The Coast Guard treated the surveys as a Freedom of Information Act request, and, therefore, did not require control numbers. Participants were Coast Guard Ensigns, Lieutenants Junior Grade (LTJGs), and their mentors. Four hundred participants, here forward referred to as "junior officers," were randomly selected from a list of the 1319 Ensigns and LTJGs in the Coast Guard as of 13 June 1999. Participation was strictly voluntary and participants were assured complete confidentiality.

Survey packages were distributed via the official base mail system in June 1999. The survey package mailed to the junior officer contained a cover letter, a questionnaire for the junior officer and a survey package for the mentor. Each junior officer was instructed to forward the mentor package to "the one person you would most consider as your mentor." The mentor survey package contained a cover letter and a questionnaire for the mentor. If the junior officer did not feel he or she had a mentor, the officer was

asked to complete only the junior officer questionnaire and return it. Pre-addressed return envelopes were provided for both participant groups.

In order to match Junior Officer and Mentor Surveys, each Junior Officer Survey was stamped with a unique identification number and the same number was stamped on the Mentor Survey. This method allowed the researcher to match returned Mentor Surveys to the corresponding junior officer without requiring the name of the mentor or the junior officer on either survey. This identification system was selected to best protect the privacy of both the junior officer and mentor.

The junior officer cover letter explained what was expected of survey participants and provided a checklist to follow and contact information if there were any questions. The mentor cover letter explained the purpose of the study and identified the junior officer who selected them as his or her mentor. The cover of each survey explained the purpose of the survey, the use of the results, and clarified that participation was voluntary and anonymous to everyone outside the research team. The letter from the researchers on the first page of each survey further explained the study, again assured complete confidentiality, and provided contact information in case participants had questions regarding the survey or the research effort. Survey packages were mailed to 400 junior officers. Ten surveys were returned due to incorrect addresses. A response rate of 23.3% ($n = 91$) was obtained from junior officers. After approximately one month of data collection, the request for participation was reinforced via a follow-up letter sent to all junior officers who had not returned a survey package.

Of the 90 junior officers who answered the gender question, there were 71 males and 19 females. The junior officers varied in age from 22 to 41 years old ($M = 26.9$

years, $SD = 4.00$). The time in service varied from 5 months to 20 years ($M = 26.93$, $SD = 57.87$). There were 29 Ensigns (one with prior military experience), 61 LTJGs (four with prior military experience), and one Lieutenant.

Thirty-five junior officers reported that they considered their supervisor as their mentor. Forty-four junior officers reported having another person (other than their supervisor) who they considered their mentor. Thirteen of these officers also considered their supervisor as their mentor. Therefore, by adding the number of mentors other than the supervisor (44) to the number of supervisory mentors (35) and subtracting those who reported both a supervisory and other mentor (13) results in the maximum number of mentor surveys that could have been returned at 66. Fifty-seven mentors returned a completed survey, however, eleven of these surveys did not correspond to Junior Officer Surveys. Adding these eleven Mentor Surveys to the maximum number of possible surveys results in seventy-seven, indicating a 74.03% response rate.

Of the 57 Mentor Surveys returned, the mentors were military members in ranks from E-7 to O-5. Fifty-two of the mentors were male and four were female. The mentors varied in age from 21 years old to 54 years old ($M = 36.91$, $SD = 6.58$). The 44 mentors who answered the time in service item reported serving between 0 and 360 months ($M = 84.96$, $SD = 134.81$).

Demonstrating Construct Validity

There has been some disagreement on the underlying structure for two of the scales (Barriers to Mentoring and Functions of Mentoring). For each construct in question, a nested confirmatory factor analysis with LISREL 8 (Jöreskog & Sorbom,

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1993) was performed to determine the relationships of the items to the underlying latent constructs. Different plausible models were compared in nested fashion to determine the model with the best relative fit. Each comparison included a model in which all items loaded on a single factor representing a generalized construct. Depending on the competing theories, alternative two, three, four factor models were then compared to the single actor model and, where possible, each other.

The LISREL software analyzes the observed covariance matrix for a set of variables in terms of the hypothesized structure provided. The LISREL output produces several fit indices that reflect the hypothesized model's ability to reproduce the original variance and covariance matrix given the constraints provided in the tested model. One of these fit indices is the Chi-square (χ^2), which measures the differences between the observed and predicted covariance matrices. Larger values of Chi-square reflect more discrepancy between the two matrices.

The Chi-square is reported with the number of degrees of freedom associated with the model. The degrees of freedom are calculated with the following equation: $df = \frac{1}{2}(p + q)(p + q + 1) - t$, where p is the number of observed independent variables, q is the number of observed dependent variables and t is the number of independent parameters estimated. (Jöreskog & Sorbom, 1993:28). Take for example, a covariance matrix with 15 observed items analyzed according to a single factor model. Fifteen parameters would be estimated for the paths from the single construct to each item and fifteen additional paths would be estimated for the error in each item. For this single factor model there would be $\frac{1}{2}(15 + 0)(15 + 0 + 1) - (15 + 15) = 90$ degrees of freedom.

The properties of the Chi-square allow two models that are nested within each to be directly compared. One model is nested in another when it contains all paths in the other model. For each additional path estimated, a degree of freedom is lost. A two-factor model would be nested in the single factor model described above if a portion of the items were assigned to a second underlying variable. The alternative model would still estimate fifteen parameters for the paths to the two underlying constructs, and fifteen paths for the error in each observed item, but would also estimate an additional path to represent the correlation between the two constructs. The resulting degrees of freedom for the two-factor model are 89.

In general, for a given model, the more parameters estimated the more closely the LISREL software can reproduce the observed covariance matrix (Jöreskog & Sorbom, 1993:29). The nested model with fewer degrees of freedom will have a lower chi-square (Jöreskog & Sorbom, 1993:29). If the reduction in Chi-square due to the additional paths is large given the loss of degrees of freedom, then the revised model provides a better fit. A statistically reliable reduction in the value of the model Chi-square given the loss of the degrees of freedom implies that the alternative model provides a better fit to the data.

Five different nested confirmatory factor analyses were conducted. Three analyses were conducted for mentor functions to reflect potential differences between the mentee, supervisor, and mentor perspectives. Two analyses were performed to capture potential differences in barriers from the mentee and mentor perspectives. The results for the confirmatory factor analyses are presented with the appropriate construct in the sections that follow.

Constructs

There were a total of eleven separate constructs used in the Junior Officer and Mentor Surveys. All of these constructs were based on existing scales. Modifications were made to each scale in order to apply to this research. Scale reliability was estimated by calculating the internal consistency of each multi-item scale as indexed by Cronbach's coefficient alpha (Nunnally & Bernstein, 1994:212). The junior officers answered questions about their exposure to mentoring, proactive personality, sense of competence, barriers to mentoring, and their relationship(s) with their supervisor and mentors (if applicable). The mentors answered questions about their exposure to mentoring, reasons for mentoring, their relationship with their mentee, and barriers to mentoring. These constructs will be discussed in greater detail.

Exposure to Mentoring

Three items asked junior officers to indicate if they had knowledge of the One DOT Mentoring Program, had used the One DOT Mentoring Program, had read publications regarding mentoring, received mentoring training, and whether they were familiar with groups or organizations fostering or encouraging mentoring. The same scale was also used in the Mentor survey. Respondents answered the five questions "yes" or "no," and space was provided to list publications, training, and groups or organizations. The results for the junior officers and the mentors are depicted in Table 2.

Proactive Personality and Sense of Competence Scales

This researcher adopted Gibson's (1998) 4-item, Likert-type scale (adapted from Bateman & Crant, 1993) to measure the junior officer's inclinations toward solving

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problems, finding opportunities, and implementing innovations using a seven-point scale

with anchors of "strongly disagree" (1) and "strongly agree" (7). These questions were

only asked in the Junior Officer Survey. The alpha reliability coefficient was calculated

as .59 ($n = 91$).

Table 2

Exposure to Mentoring Results

Exposure to Mentoring Items	Junior Officer		Mentor	
	Yes	No	Yes	No
Aware of One DOT Mentoring Program?	47.3%	52.7%	50.0%	50.0%
If aware, have you used the One DOT Mentoring Program?	7.0%*	93.0%	20.7%**	79.3%
Read publications about mentoring?	78.0%	22.0%	64.9%	35.1%
Had any training in mentoring?	65.9%	34.1%	71.9%	28.1%
Know of any groups or organizations that Foster or encourage mentoring?	74.4%	25.6%	54.4%	45.6%

Note. *3 junior officers (of the 43 who reported awareness of the One DOT
Mentoring Program) reported having used the program; **6 mentors (of the 29 who
reported awareness of the One DOT Mentoring Program) reported having used the
Program.

Five items were selected from Gibson's (1998) adaptation of Wagner & Morse's

(1975) Likert-type scale. This scale measures the respondent's level of technical

competence and job proficiency through self reporting, using a seven-point scale with

anchors of "strongly disagree" (1) and "strongly agree" (7). These questions were only

asked in the Junior Officer Survey. The alpha reliability coefficient was calculated to be .41 ($n = 90$).

The reliability estimates for these two scales were disappointingly low. Gibson (1998) reported an alpha reliability coefficient of .74 for her proactive personality scale, and .78 for her sense of competence scale and a moderate correlation between the two ($r = .39, p < .01$). A second check of the raw data revealed no coding errors, and no apparent reason for the low reliability estimates. Some measure of the junior officers' self-assurance was required to test hypotheses 2 and 3. In an attempt to improve reliability, the two scales were combined providing an alpha reliability coefficient of .63 ($n = 90$). The resulting scale will be referred to after this as junior officer *self-assurance*. Items for the scales can be found in the Junior Officer Survey (Appendix A).

Barriers to Mentoring

In order to measure perceived barriers to mentoring, a modification of Ragins and Cotton's (1991) Likert-type scale was used. Items involving gender barriers were eliminated from their scale, leaving a 13-item seven-point scale with anchors of "strongly disagree" (1) and "strongly agree" (7). Ragins and Cotton present these items as four subscales: access to mentors, fear of initiating, willingness of mentor, and approval of others. An alternative model organized the items into three subscales: access to mentors, hesitation in starting a mentoring relationship, and organizational rejection of mentoring. Access to mentors was the same in the four and three factor models. It consisted of four items such as "I've had a lack of opportunity to meet potential mentors." Fear of initiating a mentoring relationship (4-factor model) consisted of five items such as "I am

afraid of being rejected by a potential mentor." Willingness of mentor (4-factor model) individual items like "I believe potential mentors are unwilling to develop a relationship with me." Approval of others (4-factor model) consisted of two items such as "My immediate supervisor may disapprove of me initiating a mentoring relationship." The three factor model took the fear of initiating items and a single item from willingness of mentor to produce the hesitation factor. The remaining items were combined into the organizational rejection factor. The items used in the Junior Officer Survey were modified to the mentor perspective for the Mentor Survey.

Results of Confirmatory Factor Analysis. The results of nested analyses for the sample of 91 junior officers and 57 mentors across the different types of barriers to mentoring appear in Table 3 (as reported by the junior officer) and Table 4 (as reported by the mentor). In both cases, the results are similar. The three-factor model provided a better fit than a one-factor solution. Ragins and Cotton's theoretical four-factor model, however, provides a statistically reliable improvement of fit over the three-factor model.

Inspections of the residuals and modification indices in the four-factor model revealed a single point of ill fit. The rejection item appears to load on both the fear of initiating a relationship and the willingness of the mentor factors. In order to retain distinct subscales, the rejection item was eliminated from the remainder of the research. Item and scale statistics for the resulting four barrier scales are depicted in Table 5 (as reported by junior officers) and Table 6 (as reported by mentors). The solution for the four-factor model for the junior officer is depicted in Figure 1. The solution for the mentor is depicted in Figure 2.

Table 3

Confirmatory Analysis for Barriers to Mentoring as Reported by Junior Officers

Factors Structure Tested	df	χ^2	Comparison	χ^2Diff	df	GFI	CFI
A) 1 Factor	65	269.37				.64	.64
B) 3 Factor (Hypothesized)	62	127.92	B to A	141.45**	3	.84	.88
C) 4 Factor (Ragins & Cotton)	59	98.15	C to B	29.77**	3	.88	.93
D) 4 Factor (Ragins & Cotton – Revised)	58	85.13	D to C	13.02**	1	.89	.95

Note. (GFI) Goodness of Fit Index; (CFI) Comparative Fit Index; *p<.001; **p<.001; n=90.

Table 4

Confirmatory Analysis for Barriers to Mentoring as Reported by Mentors

Factors Structure Tested	df	χ^2	Comparison	χ^2Diff	df	GFI	CFI
A) 1 Factor	65	270.31				.58	.56
B) 3 Factor (Hypothesized)	62	150.19	B to A	120.12**	3	.73	.81
C) 4 Factor (Ragins & Cotton)	59	88.81	C to B	61.38**	3	.82	.94
D) 4 Factor (Ragins & Cotton – Revised)	58	81.16	D to C	7.65*	1	.83	.95

Note. (GFI) Goodness of Fit Index; (CFI) Comparative Fit Index; *p<.001; **p<.001; n=56.

