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Male graduate students' evaluations of their dissertation advisory relationships: A comparison of same-sex versus cross-sex mentoring experiences

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