Table 5

Item and Scale Statistics for Four Types of Barriers as Reported by Junior Officers

Scale/Item	α	M	SD
Access to Mentors	.89	3.92	5.94
I've had a lack of opportunity to meet potential mentors.		3.82	1.76
I've had a lack of opportunity to develop relationships with potential mentors.		3.84	1.68
There is a shortage of potential mentors.		4.06	1.79
There is a lack of access to potential mentors.		3.97	1.65
Fear of Initiating a Relationship	.83	2.88	4.01
I am uncomfortable taking an assertive role in approaching a potential mentor.[1]		3.01	1.60
I believe that it is up to the mentor to make the first move.[1]		2.78	1.61
I am afraid that a potential mentor may be "put off" by such an advancement.[1]		2.86	1.47
Willingness of Mentor	.81	3.11	3.71
I believe potential mentors are unwilling to develop a relationship with me.[2]		3.01	1.30
Potential mentors lack the time to develop a mentoring relationship with me.[2]		3.62	1.76
Potential mentors don't notice me.[1]		2.69	1.26
Approval of Others	.73	2.12	2.17
My immediate supervisor may disapprove of me initiating a mentoring relationship.[1]		2.10	1.22
My co-workers may disapprove of me initiating a mentoring relationship.[1]		2.14	1.23

Note. n = 90, Cronbach's Alpha (α); [1] indicates items from hesitation subscale, and [2] indicates items from organizational rejection subscale from the hypothesized 3-factor model.
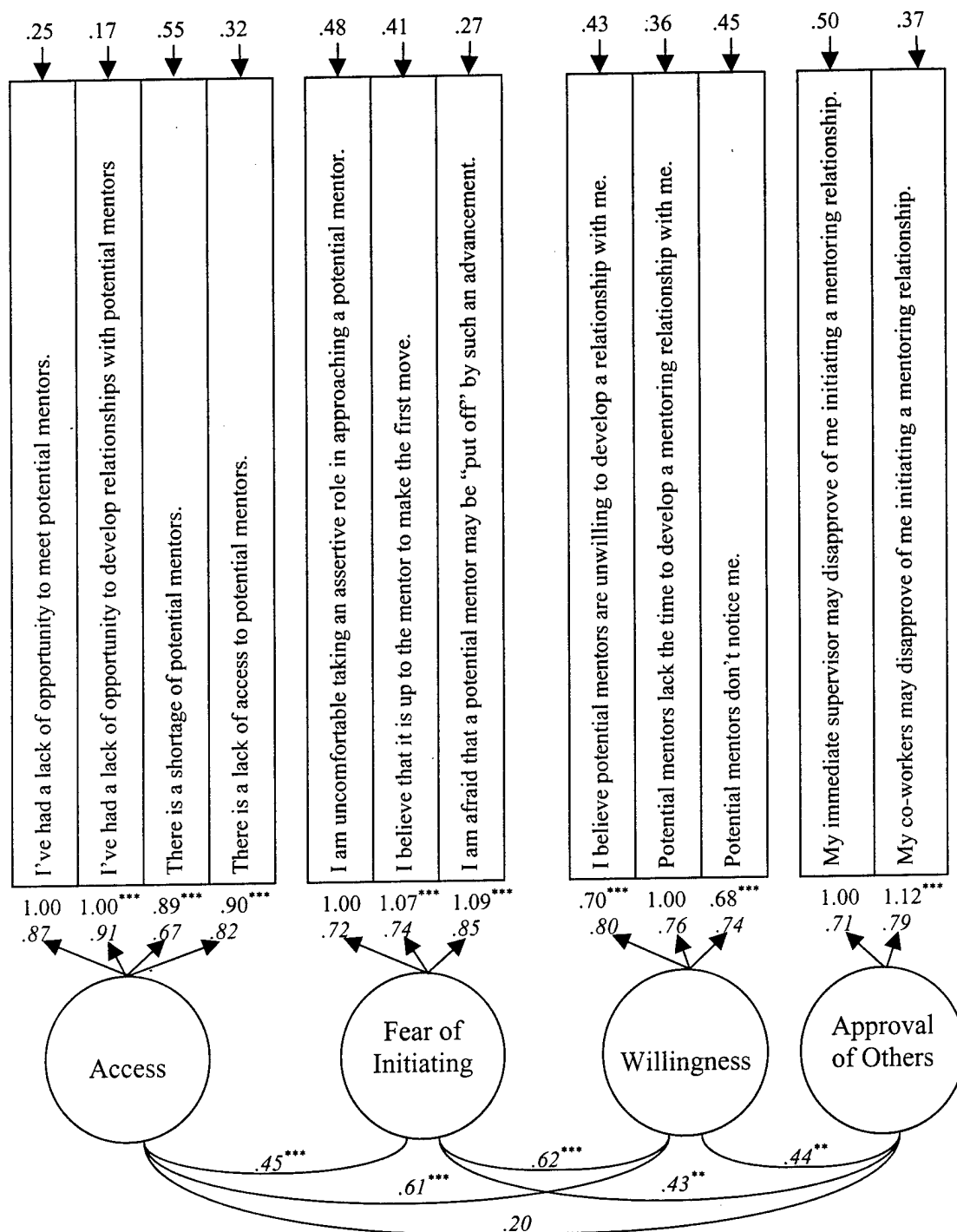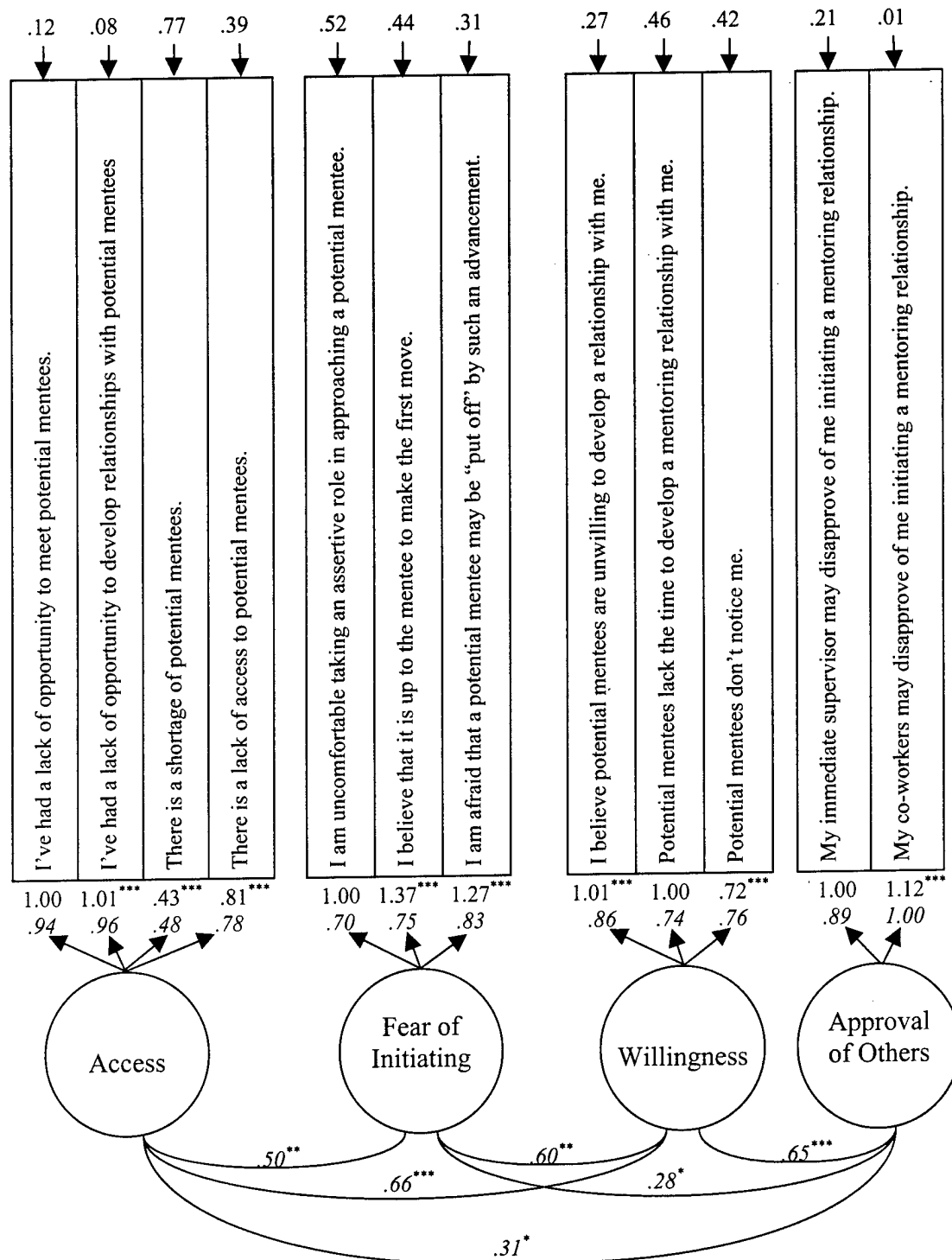
Figure 1. Confirmatory factor structure of Barriers to Mentoring as reported by junior officers -- maximum likelihood solution. Asterisks indicate statistically reliable paths (*p* < .05, **p* < .01, ***p* < .001), *n* = 90, Chi-Square (48) = 66.91, *p* < .05, GFI = .90, CFI = .96. Standardized paths appear in italics.

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Table 6

Item and Scale Statistics for Four Types of Barriers as Reported by Mentors

Scale/Item	α	M	SD
Access to Mentees	.88	2.70	5.56
I've had a lack of opportunity to meet potential mentees.		2.77	1.71
I've had a lack of opportunity to develop relationships with potential mentees.		2.88	1.68
There is a shortage of potential mentees.		2.32	1.42
There is a lack of access to potential mentees.		2.82	1.65
Fear of Initiating a Relationship	.80	2.80	3.90
I am uncomfortable taking an assertive role in approaching a potential mentor.[1]		2.32	1.38
I believe that it is up to the mentor to make the first move.[1]		3.02	1.75
I am afraid that a potential mentor may be "put off" by such an advancement.[1]		3.07	1.46
Willingness of Mentor	.82	2.49	3.66
I believe potential mentors are unwilling to develop a relationship with me.[2]		2.64	1.43
Potential mentors lack the time to develop a mentoring relationship with me.[2]		2.77	1.64
Potential mentors don't notice me.[1]		2.07	1.14
Approval of Others	.94	1.87	1.80
My immediate supervisor may disapprove of me initiating a mentoring relationship.[1]		1.89	.93
My co-workers may disapprove of me initiating a mentoring relationship.[1]		1.84	.93

Note. $n = 56$, Cronbach's Alpha (α); [1] indicates items from hesitation subscale, and [2] indicates items from organizational rejection subscale from the hypothesized 3-factor model.

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Figure 2. Confirmatory factor structure of Barriers to Mentoring as reported by mentors -- maximum likelihood solution. Asterisks indicate statistically reliable paths (*p < .05, **p < .01, ***p < .001), n = 56, Chi-Square (48) = 64.19, *ns*, GFI = .85, CFI = .96. Standardized paths appear in italics.

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Similarity Index

This researcher adapted Gibson's (1998) scale that asked respondents to identify characteristics believed to be shared with another person (i.e. junior officer with supervisor, junior officer with mentor, mentor with mentee). Characteristics included items for gender, age marital status, religion, ethnic background, career factors (field, path, experience and interest), work units, friendship, education, and commission source. Junior officers were asked to complete this 15-item scale comparing themselves to their supervisor and their mentor (if applicable). Mentors were asked to complete this scale comparing themselves to their mentee. Out of fifteen possible characteristics, junior officers reported sharing 5.2 characteristics with their supervisor ($SD = 2.0$). Those with mentors reported sharing 6.6 characteristics with their mentors ($SD = 2.6$). Mentors reported sharing 5.6 characteristics with their mentees ($SD = 2.7$).

Mentor Functions

In order to evaluate the functions provided by mentoring, this research attempted to improve upon Tepper, Shaffer, and Tepper's (2-factor) mentoring function scale (1996). First, the researcher took the 21 items Gibson used in the scale she adapted for her 1998 research. Items were then added from Air Force and Coast Guard documents on mentoring that described functions mentors provide for their mentees. A total of 45 items were printed on separate slips of paper and distributed to 4 Air Force officers along with 4 blank envelopes. The officers were instructed to divide the items into four groupings, placing the items for each grouping into an envelope and writing what they believed the name of the grouping to be.

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Analysis of the groupings determined that three different functions were actually described. These three functions were networking, career development, and psychosocial functions. Five items were selected to measure each type of mentoring function. Ten of the total fifteen items included in the surveys are common to Tepper, Shaffer, and Tepper's mentoring function scale (1996). The resulting 15-item, five-point, Likert-type scale used anchors of "Not at all" (1) and "To a very large extent"(5).

Junior officers were asked to complete this scale to evaluate the mentoring functions provided by their supervisor and by their mentor. Mentors were asked to complete this scale to evaluate the mentoring functions they provide to their mentee.

Results of Confirmatory Factor Analysis. The results of nested analyses for the sample of 91 junior officers and 57 mentors across the mentoring functions appear in Table 7 (as reported by the junior officer) and Table 8 (as reported by the mentor). In each case, the results are different. For mentoring functions by the supervisor as reported by the junior officer, a revision of Noe's and Tepper, Shaffer, and Tepper's two-factor theory improves fit over the one-factor model. A review of the modification indices, however, suggested several points of ill fit. The results suggested a three-factor model might provide a better fit to the data.

The three-factor model is not nested in the two-factor model, because the added factor borrows items from both of the original two factors. Since the model is not nested, a direct comparison to the two-factor model is not feasible. The three-factor model, however, is nested in the one factor model, and provides a statistically reliable improvement in fit. All indices of the hypothesized three-factor model point to an overall good model fit that is better than the two-factor model.

Table 7

Confirmatory Analysis for Mentoring Functions as Reported by Junior Officers

Factors Structure Tested	*df*	χ^2	Comparisons	χ^2 Diff	*df*	GFI	CFI
Supervisor (n = 90)							
A) 1 Factor	44	275.44				.57	.68
B) 2 Factor (Noe)	43	156.72	B to A	118.72**	1	.74	.84
C) 2 Factor (Tepper, Shaffer, & Tepper)	43	170.94	C to A	104.5**	1	.74	.82
D) 2 Factor (Revised)	40	119.71	-			.78	.89
E) 3 Factor (Hypothesized)	41	83.12	E to A	192.32**	3	.86	.94
F) 3 Factor (Hypothesized - Revised)	40	60.88	F to A	214.56**	4	.89	.97
Mentor (n = 43)							
A) 1 Factor	44	104.90				.62	.71
B) 2 Factor (Noe)	43	61.39	B to A	43.51**	1	.80	.91
C) 2 Factor (Tepper, Shaffer, & Tepper)	43	61.68	C to A	43.22**	1	.80	.91
D) 2 Factor (Revised)	42	55.26	-			.82	.94
E) 3 Factor (Hypothesized)	41	70.51	E to A	34.39**	3	.77	.86

Note. (GFI) Goodness of Fit Index; (CFI) Comparative Fit Index; *p* < .001; **p* < .001.

The three-factor model is not nested in the two-factor model, because the added factor borrows items from both of the original two factors. Since the model is not nested, a direct comparison to the two-factor model is not feasible. The three-factor model, however, is nested in the one factor model, and provides a statistically reliable improvement in fit. All indices of the hypothesized three-factor model point to an overall good model fit that is better than the two-factor model.

Table 8

Confirmatory Analysis for Mentoring Functions as Reported by Mentors

Factors Structure Tested	df	χ^2	Comparisons	χ^2 Diff	df	GFI	CFI
A) 1 Factor	44	151.16				.60	.71
B) 2 Factor (Noe)	43	61.07	B to A	90.09**	1	.85	.95
C) 2 Factor (Tepper, Shaffer, & Tepper)	43	77.76	C to A	73.4**	1	.81	.91
D) 2 Factor (Revised)	41	53.34	D to A	97.82**	3	.86	.97
E) 3 Factor (Hypothesized)	41	75.01	E to A	76.15**	3	.80	.91

Note. (GFI) Goodness of Fit Index; (CFI) Comparative Fit Index; $*p < .001$; $**p < .001$; $n = 56$.

Inspections of the residuals and modification indices revealed a single point of ill fit in the model. The role item appears to load on multiple factors. In order to provide distinct scales for the three underlying functions of mentoring, the item was eliminated from all scales. The results imply that the hypothesized three-factor model provides a better explanation of the underlying patterns in the ten measured variables. Item and scale statistics for the three scales can be found in Table 9. The maximum likelihood solution for the four-factor model for mentoring functions by the supervisor as reported by the junior officer is depicted in Figure 3.

For the mentoring functions by the mentor as reported by the junior officer, a revision of Noe's and Tepper, Shaffer, and Tepper's two-factor theories provides a better fit than either the one-factor or the three-factor models. All indices of the revised (Noe and Tepper, Shaffer, and Tepper) two-factor model point to an overall good model fit.

Table 9

Item and Scale Statistics for Mentoring Functions by the Supervisor as Reported by

Junior Officers

Scale/Item	α	M	SD
Networking	.89	2.95	4.16
My supervisor assigns responsibilities to me that have increased my contact with people who will judge my potential for future advancement.		2.88	1.26
My supervisor gives me projects that have increased my contact with higher level managers.		3.22	1.18
My supervisor helps me meet new colleagues.		2.56	1.18
My supervisor gives me projects that increase written and personal contact with senior officers.		3.13	1.18
Career development	.86	3.32	3.18
My supervisor shares personal experiences as an alternative perspective to my problems.		3.12	1.17
My supervisor encourages me to prepare for advancement.		3.29	1.27
My supervisor gives me projects that present opportunities to learn new skills.		3.54	1.15
Psychosocial	.90	3.19	3.72
My supervisor conveys feelings of respect for me as an individual.		3.54	1.30
My supervisor encourages me to talk openly about anxieties and fears that detract from my work.		3.00	1.43
My supervisor displays attitudes and values similar to my own.		3.02	1.34

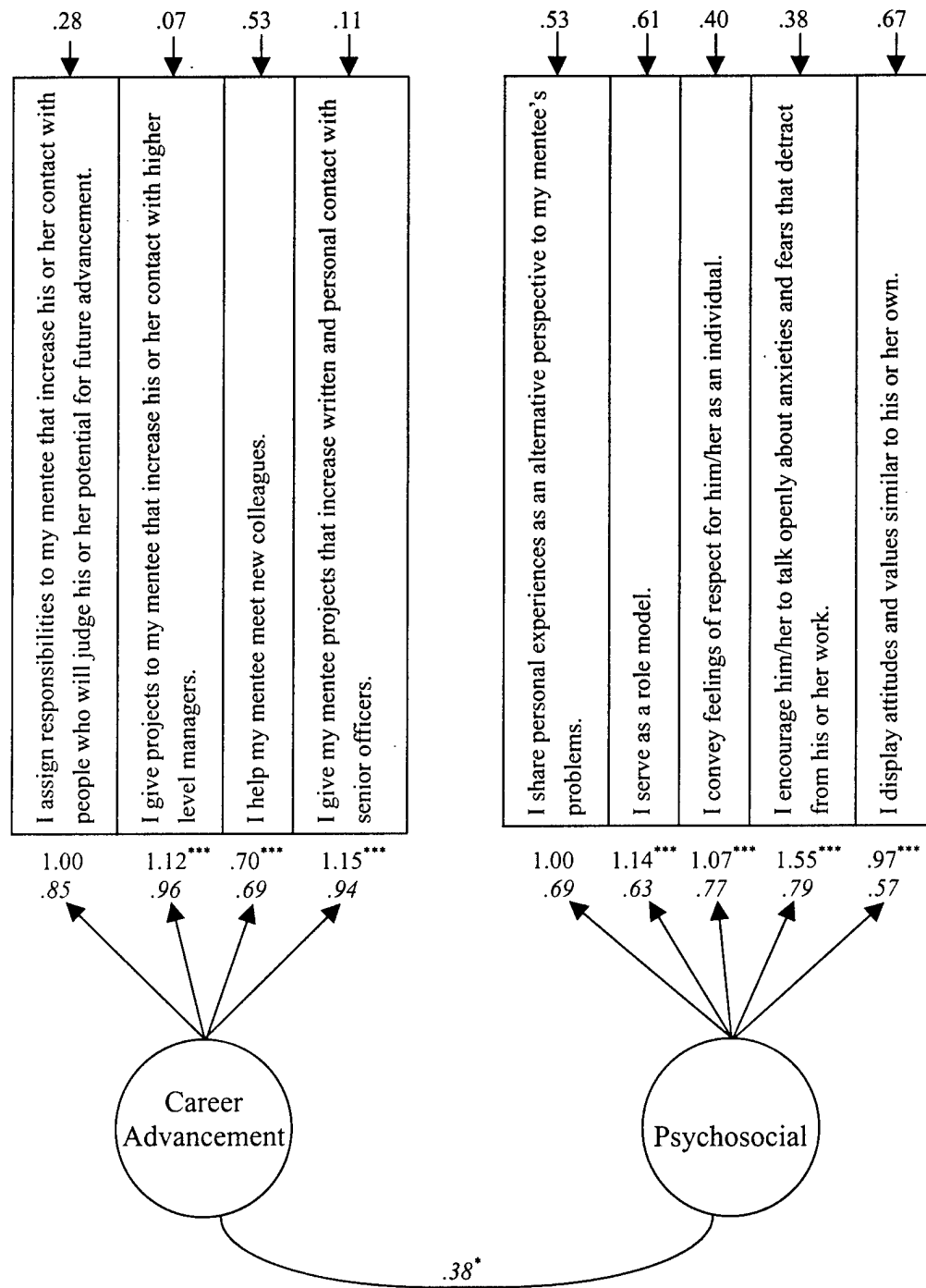*Note.* $n = 90$, Cronbach's Alpha (α).
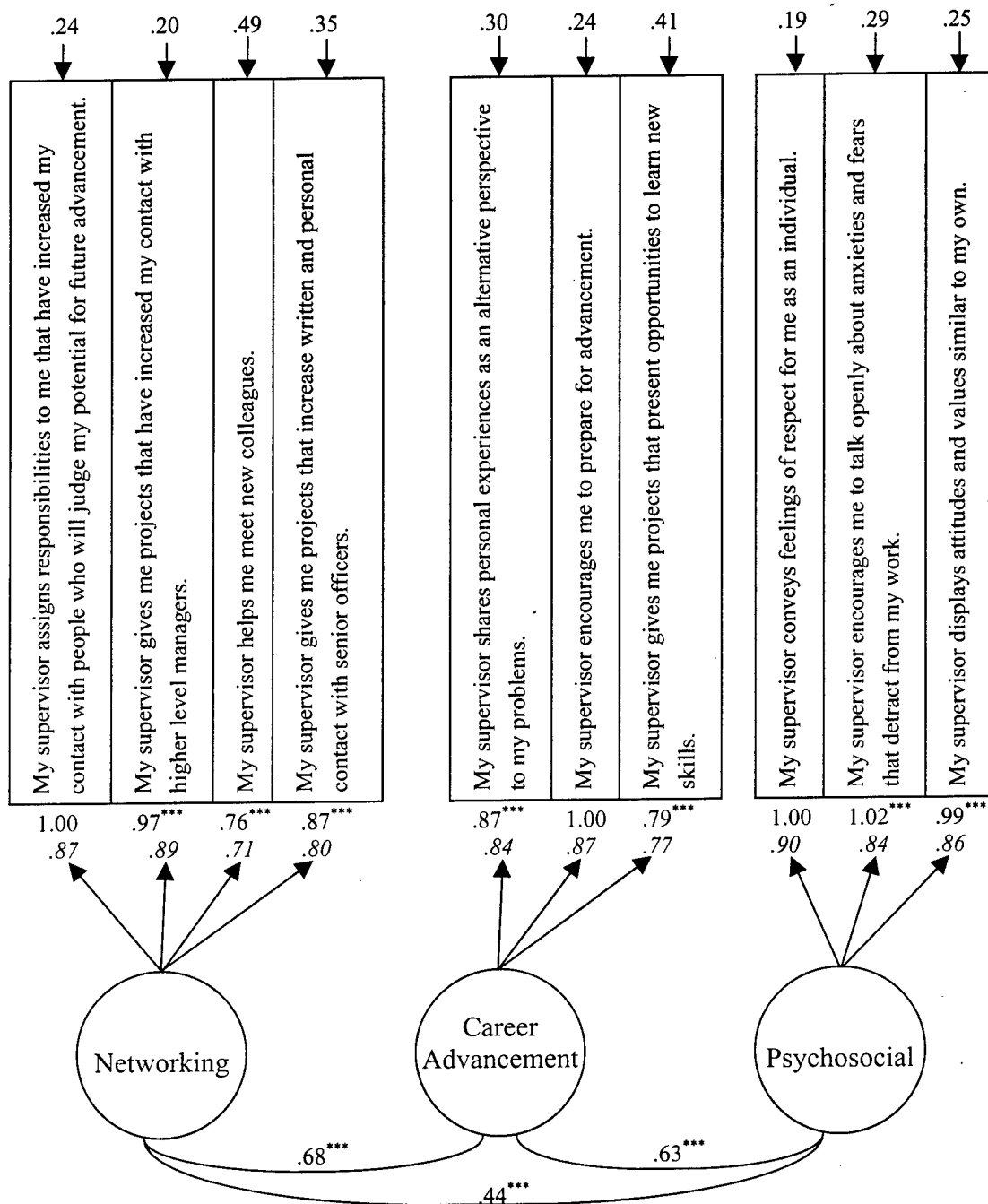
Figure 3. Confirmatory factor structure of Mentoring Functions by the supervisor as reported by junior officers -- maximum likelihood solution. Asterisks indicate statistically reliable paths (*$p < .05$, **$p < .01$, ***$p < .001$), $n = 90$, Chi-Square (32) = 42.90, *ns*, GFI = .91, CFI = .98. Standardized paths appear in italics.

Inspections of the residuals and modification indices, however, revealed several points of ill fit in the model. The personal experiences, advancement, and new skills items appear to load on multiple factors. These items were eliminated, in order to provide distinct scales for the two categories of mentoring functions by the mentor. The results imply that a revised (Noe and Tepper, Shaffer, and Tepper) two-factor model provides a better explanation of the underlying patterns in the eight measured variables. Item and scale statistics for the two scales can be found in Table 10. The maximum likelihood solution for the four-factor model for mentoring functions by the mentor as reported by the junior officer is depicted in Figure 4.

For the mentoring functions by the mentor as reported by the mentor, the revision of Noe's and Tepper, Shaffer, and Tepper's two-factor theories provides a better fit than either the one-factor or the three-factor models. All indices of the revised (Noe and Tepper, Shaffer, and Tepper) two-factor model point to an overall good model fit. Inspections of the residuals and modification indices reveal two points of ill fit in the model. The advancement and new skills items appear to load on multiple factors. In order to provide two distinct scales for the self-reports of mentor functions, the items were eliminated from the analysis. The results imply that a revised (Noe and Tepper, Shaffer, and Tepper) two-factor model provides a better explanation of the underlying patterns in the nine measured variables. Item and scale statistics for the two scales can be found in Table 11. The maximum likelihood solution for the four-factor model for mentoring functions as reported by the mentor is depicted in Figure 5.

Table 10

Item and Scale Statistics for Mentoring Functions by the Mentor as Reported by Junior

Officers

Scale/Item	α	M	SD
Career development	.87	2.67	4.30
I assign responsibilities to my mentee that increase his or her contact with people who will judge his or her potential for future advancement.		2.56	1.30
I give projects to my mentee that increase his or her contact with higher level managers.		2.47	1.26
I help my mentee meet new colleagues.		3.21	1.21
I give my mentee projects that increase written and personal contact with senior officers.		2.44	1.30
Psychosocial	.75	4.38	2.21
I serve as a role model.		4.42	.70
I convey feelings of respect for him/her as an individual.		4.60	.58
I encourage him/her to talk openly about anxieties and fears that detract from his or her work.		4.16	.95
I display attitudes and values similar to his or her own.		4.33	.64

Note. $n = 43$, Cronbach's Alpha (α).
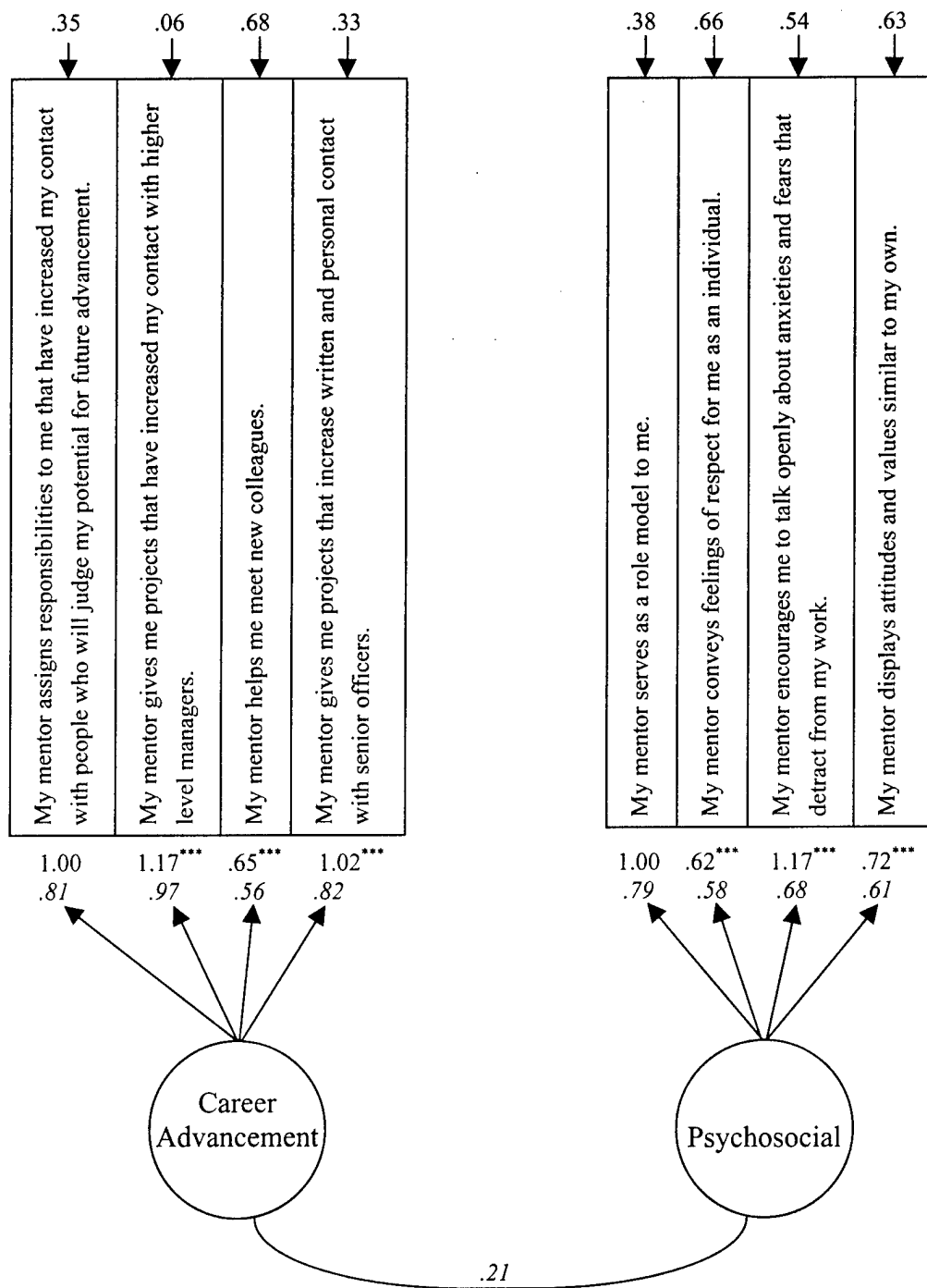
Figure 4. Confirmatory factor structure of Mentoring Functions by the mentor as reported by junior officers -- maximum likelihood solution. Asterisks indicate statistically reliable paths (*p < .05, **p < .01, ***p < .001), *n* = 43, Chi-Square (19) = 28.77, *ns*, GFI = .86, CFI = .93. Standardized paths appear in italics.

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Table 11

Item and Scale Statistics for Mentoring Functions by the Mentor as Reported by Mentors

Scale/Item	α	M	SD
Career development	.92	3.09	4.60
I assign responsibilities to my mentee that increase his or her contact with people who will judge his or her potential for future advancement.		3.05	1.30
I give my mentee projects that increase his or her contact with higher level managers.		3.11	1.30
I help my mentee meet new colleagues.		3.00	1.14
I give my mentee projects that increase written and personal contact with senior officers.		3.18	1.34
Psychosocial	.81	3.83	3.38
I share personal experiences as an alternative perspective to my mentee's problems.		4.05	.77
I serve as a role mode.		3.59	.97
I convey feelings of respect for him/her as an individual.		4.21	.73
I encourage him/her to talk openly about anxieties and fears that detract from his or her work.		3.66	1.05
I display attitudes and values similar to his or her own.		3.64	.90

Note. $n = 56$, Cronbach's Alpha (α).

Figure 5. Confirmatory factor structure of Mentoring Functions by the mentor as reported by mentors -- maximum likelihood solution. Asterisks indicate statistically reliable paths (p < .001), *n* = 56, Chi-Square (26) = 31.78, *ns*, GFI = .89, CFI = .98. Standardized paths appear in italics.

Reasons for Mentoring

Mentors were asked six questions from Gibson's (1998) research about their reasons for mentoring. These questions were measured on a 7-point Likert scale with anchors of "strongly disagree" (1) to "strongly agree" (7). The first three questions asked why they decided to be a mentor. The final three questions asked why they were mentoring the junior officer who sent them the survey. The alpha reliability coefficient for the six-item scale was calculated as .73 ($n = 42$).

As displayed in Table 12, most of the mentors reported that they wanted to be mentors (83% reported slightly agree, agree or strongly agree). Whether the mentors thought they had to be mentors was not clear, but most said they were not directed to be mentors (74% reported strongly disagree or disagree).

Table 12

Reasons for Mentoring

| | n | ←——disagree——→ | | | | ←——agree——→ | | |
		1	2	3	4	5	6	7
I wanted to	55	2%	0%	2%	13%	5%	33%	45%
I had to	54	19%	19%	0%	20%	19%	19%	6%
I was directed to	54	52%	22%	0%	13%	9%	4%	0%

The data in Table 13 indicates that most mentors reported that they wanted to mentor the junior officer who sent them the survey (78% reported slightly agree, agree or strongly agree). Again, the responses for whether they thought they had to were inconclusive. Finally, most mentors said they were not directed to mentor the junior

officer who sent them the survey (69% reported strongly disagree, disagree, or slightly disagree).

Table 13

Reasons for Mentoring this Junior Officer

		←——disagree——→				←——agree——→		
	n	1	2	3	4	5	6	7
I wanted to	53	0%	0%	2%	21%	4%	34%	40%
I had to	52	19%	17%	0%	35%	8%	13%	8%
I was directed to	52	44%	21%	4%	17%	8%	6%	0%

Perceptions of Risk

This researcher adopted Gibson's (1998) 6-item, Likert-type scale (based on Ragins and Scandura, 1994) to measure the perceptions of risks associated with mentoring the junior officer who sent them the survey. The scale used a seven-point scale with anchors of "strongly disagree" (1) and "strongly agree" (7). The alpha reliability coefficient was calculated as .87 ($n = 57$). Items for the scales can be found in the Mentor Survey (Appendix B).

Leader/Member Exchange (LMX)

This researcher used Scandura and Graen's (1984), Likert-type scale to measure the junior officer's perceptions of the quality of his relationships with his supervisor and his mentor (if applicable). The six questions used a seven-point scale with anchors of "strongly disagree" (1) and "strongly agree" (7). The alpha reliability of the scale measuring supervisor LMX was calculated as .95 ($n = 91$). The alpha reliability of the

scale measuring mentor LMX was calculated as .81 ($n = 44$). Items for the scales can be found in the Junior Officer Survey (Appendix A).

Analyses

To test the first set of hypotheses (1.a, b, c) a binary logistic regression using SPSS 9.0 was conducted for the likelihood of junior officers reporting their supervisors as mentors. Independent variables included supervisor LMX, supervisor mentor functions, supervisor similarity, and whether the supervisor was civilian or military. The binary logistic regression analysis is used when the dependent variable can take on one of two values, in this case either the junior officers reported their supervisors as mentors or they did not.

The second hypothesis looked at the relative effects of reporting having no mentors to reporting having multiple mentors. Analysis of variance (ANOVA) was conducted to look at the combined and interactive effects of having multiple mentors on junior officers' self-assurance, supervisor LMX, and mentor LMX.

To test the third hypothesis, it was necessary to determine the likelihood of junior officers reporting other mentors. This likelihood was believed to be a function of whether junior officers reported their supervisors as mentors, the barriers to mentoring (as perceived by junior officers), junior officers' self-assurance, and their awareness of the One DOT Mentoring Program. Awareness of the One DOT Mentoring Program was included because it could mitigate barriers. A binary logistic regression analysis was used to ascertain whether or not these factors impacted the likelihood of junior officers reporting additional mentors.

In order to test the fourth hypothesis, multiple linear regressions were accomplished for the two categories of mentor functions (career development and psychosocial). The independent variables included perceptions from the mentee, the mentor, and both the mentee and mentor. The junior officers reported mentor similarity and LMX and awareness of mentoring programs. The mentor reported perceptions of risk and reasons for mentoring. Barriers to mentoring were reported from both the mentee and mentor perspective.

Summary

Chapter II explained that it is necessary to use measures to develop and evaluate mentoring programs to determine their success. This chapter presented a method to validate some measures of mentoring and explained the methodology behind testing the hypotheses presented in Chapter II. Chapter IV will present the analyses described in this chapter.

IV. Results and Analysis

Overview

This chapter describes the results of the statistical analyses performed to test the hypotheses posited in Chapter II. The data for each of these analyses was obtained from the Junior Officer Survey (Attachment A) and the Mentor Survey (Attachment B). The data was analyzed using binary logistics regressions, ANOVAs, pairwise comparisons, and linear regressions.

Factors Influencing the Reporting of Supervisors as Mentors

A binary logistics regression analysis sought to determine if the status of the supervisor (civilian or military), supervisor similarity, and the quality of the relationship with the supervisor (LMX, networking, career development and psychosocial mentoring functions) influenced the likelihood that junior officers would report their supervisors as mentors. The correlation matrix, shown in Table 14, reveals high correlations between supervisor LMX and supervisor mentoring functions. These items therefore cannot be included in the same Logistics Regression because of multicollinearity problems. To eliminate the multicollinearity problem, separate regressions were performed for supervisor LMX and supervisor mentoring functions, each with similarity as a co-predictor.

The results of the Logistics Regression (Table 15) revealed that both supervisor similarity and LMX increased the likelihood of junior officers reporting their supervisors as mentors. The coefficient for supervisor status was not statistically different than zero. The more characteristics shared, the more likely junior officers were to report their

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supervisors as their mentors. The better the relationship between junior officers and their supervisors, the more likely junior officers were to report their supervisors as mentors.

Table 14

Correlations of Supervisor LMX and Supervisor Mentoring Functions

	Sup LMX	Similarity	Networking	Career	Psychosocial
Supervisor LMX	1.000				
Supervisor similarity	.262*	1.000			
Networking	.511**	.082	1.000		
Career development	.712**	.066	.642**	1.000	
Psychosocial	.828**	.323**	.407**	.558**	1.000

Note. * $p < 0.05$, ** $p < 0.01$ (2-tailed).

Table 15

Logistics Regression for the Reporting of Supervisors as Mentors with Supervisor LMX

Variable	B	S.E.	Wald	Df	Sig.	Exp(B)
Supervisor civilian?	1.735	1.217	2.034	1	.154	5.671
Supervisor similarity	.398	.141	7.993	1	.005	1.489
Supervisor LMX	.794	.266	8.890	1	.003	2.212
Constant	-8.399	2.094	16.086	1	.000	.000

Note. $p < .10$ implies statistical reliability at $\alpha = .05$ for one-tailed hypothesis test.

The results of the second Logistics Regression (Table 16) revealed that supervisor similarity and networking and psychosocial mentoring functions increased the likelihood of junior officers reporting their supervisors as mentors. The more junior officers perceived their supervisors provided networking functions, the more likely they reported their supervisors as mentors. The same was true for psychosocial functions. As with the previous Logistics Regression, supervisor similarity predicted the likelihood of junior officers reporting their supervisors as mentors and supervisor status did not.

Table 16

Logistics Regression for the Reporting of Supervisors as Mentors with Supervisor

Mentoring Functions

Variable	B	S.E.	Wald	Df	Sig.	Exp(B)
Supervisor civilian?	1.874	1.210	2.401	1	.121	6.516
Supervisor similarity	.494	.169	8.590	1	.003	1.639
Networking	.813	.388	4.397	1	.036	2.255
Career development	.560	.449	1.555	1	.212	1.751
Psychosocial	.459	.278	2.719	1	.099	1.582
Constant	-10.807	2.441	19.602	1	.000	.000

Note. $p < .10$ implies statistical reliability at $\alpha = .05$ for one-tailed hypothesis test.

Of 89 junior officers who answered the question, 54 (60.7%) reported that their supervisors were not their mentors. With no additional information, the probability of being correct when always predicting that junior officers would report that their

supervisors were not their mentors would be 60.7%. Considering the supervisor

similarity and LMX variables increases the likelihood of predicting correctly to 73%.

Taking into consideration the supervisor similarity and mentoring functions increases the

likelihood of predicting correctly to 76%.

Relative Effects of No Mentors Versus Multiple Mentors

Two analyses of variance (ANOVAs) were conducted to explore any differences

between the reports of self-assurance and supervisor LMX dependent on whether junior

officers reported their supervisors as mentors and whether junior officers reported other

mentors. The results of the ANOVA containing self-assurance (Table 17) revealed a

statistically reliable interaction between the two factors, indicating there was a difference

between junior officers who did not consider their supervisors as mentors and did not

have additional mentors, with all other possible combinations. The means (Table 18)

indicate that junior officers who did not report any mentors reported lower self-assurance

(Figure 6).

Table 17

Tests of Between-Subjects Effects with Self-Assurance as the Dependent Variable

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Observed Power
Intercept	2292.703	1	2292.703	6426.453	.000	1.000
Supervisor Mentor	.477	1	.477	1.338	.251	.208
Other Mentor	.135	1	.135	.379	.540	.093
Interaction	.983	1	.983	2.757	.100	.375
Error	31.038	87	.357			

Note. $R^2 = .058$; $p < .10$ implies statistical reliability at $\alpha = .05$ for one-tailed test.

Table 18

Means and Standard Deviations for Self-Assurance

	Additional Mentor		No Additional Mentor	
	Mean	Std Dev	Mean	Std Dev
Supervisor Mentor	5.28	.45	5.43	.60
Supervisor NOT Mentor	5.35	.62	5.06	.62
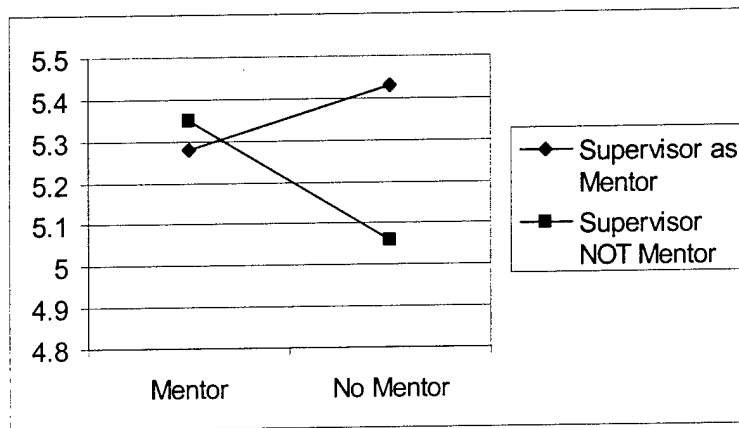
Figure 6. Plot of means for self-assurance.

The results of the ANOVA containing supervisor LMX (Table 19) revealed that there was a statistically reliable difference between junior officers who did not consider their supervisors as mentors and those who did consider their supervisors as their mentors. There were no effects due to having another mentor, nor was there an interaction between the two factors. The means (Table 20) indicate that junior officers who did not report their supervisors as mentors reported lower supervisor LMX (Figure 7).

Table 19

Tests of Between-Subjects Effects with LMX as the Dependent Variable

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Observed Power
Intercept	2231.434	1	2231.434	1231.520	.000	1.000
Supervisor Mentor	29.842	1	29.842	16.470	.000	.980
Other Mentor	7.483E-02	1	7.483E-02	.041	.839	.055
Interaction	.341	1	.341	.188	.666	.071
Error	155.826	86	1.812			

Note. $R^2 = .058$; $p < .10$ implies statistical reliability at $\alpha = .05$ for one-tailed test.

Table 20

Means and Standard Deviations for Supervisor LMX

	Additional Mentor		No Additional Mentor	
	Mean	Std Dev	Mean	Std Dev
Supervisor Mentor	5.87	1.00	5.80	.77
Supervisor NOT Mentor	4.53	1.71	4.72	1.37
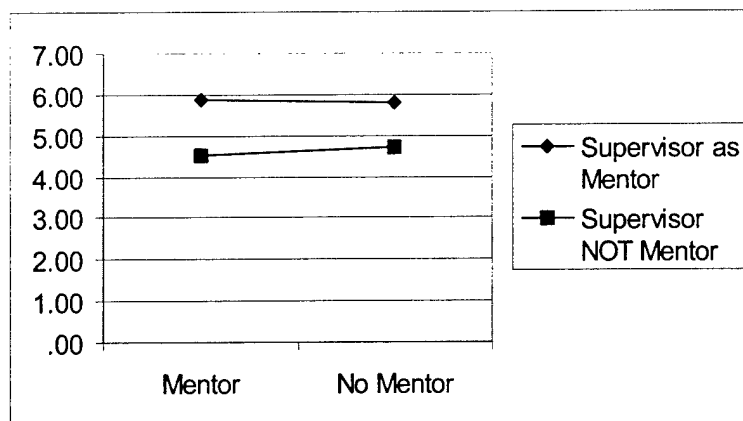
Figure 7. Plot of means for supervisor LMX.

A Pairwise Comparison was conducted to explain the relationships between reports of supervisors as mentors with mentor LMX and mentoring functions (psychosocial and career development). The results show a statistically reliable difference for mentor LMX ($t = 2.54$, $p<.05$). There were not statistically reliable differences for psychosocial or career development mentoring functions. The means and standard deviations appear in Table 21.

Table 21

Group Statistics for Pairwise Comparison Between Reports of Supervisors as Mentors, Mentor LMX and Mentoring Functions

	Supervisor Mentor	N	Mean	Std Dev	Std. Error Mean
Mentor LMX	0	30	6.3333*	.4795	8.754E-02
	1	14	5.9048*	.6017	.1608
Psychosocial	0	30	4.4667	.5074	9.264E-02
	1	13	4.1731	.6156	.1707
Career	0	30	2.8333	.9499	.1734
	1	13	2.2885	1.2823	.3556

Note. Means are different ($p <.05$).

Factors Influencing the Reporting of an Additional Mentor

A binary logistics regression analysis sought to determine if reports of supervisors as mentors, barriers to mentoring (lack of access to mentors, fear of initiating, lack of willingness of mentors and approval of others), self-assurance, and awareness of

mentoring programs influenced the likelihood that junior officers would report having someone other than their supervisors as mentors. An examination of the independent variable correlations (Table 22) revealed statistically reliable correlations between supervisor mentoring functions and junior officer self-assurance. These correlations are not very high, however, so it is unlikely that there are any multicollinearity problems.

Table 22

Correlations of Supervisor Mentoring Functions and Junior Officer Self-Assurance

	Access to mentors	Fear of initiating	Willingness of mentor	Approval of others	Self-assurance
Access to mentors	1.000				
Fear of initiating	.391**	1.000			
Willingness of mentor	.510**	.501**	1.000		
Approval of others	.180	.326**	.338**	1.000	
Self-assurance	-.130	-.205	-.184	-.311**	1.000

** Correlation is statistically reliable at the 0.01 level (2-tailed).

The results of the Logistics Regression (Table 23) revealed that junior officers reporting their supervisors as mentors, and having access to mentors, increased the likelihood of junior officers reporting they had additional mentors. If junior officers reported that their supervisors were not their mentors, they were more likely to report that they had additional mentors. Similarly, the fewer reports of lack of access to mentors as a barrier, the more likely junior officers were to report having an additional mentor. The

logistics regression was conducted again with reports of supervisors as mentors, access to mentors, and one each of the other variables separately to ensure multicollinearity was not an issue. None of the other variables were found to be statistically reliable as predictors.

Table 23

Logistics Regression for the Reporting of Additional Mentors with Reports of Supervisors as Mentors, Barriers to Mentoring, Self-Assurance, and Awareness of Mentoring Programs

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Supervisor mentor?	-1.054	.508	4.295	1	.038	.349
Access to mentors	-.347	.187	3.435	1	.064	.707
Fear of initiating	-.174	.211	.683	1	.409	.840
Willingness of mentors	-.170	.243	.486	1	.486	.844
Approval of others	.131	.245	.286	1	.593	1.140
Self-assurance	.319	.409	.607	1	.436	1.376
Awareness	.234	.485	.232	1	.630	1.263
Constant	.407	2.611	.024	1	.876	1.502

Note. p < .10 implies statistical reliability at α = .05 for one-tailed hypothesis test.

Of 89 junior officers who answered the question, 46 (51.7%) reported that they did not have additional mentors. With no additional information, the probability of being

correct when always predicting that junior officers would report additional mentors would be 51.7%. Taking into consideration whether or not supervisors were reported as mentors and reported access to mentors increases the likelihood of predicting correctly to 73%.

Demonstrating Successful Mentoring Relationships

Linear regressions were accomplished to analyze the mentoring functions (psychosocial and career development) in terms of mentor similarity, mentor LMX, awareness of mentoring programs, perceptions of risk, reasons for mentoring, and barriers to mentoring. Reports of barriers to mentoring from both the mentee and mentor perspective were used in the regressions. The correlation matrix (Table 24) reveals that career development mentoring functions correlated with no other variables. The psychosocial mentoring functions were correlated with mentor LMX, reasons for mentoring, and both mentee and mentor reports of the barrier, fear of initiating.

The results of the Linear Regression (Table 25) revealed that mentor LMX was a predictor of psychosocial mentoring functions. The higher the mentor LMX reported by junior officers, the more likely they were to report that they received psychosocial mentoring functions. The Linear Regression was re-accomplished with all possible combinations of the other variables with LMX in order to verify the results described above. None of the other variables were found to be predictors of psychosocial mentoring functions.

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Table 24

Correlations of Mentoring Functions, Mentor Similarity, Mentor LMX, Awareness of Mentoring Programs, Perceptions of

Risk and Reasons for Mentoring, and Barriers to Mentoring

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Psychosocial	1.00													
Career	-.10	1.00												
Similarity	.01	.03	1.00											
LMX	.72 **	.13	.21	1.00										
Risk	-.28	.00	-.03	-.25	1.00									
Reasons	.37 *	-.05	.24	.38 *	-.46 **	1.00								
Mentee														
Access	-.23	-.02	-.19	-.28	.14	-.31 *	1.00							
Fear of Initiating	-.30 *	.26	-.29	-.44 **	.11	-.16	.35 *	1.00						
Willingness	-.05	-.13	-.18	-.24	.02	-.06	.42 **	.31	1.00					
Approval of Others	.14	.02	-.23	-.16	.21	-.01	.14	.36 *	.38 **	1.00				
Mentor														
Access	-.03	-.16	.06	-.12	.37 *	-.38 *	-.01	-.05	.12	-.07	1.00			
Fear of Initiating	-.49 **	-.05	-.15	-.62 **	.50 **	-.52 **	.14	.26	.12	.08	.38 *	1.00		
Willingness	.02	-.1	.06	-.01	.44 **	-.29	-.14	-.17	-.04	-.04	.56 **	.46 **	1.00	
Approval of Others	.02	.00	-.08	-.03	.21	-.33 *	-.08	-.30 *	-.16	-.11	.25	.19	.60 **	1.00

Note. $* p < 0.05, ** p < 0.01$ (2-tailed).

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Table 25

Linear Regression to Predict Psychosocial Mentoring Functions

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.246	1.458		-.169	.867
Mentor LMX	.704	.180	.617	3.916	.000
Reasons for mentoring	8.540E-02	.093	.122	.916	.366
Awareness	-.180	.180	-.120	-.997	.325
Mentor fear of initiating	-2.550E-02	.087	-.045	-.292	.772
Mentee fear of initiating	4.868E-03	.079	.008	.062	.951

Note. $R^2 = .538$; $p < .10$ implies statistical reliability at $\alpha = .05$ for one-tailed test.

Summary

This chapter presented the analyses described in Chapter III. The data revealed that supervisor similarity, LMX, and networking and psychosocial mentoring functions increased the likelihood of junior officers reporting their supervisors as mentors. Junior officers who did not report any mentors reported lower self-assurance. Junior officers who did not report their supervisors as mentors reported lower supervisor LMX whether or not they had another mentor. Junior officers reporting their supervisors as mentors and fewer reports of the barrier "lack of access to mentors" increased the likelihood that junior officers reported additional mentors. Career development mentoring functions could not be predicted with the variables used in either survey. Psychosocial mentoring functions, however were predicted by LMX.

V. Discussion

Overview

This research effort set out to determine how organizations could best take advantage of the benefits of mentoring. The research demonstrated the need for measures that could be used to build and appraise mentoring programs. The measures developed in this study could assist organizations by focusing its attention on problem areas and help the organization facilitate successful mentoring relationships among its personnel.

This chapter discusses the results determined by the statistical analyses performed in Chapter IV. These analyses are compared to the hypotheses set forth in Chapter II and conclusions regarding this research are made. Finally, a discussion of the limitations of this research and implications for further research are presented.

Hypothesis 1: Junior Officers' Relationships with Their Supervisors

Hypothesis 1 proposed that the likelihood of junior officers reporting their supervisors as mentors could be predicted by examining the relationships between the junior officers and their supervisors. The relationships measured included supervisor status (civilian or military), LMX, mentoring functions and similarity. This hypothesis was divided into three sub-hypotheses to further examine these relationships.

Hypothesis 1a suggested that if junior officers reported high quality relationships with their supervisors, they were more likely to report their supervisors as mentors. Hypothesis 1b stated that junior officers who reported low quality relationships with their supervisors would be less likely to report their supervisors as mentors. Hypothesis 1c asserted that the less similar junior officers and their supervisors are, the less likely junior

officers will report their supervisors as mentors. The binary logistics regression analyses described in Chapter IV strongly support these positions. The analyses demonstrated that supervisor similarity and LMX were positively related to the likelihood of junior officers reporting their supervisors as mentors. Networking and psychosocial mentoring functions were also found to be positively related to the reporting of supervisors as mentors. Taking into consideration supervisor similarity and LMX increased predictability by 12.3%. Accounting for supervisor similarity and mentoring functions increased predictability by 15.3%.

Hypothesis 2: Advantages of Multiple Mentors

Hypothesis 2 attempted to investigate the question of whether having multiple mentors simply compensates for limitations of the supervisor or mentor, or if it provides a synergistic effect. To support a synergistic theory of mentoring, junior officers should have higher self-assurance and better quality relationships with their supervisors and their other mentors. The data did not support this theory. Junior officers with multiple mentors did not have higher self-assurance, supervisor LMX, or mentor LMX. Also, there were no differences in mentoring functions for supervisors or mentors.

There were however, differences in self-assurance for junior officers who reported no mentors compared to those junior officers who reported one or more mentors. There were also differences in LMX for both the supervisor and the mentor. These differences were supportive of a compensatory theory of mentoring.

Junior officers without mentors reported (by far) the lowest self-assurance of any group. Having any mentor was associated with higher self-assurance among junior officers.

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Junior officers who reported their supervisors as mentors had significantly higher LMX than those who did not report their supervisors as mentors. Having another mentor did not improve supervisor LMX. Further, mentor LMX was stronger for junior officers who reported that their supervisor was not their mentor. The mentoring relationship was compensating for limitations in the supervisor relationship. Junior officers who had a supervisory mentor did not have to find mentoring from another source. Junior officers who did not have a supervisory mentor did have to seek mentoring elsewhere. These findings are directly in support of a compensatory theory in hypothesis 2a.

Hypothesis 3: Junior Officers' Relationships with Their Mentors

Hypothesis 3 forwards the concept that the likelihood of junior officers reporting mentors other than their supervisors could be predicted by examining the reports of junior officers on barriers to mentoring, self-assurance, and awareness of mentoring programs. This hypothesis was separated into three sub-hypotheses to inspect these prediction factors.

Hypotheses 3a, b and c suggested that junior officers who reported fewer barriers to mentoring, higher self-assurance, and more awareness of mentoring programs would also be more likely to report having another mentor. The binary logistics regression analyses described in Chapter IV revealed that reporting their supervisors as mentors and a single barrier, lack of access to mentors, were the only variables that reliably predicted whether or not junior officers reported additional mentors. Reports of self-assurance from junior officers with multiple mentors were positively related to the likelihood of having multiple mentors, but the coefficient was not statistically reliable. This may be

attributed to the low reliability for this measure. Awareness of mentoring programs also did not predict likelihood of another mentor. This may be due to the short amount of time the One DOT Mentoring Program has been in existence or the lack of knowledge about the system. Taking into consideration whether or not supervisors were reported as mentors and reports of the barrier, lack of access to mentors increased the predictability of whether or not junior officers reported an additional mentor by 21.3%.

Hypothesis 4: Predicting Mentoring Relationships

Hypothesis 4 posited that successful mentoring relationships could be predicted by factors such as similarity, relationship quality, commitment and barriers to mentoring, and the awareness of programs such as the One DOT Mentoring Program that seek to break down barriers. The analyses described in Chapter IV examined the possibility of predicting the career development and psychosocial mentoring functions provided by mentors.

The results of these analyses were that none of the measures used in the surveys (Appendices A and B) predicted mentoring functions. This researcher believes that once a junior officer begins a mentoring relationship, aspects such as barriers to mentoring, reasons for mentoring, and perceptions of risk do not have an impact on the mentoring relationship. This supports Linda Phillips-Jones (1982) belief that finding the right mentor is the most important part of a mentoring relationship.

Discussion

The results described above illustrate that mentoring is important. The finding that junior officers without any mentors reported the lowest self-assurance demonstrates

that this group is in most need of the benefits mentoring provides. This is the group that is overlooked by the way the Air Force Mentoring Program is currently set up. The Air Force must focus its program to provide mentors to junior officers who do not consider their supervisors as mentors and do not have additional mentors.

With respect to the likelihood of junior officers obtaining additional mentors, the only barrier that proved significant was lack of access to mentors. A database system, such as the One DOT Mentoring Program, should minimize the impact of this barrier. This research, however, was unable to determine whether the One DOT Mentoring Program was successful because it was only operational for six months at the time of data collection. In addition, publicity for the program was not effective, as evidenced by the low awareness percentages (47.3% of junior officers and 50.8% of mentors surveyed).

Implications for Future Research

Gibson's (1998) research revealed a lack of exposure to the Air Force Mentoring Program. The results of this research found a similar lack of exposure to the One DOT Mentoring Program. An investigation into the marketing and publicity of mentoring programs could be very revealing.

The results of this research suggest that a matching database could break down the barrier, lack of access to mentors. A study that develops such a database and evaluates its usefulness and ease of use may prove beneficial in developing a successful mentoring program. Also, a longitudinal study that compares the mentoring relationships of CGOs who use such a database with those who do not could establish a precedent for the implementation of mentoring databases across the Air Force.

Limitations

There were two major limitations regarding this study. First and foremost was the low return rate from Coast Guard officers. The return rate percentages from mentors were substantially higher than from junior officers. A larger sample size may have provided more insight into mentoring within the Coast Guard. Two possible issues arise because of a small sample size. First, non-respondent bias could be a problem. It is possible that only those who thought mentoring was important responded to the survey. The second issue is the power for the confirmatory factor analyses. Some LISREL users believe that the sample size necessary for LISREL to provide an accurate analysis is 50. The LISREL manuals, however, do not identify a specific sample size requirement. While the LISREL outputs did not reveal any power problems, some of the marginal variables may become significant with a larger sample size.

The second limitation was the recentness of the public release of the One DOT Mentoring Program. Since the system had only been operational for approximately six months, exposure to the program was not as high as expected. Higher reports of awareness of the program would have allowed further analysis into the success of the program in breaking down the barrier, lack of access to mentors.

Conclusion

This research validated measures that organizations can use to examine their mentoring environment. These measures can help them determine where to focus their attention in order to improve their current programs. The research showed that the most important barrier to remove is access to mentors and that a mentoring program should

concentrate on breaking down this barrier. It also demonstrated that those who can most benefit from mentoring are the ones who most mentoring programs exclude. The Air Force can successfully use mentoring to pass along its important message. To do this, it must develop a program to reduce problems with access to mentors, especially for those junior officers who do not consider their supervisors as mentors.

APPENDIX A: JUNIOR OFFICER SURVEY

A SURVEY TO ASSESS EFFECTIVE MENTORING CHARACTERISTICS

Privacy Notice

Conducted by the
AIR FORCE INSTITUTE OF TECHNOLOGY

AIR UNIVERSITY (AETC)
DEPARTMENT OF THE AIR FORCE

for

United States Coast Guard, Office of Leadership and Diversity

There are many things we know about mentoring in organizations. We know that mentoring can have an important influence on retaining personnel in an organization. We also know that many organizations establish different types of mentoring programs. Regrettably, there is little evidence to show which mentoring programs work the best.

To this date, organizations have not had a convenient way of measuring the quality of their mentoring programs. Without a valid measure, organizations start new programs without basing them on actual data. The goal of this research project is to establish a baseline to evaluate mentoring programs within the Coast Guard. This research project will also be used to help improve mentoring programs in the Air Force.

You can be assured complete confidentiality. Findings will be reported at the group level only, so no one in the Coast Guard will be able trace your responses back to you. I would like to sincerely thank you for your participation.

Respectfully,

Kristopher A. Singer   Paul W. Thurston
Air Force Institute of Technology   Air Force Institute of Technology

CONTACT INFORMATION

If you have any questions, please feel free to contact me or my thesis advisor, Major Paul Thurston.

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INSTRUCTIONS

1. *Please answer directly on the questionnaire.*
2. *Please complete the questionnaire, seal it in the provided envelope and return it in the enclosed addressed envelope through your base mail system to:*
   AFIT/LAL Survey Collection Point, Wright-Patterson AFB, OH.

> *In order to learn more about the survey population, we are asking for information about you.*

1. Are you:
   O Male
   O Female

2. Your age:

   Years: _____

3. Your rank:

   Rank: _____

4. How long have you been in the Coast Guard (include prior service)?

   Total Months: _____

5. Indicate your Experience Indicator:

   Indicator: _____

6. Your source of commission:
   O OCS
   O USCGA
   O Direct Commission
   O N/A

7. Your highest academic degree earned:
   O 4-Yr degree
   O Bachelor's +(15 or more graduate credits)
   O Master's degree
   O Ph.D.
   O Other: _____

> *The following questions will provide insight into your familiarity with ongoing mentoring programs. This information will show exposure to mentoring for the survey population.*

8. Are you aware of the One DOT Mentoring Program?
   O Yes
   O No

9. If Yes, have you used the One DOT Mentoring Program?
   O No
   O Yes   If yes, and you would fill out an evaluation survey, please enter your email address *(your privacy is ensured)*.
             Enter email address: _____

10. Have you read publications about mentoring?
    O No
    O Yes   If yes, which one(s)? _____

11. Have you had any training in mentoring?
    O No
    O Yes   If yes, what training? _____

12. Do you know of any groups or organizations that foster or encourage mentoring?
    O No
    O Yes   If yes, what groups? _____

> *In this next section, you will be asked about your work habits.*
>
> *Carefully consider each statement and mark the number that indicates the extent to which you believe each statement is true.*

strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

13. When I have a problem, I tackle it head on.

   ①   ②   ③   ④   ⑤   ⑥   ⑦

14. I can spot a good opportunity long before others can.

   ①   ②   ③   ④   ⑤   ⑥   ⑦

15. Nothing is more exciting than seeing my ideas turn into reality.

   ①   ②   ③   ④   ⑤   ⑥   ⑦

16. If I believe in an idea, no obstacle will prevent me from making it happen.

   ①   ②   ③   ④   ⑤   ⑥   ⑦

17. I would make a fine role model for a new officer to follow.

   ①   ②   ③   ④   ⑤   ⑥   ⑦

18. I do **not** know as much as others do about my job.

   ①   ②   ③   ④   ⑤   ⑥   ⑦

19. No one around here knows how to get things done better than I do.

   ①   ②   ③   ④   ⑤   ⑥   ⑦

20. When it comes to my job, if anyone can find the answer, I can.

   ①   ②   ③   ④   ⑤   ⑥   ⑦

21. I honestly believe I have all the skills to perform well as an officer.

   ①   ②   ③   ④   ⑤   ⑥   ⑦

> *The remainder of this survey contains four sections. In each section, it is important that you understand what we mean by "mentor" and "supervisor."*
>
> *Mentor:*   *An individual with experience and knowledge committed to voluntarily providing support to you and increasing your upward mobility.*
>
> *Supervisor: An individual who oversees your daily work activities, assigns tasks, provides resources when appropriate, and provides performance feedback.*

> *Sometimes people have difficulty obtaining a mentor because of barriers. We think these barriers fall into three basic categories. The first category, access to mentors, refers to the problems of not being able to find mentors in your organization. The second category, hesitation, refers to the risks involved in starting a mentoring relationship. The third category, organizational rejection, refers to a negative attitude by your organization towards mentoring.*
>
> *Carefully consider each statement and mark the number that indicates the extent to which you believe each statement is true about barriers you have encountered.*

I have had difficulty INITIATING a mentoring relationship because...

strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

22. I've had a lack of opportunity to meet potential mentors.

① ② ③ ④ ⑤ ⑥ ⑦

23. I've had a lack of opportunity to develop relationships with potential mentors.

① ② ③ ④ ⑤ ⑥ ⑦

24. There is a shortage of potential mentors.

① ② ③ ④ ⑤ ⑥ ⑦

25. There is a lack of access to potential mentors.

① ② ③ ④ ⑤ ⑥ ⑦

I have been reluctant to start a mentoring relationship because...

strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

26. I believe potential mentors are unwilling to develop a relationship with me.

① ② ③ ④ ⑤ ⑥ ⑦

27. I am afraid of being rejected by a potential mentor.

① ② ③ ④ ⑤ ⑥ ⑦

28. I am uncomfortable taking an assertive role in approaching a potential mentor.

① ② ③ ④ ⑤ ⑥ ⑦

29. I believe that it is up to the mentor to make the first move.

① ② ③ ④ ⑤ ⑥ ⑦

30. I am afraid that a potential mentor may be "put off" by such an advancement.

① ② ③ ④ ⑤ ⑥ ⑦

It would be difficult for me to start a mentoring relationship because...						
strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

31. My immediate supervisor may disapprove of me initiating a mentoring relationship.

① ② ③ ④ ⑤ ⑥ ⑦

32. My co-workers may disapprove of me initiating a mentoring relationship.

① ② ③ ④ ⑤ ⑥ ⑦

33. Potential mentors lack the time to develop a mentoring relationship with me.

① ② ③ ④ ⑤ ⑥ ⑦

34. Potential mentors don't notice me.

① ② ③ ④ ⑤ ⑥ ⑦

Sometimes people are mentored by their supervisor, other times there is another person who acts as a mentor. The next section concentrates on your supervisor and asks questions about your mentoring relationship with him/her.

35. What is the rank (if USCG) or civilian equivalent (WG, GS, SES, etc.) of your supervisor?

Rank/Equivalent:_____

36. How long have you known your supervisor?

Total Months: _____

37. How long had you been assigned to your work unit before you began working for your current supervisor?

Total Months: _____

38. How long have you worked for your current supervisor?

Total Months: _____

39. From the following choices, fill in the circles below to indicate the characteristics you and your supervisor have in common (Fill in all circles that apply).

O Gender
O Age
O Marital Status
O Religion
O Ethnic Background

O Career Field
O Anticipate Having Similar Career Path
O Previous Career-Related Experience
O Similar Off-Duty Interests
O Association with Other Members of Supervisor's Family

O Work Unit
O Friendship
O Education Level
O Source of Commission
O Other (please specify):

To what extent does your supervisor help you establish a network of contacts from whom to seek assistance or advice...				
Not at all	To a slight extent	To some extent	To a large extent	To a very large extent

40. My supervisor increases my awareness of the personal contacts I have.

    ①   ②   ③   ④   ⑤

41. My supervisor assigns responsibilities to me that have increased my contact with people who will judge my potential for future advancement.

    ①   ②   ③   ④   ⑤

42. My supervisor gives me projects that have increased my contact with higher level managers.

    ①   ②   ③   ④   ⑤

43. My supervisor helps me meet new colleagues.

    ①   ②   ③   ④   ⑤

44. My supervisor gives me projects that increase written and personal contact with senior officers.

    ①   ②   ③   ④   ⑤

To what extent does your supervisor help you prepare for advancement...				
Not at all	To a slight extent	To some extent	To a large extent	To a very large extent

45. My supervisor shares personal experiences as an alternative perspective to my problems.

    ①   ②   ③   ④   ⑤

46. My supervisor keeps me informed about what is going on at higher levels in the organization.

    ①   ②   ③   ④   ⑤

47. My supervisor encourages me to prepare for advancement.

    ①   ②   ③   ④   ⑤

48. My supervisor gives me projects that present opportunities to learn new skills.

    ①   ②   ③   ④   ⑤

49. My supervisor keeps me informed on external conditions that are influencing the organization.

    ①   ②   ③   ④   ⑤

To what extent does your supervisor enhance your esteem and confidence...				
Not at all	To a slight extent	To some extent	To a large extent	To a very large extent

50. My supervisor serves as a role model to me.

① ② ③ ④ ⑤

51. My supervisor conveys feelings of respect for me as an individual.

① ② ③ ④ ⑤

52. My supervisor encourages me to talk openly about anxieties and fears that detract from my work.

① ② ③ ④ ⑤

53. My supervisor displays attitudes and values similar to my own.

① ② ③ ④ ⑤

54. My supervisor interacts with me socially outside of work.

① ② ③ ④ ⑤

To what extent is your relationship with your supervisor effective? Carefully consider each statement and mark the number that indicates the extent to which you believe each statement is true.						
strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

55. My working relationship with my supervisor is effective.

① ② ③ ④ ⑤

56. My supervisor seems to understand my problems and needs.

① ② ③ ④ ⑤

57. I can count on my supervisor to "bail me out," even at his/her expense when I really need it.

① ② ③ ④ ⑤

58. My supervisor has enough confidence in me that he/she would defend and justify my decisions if I were not present to do so.

① ② ③ ④ ⑤

59. Regardless of how much power my supervisor has built into his/her position, he/she would be personally inclined to use his/her power to help me solve problems in my work.
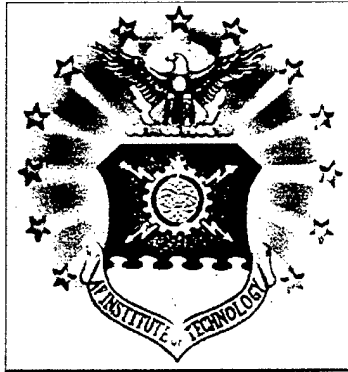
① ② ③ ④ ⑤

60. My supervisor recognizes my potential.

① ② ③ ④ ⑤

61. Telephone?　　　　　　　　　　Percentage of Contacts: _____%

62. EMAIL?　　　　　　　　　　　　Percentage of Contacts: _____%

63. Facsimile?　　　　　　　　　　Percentage of Contacts: _____%

64. Face-to-Face?　　　　　　　　Percentage of Contacts: _____%

Total percentage of Contacts: ___100___%

67. What is the rank (if USCG) or civilian equivalent (WG, GS, SES, etc.) of your mentor?

Rank/Equivalent:_____

68. How long have you known your mentor?

Total Months: _____

69. From the following choices, fill in the circles below to indicate the characteristics you and your mentor have in common (Fill in all circles that apply).

○ Gender　　　　　○ Career Field　　　　　　　　　　　　　○ Work Unit
○ Age　　　　　　　○ Anticipate Having Similar Career Path　　○ Friendship
○ Marital Status　　○ Previous Career-Related Experience　　　○ Education Level
○ Religion　　　　　○ Similar Off-Duty Interests　　　　　　　○ Source of Commission
○ Ethnic Background　○ Association with Other Members of　　　○ Other (please specify):
　　　　　　　　　　　　Supervisor's Family

70. What one characteristic do you believe is the most responsible for the development of this mentoring relationship (choice may be different than items listed in Question 69):

Enter Characteristic: _____

To what extent does your mentor help you establish a network of contacts from whom to seek assistance or advice...				
Not at all	To a slight extent	To some extent	To a large extent	To a very large extent

71. My mentor increases my awareness of the personal contacts I have.

① ② ③ ④ ⑤

72. My mentor assigns responsibilities to me that have increased my contact with people who will judge my potential for future advancement.

① ② ③ ④ ⑤

73. My mentor gives projects that have increased my contact with higher level managers.

① ② ③ ④ ⑤

74. My mentor helps me meet new colleagues.

① ② ③ ④ ⑤

75. My mentor gives me projects that increase written and personal contact with senior officers.

① ② ③ ④ ⑤

To what extent does your mentor help you prepare for advancement...				
Not at all	To a slight extent	To some extent	To a large extent	To a very large extent

76. My mentor shares personal experiences as an alternative perspective to my problems.

① ② ③ ④ ⑤

77. My supervisor keeps me informed about what is going on at higher levels in the organization.

① ② ③ ④ ⑤

78. My mentor encourages me to prepare for advancement.

① ② ③ ④ ⑤

79. My mentor gives me projects that present opportunities to learn new skills.

① ② ③ ④ ⑤

80. My supervisor keeps me informed on external conditions that are influencing the organization.

① ② ③ ④ ⑤

To what extent does your mentor enhance your esteem and confidence...				
Not at all	To a slight extent	To some extent	To a large extent	To a very large extent

81. My mentor serves as a role model to me.

   ①   ②   ③   ④   ⑤

82. My mentor conveys feelings of respect for me as an individual.

   ①   ②   ③   ④   ⑤

83. My mentor encourages me to talk openly about anxieties and fears that detract from my work.

   ①   ②   ③   ④   ⑤

84. My mentor displays attitudes and values similar to my own.

   ①   ②   ③   ④   ⑤

85. My mentor interacts with me socially outside of work.

   ①   ②   ③   ④   ⑤

Estimate the number of contacts you have with your mentor during an average week. If you do not have contact every week, divide the amount of time spent over a longer period by the number of weeks.

When communicating with your supervisor during an average week, how many times is the contact via:

---

86. Telephone?   Percentage of Contacts: _____%

87. EMAIL?   Percentage of Contacts: _____%

88. Facsimile?   Percentage of Contacts: _____%

89. Face-to-Face?   Percentage of Contacts: _____%

                               Total percentage of Contacts: ___100___%

> *To what extent is your relationship with your mentor effective?*
>
> *Carefully consider each statement and mark the number that indicates the extent to which you believe each statement is true.*

strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

90. My working relationship with my mentor is effective.

   ①   ②   ③   ④   ⑤   ⑥   ⑦

91. My mentor seems to understand my problems and needs.

   ①   ②   ③   ④   ⑤   ⑥   ⑦

92. I can count on my mentor to "bail me out," even at his/her expense when I really need it.

   ①   ②   ③   ④   ⑤   ⑥   ⑦

93. My mentor has enough confidence in me that he/she would defend and justify my decisions if I were not present to do so.

   ①   ②   ③   ④   ⑤   ⑥   ⑦

94. Regardless of how much power my mentor has built into his/her position, he/she would be personally inclined to use his/her power to help me solve problems in my work.

   ①   ②   ③   ④   ⑤   ⑥   ⑦

95. My mentor recognizes my potential.

   ①   ②   ③   ④   ⑤   ⑥   ⑦

> *Thank you for taking the time to complete this questionnaire.*
>
> *Finally, please provide any additional comments you may have regarding mentoring, your mentoring relationship, or suggestions to improve this survey. Feel free to add additional pages if necessary.*

Please use the enclosed envelope to return this survey to:
AFIT/LAL Survey Collection Point, Wright-Patterson AFB, OH.

APPENDIX B: MENTOR SURVEY

A SURVEY TO ASSESS EFFECTIVE MENTORING CHARACTERISTICS

Privacy Notice

Conducted by the
AIR FORCE INSTITUTE OF TECHNOLOGY

AIR UNIVERSITY (AETC)
DEPARTMENT OF THE AIR FORCE

for

United States Coast Guard, Office of Leadership and Diversity

There are many things we know about mentoring in organizations. We know that mentoring can have an important influence on retaining personnel in an organization. We also know that many organizations establish different types of mentoring programs. Regrettably, there is little evidence to show which mentoring programs work the best.

To this date, organizations have not had a convenient way of measuring the quality of their mentoring programs. Without a valid measure, organizations start new programs without basing them on actual data. The goal of this research project is to establish a baseline to evaluate mentoring programs within the Coast Guard. This research project will also be used to help improve mentoring programs in the Air Force.

You can be assured complete confidentiality. Findings will be reported at the group level only, so no one in the Coast Guard will be able trace your responses back to you. I would like to sincerely thank you for your participation.

Respectfully,

Kristopher A. Singer
Air Force Institute of Technology

Paul W. Thurston
Air Force Institute of Technology

CONTACT INFORMATION

If you have any questions, please feel free to contact me or my thesis advisor, Major Paul Thurston.

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INSTRUCTIONS

2. *Please answer directly on the questionnaire.*
2. *Please complete the questionnaire, seal it in the provided envelope and return it in the enclosed addressed envelope through your base mail system to:*
   AFIT/LAL Survey Collection Point, Wright-Patterson AFB, OH.

1. Are you:
O Male
O Female

2. Your age:

Years: _____

3. Your rank (if Coast Guard) or civilian equivalent (WG, GS, SES, etc.)?

    Rank/Equivalent:_____

4. Your highest academic degree earned:
O 4-Yr degree
O Bachelor's +(15 or more graduate credits)
O Master's degree
O Ph.D.
O Other: _____

5. Are you the official rater of your mentee? (i.e., Do you write his/her performance report?)
    O Yes
    O No

6. How long have you been assigned to your current work unit?

    Total Months: _____

7. How long have you been in the civil service (include all service)?

Total Months: _____

8. Number of personnel you supervise:

    Number: _____

9. Are you aware of the One DOT Mentoring Program?
  O Yes
  O No

10. If Yes, have you used the One DOT Mentoring Program?
  O No
  O Yes   If yes, and you would fill out an evaluation survey,
              please enter your email address *(your privacy is ensured)*.
              Enter email address: _____

11. Have you read publications about mentoring?
  O No
  O Yes   If yes, which one(s)? _____

12. Have you had any training in mentoring?
  O No
  O Yes   If yes, what training? _____

13. Do you know of any groups or organizations that foster or encourage mentoring?
  O No
  O Yes   If yes, what groups? _____

In this next section, you will be asked the way you feel about mentoring a junior officer now. This information will show the attitude toward mentoring in the survey population.

Carefully consider each statement and mark the number that indicates the extent to which you believe each statement is true.

Why did you decide to be a mentor?

strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

14. I wanted to do it.
   ① ② ③ ④ ⑤ ⑥ ⑦

15. I thought I had to do it.
   ① ② ③ ④ ⑤ ⑥ ⑦

16. I was directed to do it.
   ① ② ③ ④ ⑤ ⑥ ⑦

17. Other (please specify): _____

My Supervisor...

strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

18. Knows of my mentoring work.
   ① ② ③ ④ ⑤ ⑥ ⑦

19. Is glad that I am an active mentor.
   ① ② ③ ④ ⑤ ⑥ ⑦

20. Has encouraged me to be a mentor.
   ① ② ③ ④ ⑤ ⑥ ⑦

> *The following questions will provide information about your current mentee. This information will be used to compare you with your mentee.*
>
> *Questions in this section refer to the officer whose name appears on the front of this survey*

21. From the following choices, please indicate the characteristics that you and your mentee have in common. (Fill in <u>all</u> circles that apply)

- O Gender
- O Age
- O Marital Status
- O Religion
- O Ethnic Background

- O Career Field
- O Anticipate Having Similar Career Path
- O Previous Career-Related Experience
- O Similar Off-Duty Interests
- O Association with Other Members of Supervisor's Family

- O Work Unit
- O Friendship
- O Education Level
- O Source of Commission
- O Other (please specify):

22. What <u>one characteristic</u> do you believe is the most responsible for the development of this mentoring relationship (choice may be different than items listed in Question 21):

Characteristic: _____

Why did you pick this person to mentor?						
strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

23. I wanted to do it.

① ② ③ ④ ⑤ ⑥ ⑦

24. I thought I had to do it.

① ② ③ ④ ⑤ ⑥ ⑦

25. I was directed to do it.

① ② ③ ④ ⑤ ⑥ ⑦

26. Other (please specify): _____

Regarding your current mentee...						
strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

27. Are you sorry you mentored this person?

① ② ③ ④ ⑤ ⑥ ⑦

28. Are you glad you mentored this person?

① ② ③ ④ ⑤ ⑥ ⑦

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Has mentoring this person put you at risk because:						
strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

29. Your mentee's poor performance may reflect on you?
① ② ③ ④ ⑤ ⑥ ⑦

30. Your mentee takes time away from doing other things that would advance your career?
① ② ③ ④ ⑤ ⑥ ⑦

31. There is gossip in the workplace regarding potential favoritism toward mentee?
① ② ③ ④ ⑤ ⑥ ⑦

32. There are possible perceptions of an unprofessional relationship?
① ② ③ ④ ⑤ ⑥ ⑦

33. Your mentee's social behaviors (manners, dress, habits, etc.) may reflect on you?
① ② ③ ④ ⑤ ⑥ ⑦

34. Your mentee might falsely report improper behavior?
① ② ③ ④ ⑤ ⑥ ⑦

35. Other (please specify): _____

Estimate the number of contacts you have with your mentee during an average week. If you do not have contact every week, divide the amount of time spent over a longer period by the number of weeks.

When communicating with your supervisor during an average week, how many times is the contact via:

61. Telephone?   Percentage of Contacts: _____%

62. EMAIL?   Percentage of Contacts: _____%

63. Facsimile?   Percentage of Contacts: _____%

64. Face-to-Face?   Percentage of Contacts: _____%

                                 Total percentage of Contacts: ___100___%

To what extent do you help your mentee establish a network of contacts from whom to seek assistance or advice…				
Not at all	To a slight extent	To some extent	To a large extent	To a very large extent

40. I increase my mentee's awareness of the personal contacts he/she has.

   ①   ②   ③   ④   ⑤

41. I assign responsibilities to my mentee that increase his/her contact with people who will judge his/her potential for future advancement?

   ①   ②   ③   ④   ⑤

42. I give projects to my mentee that increase his/her contact with higher level managers?

   ①   ②   ③   ④   ⑤

43. I help my mentee meet new colleagues?

   ①   ②   ③   ④   ⑤

44. I give my mentee projects that increase written and personal contact with senior officers?

   ①   ②   ③   ④   ⑤

To what extent do you help your mentee prepare for advancement…				
Not at all	To a slight extent	To some extent	To a large extent	To a very large extent

45. I share personal experiences as an alternative perspective to my mentee's problems.

   ①   ②   ③   ④   ⑤

46. I keep my mentee informed about what is going on at higher levels in his/her organization.

   ①   ②   ③   ④   ⑤

47. I encourage my mentee to prepare for advancement?

   ①   ②   ③   ④   ⑤

48. I give my mentee projects that present him/her with opportunities to learn new skills?

   ①   ②   ③   ④   ⑤

49. I keep my mentee informed on external conditions that are influencing his/her organization.

   ①   ②   ③   ④   ⑤

To what extent do you enhance your mentee's esteem and confidence...				
Not at all	To a slight extent	To some extent	To a large extent	To a very large extent

50. I serve as a role model?

    ①   ②   ③   ④   ⑤

51. I convey feelings of respect for him/her as an individual?

    ①   ②   ③   ④   ⑤

52. I encourage him/her to talk openly about anxieties and fears that detract from his/her work?

    ①   ②   ③   ④   ⑤

53. I display attitudes and values similar to his/her own?

    ①   ②   ③   ④   ⑤

54. I interact with him/her socially outside of work?

    ①   ②   ③   ④   ⑤

Sometimes people have difficulty obtaining a mentor because of barriers. We think these barriers fall into three basic categories. The first category, access to mentors, refers to the problems of not being able to find mentors in your organization. The second category, hesitation, refers to the risks involved in starting a mentoring relationship. The third category, organizational rejection, refers to a negative attitude by your organization towards mentoring.

Carefully consider each statement and mark the number that indicates the extent to which you believe each statement is true about barriers you have encountered.

I have had difficulty INITIATING a mentoring relationship because...						
strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

55. I've had a lack of opportunity to meet potential mentees.

  ①   ②   ③   ④   ⑤   ⑥   ⑦

56. I've had a lack of opportunity to develop relationships with potential mentees.

  ①   ②   ③   ④   ⑤   ⑥   ⑦

57. There is a shortage of potential mentees.

  ①   ②   ③   ④   ⑤   ⑥   ⑦

58. There is a lack of access to potential mentees.

  ①   ②   ③   ④   ⑤   ⑥   ⑦

I have been reluctant to start a mentoring relationship because...						
strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

59. I believe potential mentees are unwilling to develop a relationship with me.
   ①   ②   ③   ④   ⑤   ⑥   ⑦

60. I am afraid of being rejected by a potential mentee.
   ①   ②   ③   ④   ⑤   ⑥   ⑦

61. I am uncomfortable taking an assertive role in approaching a potential mentee.
   ①   ②   ③   ④   ⑤   ⑥   ⑦

63. I believe that it is up to the mentee to make the first move.
   ①   ②   ③   ④   ⑤   ⑥   ⑦

62. I am afraid that a potential mentee may be "put off" by such an advancement.
   ①   ②   ③   ④   ⑤   ⑥   ⑦

It would be difficult for me to start a mentoring relationship because...						
strongly disagree	disagree	slightly disagree	neither agree nor disagree	slightly agree	agree	strongly agree

64. My immediate supervisor may disapprove of me initiating a mentoring relationship.
   ①   ②   ③   ④   ⑤   ⑥   ⑦

65. My co-workers may disapprove of me initiating a mentoring relationship.
   ①   ②   ③   ④   ⑤   ⑥   ⑦

66. Potential mentees lack the time to develop a mentoring relationship with me.
   ①   ②   ③   ④   ⑤   ⑥   ⑦

67. Potential mentees don't notice me.
   ①   ②   ③   ④   ⑤   ⑥   ⑦

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Thank you for taking the time to complete this questionnaire.

Finally, please provide any additional comments you may have regarding mentoring, your mentoring relationship, or suggestions to improve this survey. Feel free to add additional pages if necessary.

Please use the enclosed envelope to return this survey to:
AFIT/LAL Survey Collection Point, Wright-Patterson AFB, OH.

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Bibliography

Air Force Instruction 36-3401. (1 July 1997). Air Force Mentoring.

Air Force Policy Directive 36-34. (1 November 1996). Air Force Mentoring Program.

Burgess, L. "Mentoring without a blindfold." *Employment Relations Today*. Winter 1994: 439-445.

Dansky, K. "The Effect of group mentoring on career outcomes." *Group & Organization Management*. 21(1): 439-445. March 1996.

Dreher, G.F., and Ash, R.A. "A comparative study of mentoring among men and women in managerial professional, and technical positions." *Journal of Applied Psychology*. 75: 539-546. 1990.

Dreher, G.F., and Cox,T. H., Jr. "Race, Gender, and Opportunity: A study of compensation, attainment and the establishment of mentoring relationships." *Journal of Applied Psychology*, 81(3), 297-308. (1996).

Erikson, E.H. Childhood and Society. New York: W. W. Norton. 1963.

Fagenson, Ellen A. "The mentor advantage: Perceived career/job experiences of protégés versus non-protégés." *Journal of Organizational Behavior*. 10: 29-42. 1989.

Fagenson-Eland, Ellen A, Marks, Michelle A., and Amendola, Karen L. "Perceptions of Mentoring Relationships." *Journal of Vocational Behavior*. 51: 29-42. 1997.

Feldman, Jack M. "A Note on the Statistical Correction of Halo Error." *Journal of Applied Psychology*, 71(1): 173-176. 1986.

"Five Essentials to Successful Mentoring Connections." United States Coast Guard (USCG), http://www.uscg.mil/hq/g-w/g-wt/g-wtl/menthist.htm. June 1998.

Gerstner, Charlotte R. and David V. Day. "Meta-Analytic Review of Leader – Member Exchange Theory: Correlates and Construct Issues," *Journal of Applied Psychology*, 82(6): 827-844. May 1997.

Gibson, Sharon. An Evaluation of Characteristics and Practices Associated with Effective Mentoring within the United States Air Force. MS thesis, AFIT/GLM/LAL/98S-5. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1998.

"History of the Coast Guard Mentoring Program." United States Coast Guard (USCG), http://www.uscg.mil/hq/g-w/g-wt/g-wtl/menthist.htm. June 1998.

Kanter, R.M. Men and Women of the Corporation. New York: Basic Books. 1977

Koberg, C.S., Boss, R.W., Chappell, D., and Ringer, R.C. "Correlates and consequences of protégé mentoring in a large hospital." *Group and Organization Management*. 19: 219-239. 1994.

Kram, K. E. "Phases of the mentor relationship." *Academy of Management Journal*, 26: 608-625. 1983.

"Mentoring Frequently Asked Questions." United States Coast Guard (USCG), http://www.uscg.mil/hq/g-w/g-wt/g-wtl/mentfaq.htm. September 1998.

"Mentoring Handbook." United States Department of Transportation (DOT) http://dothr.ost.dot.gov/mentorhb.htm. October 29, 1998.

"Mentoring System Instructions." United States Department of Transportation (DOT) http://dothr.ost.dot.gov/webins.htm. October 29, 1998.

Noe, Raymond A. "An investigation of the determinants of successful assigned mentoring relationships." *Personnel Psychology*, 41: 457-479. 1988.

Noe, Raymond A. "Women and mentoring: A review and research agenda." *Academy of Management Review*, 13: 65-78. 1988.

Nunally, Jum C. and Ira H. Bernstein. Psychometric Theory. New York: McGraw Hill Company. 1994.

Pfleeger, Shari L. and Norma Mertz. "Executive Mentoring: What Makes It Work?" *Communications of the ACM*, 38(1): 63-74. January 1995.

Phillip-Jones, Linda. Mentors & Proteges. New York: Arbor House. 1982.

Ragins, Belle R. "Barriers to mentoring: The female manager's dilemma." *Human Relations*, 42: 1-22. 1989.

Ragins, Belle R., and Cotton, John L. "Mentor functions and outcomes: A comparison of men and women in formal and informal mentoring relationships." *Journal of Applied Psychology*. 84: 529-550. 1999.

Searcy, Sheri, Lee-Lawson, Carla, Trombino, Betty. "Mentoring new leadership roles for parents of children with disabilities." *Remedial & Special Education*, 16: 307. October 1995.

Secretary of Transportation. All Employee Memo, May 26, 1998. United States
Department of Transportation (DOT) http://dothr.ost.dot.gov/secmenmem.htm.
May 1998.

Settoon, Randall P., Bennett, Nathan, and Liden, Robert C. "Social Exchange in
Organizations: Perceived Organizational Support, Leader – Member Exchange,
and Employee Reciprocity." *Journal of Applied Psychology*, 81(3): 219-227.
December 1995.

Stott, Tony and Sweeney, Jenny. "More than a MATCH." *People Management*, 5(3):
45-48. June 1999.

Tepper, Bennett J. "Upward maintenance tactics in supervisory mentoring and
nonmentoring relationships." Academy of Management Journal, 38(4): 1191-
1205. 1995.

Tepper, Bennett J., Brown, Sheryl J., and Hunt, Marilyn D. "Strength of subordinates'
upward influence tacktics and gender congruency effects." *Journal of Applied
Social Psychology*, 23(22): 1903-1919. 1993.

Tepper, Kelly, Shaffer, B. C., & Tepper, Bennett J. "Latent structure of mentoring
function scales." *Educational and Psychological and Psychological
Measurement*, 56(5), 848-857. 1996.

Townley, Barbara. Refraining Human Resource Management: Power, Ethics and the
Subject at Work. London: Sage.

Turban, Daniel B., and Dougherty, Thomas W. "Role of protégé personality in receipt of
mentoring and career success." *Academy of Management Journal*, 37(3): 688-
702. 1994.

Viator, R.E., and Scandura, T.A. "A study of mentor-protégé relationships in large
public accounting firms." *Accounting Horizons*, 5: 20-30. 1991.

Zey, Michael G. The Mentor Connection. Homewood, Illinois: Dow Jones-Irwin. 1984.

Vita

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His first assignment was at Dover AFB as a communications-computer systems officer in the 436th Communications Squadron. While stationed at Dover, he served as the Deputy Commander, Mission Systems Flight and then as the Commander, Plans & Implementation Flight. In October 1997, he was assigned to the Wing Protocol office. In May 1998, he entered the Information Resource Management program, School of Logistics and Acquisition Management, Air Force Institute of Technology. Upon graduation, he will be assigned to the Air Force Materiel Command Computer Systems Office (AFMC/CSO).

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13. ABSTRACT *(Maximum 200 words)*

A study of 91 Coast Guard junior officers and their mentors established the construct validity for mentoring functions and barriers to mentoring. The key predictors of reporting a supervisor as a mentor were similarity between mentor and mentee and the quality of the supervisory relationship in terms of LMX and psychosocial and career advancement mentoring functions. The results demonstrated evidence for a compensatory theory of mentoring. Multiple mentors do not have a synergistic effect on mentoring relationships. The key predictors of reporting a mentor other than the supervisor were not having a mentoring supervisor and not experiencing the barrier, access to mentors. The study identified a critical group who might be overlooked by organizations' mentoring programs. People who report not having a mentor (supervisor or other) have the lowest scores on self-assurance, supervisory relationships and mentoring functions.

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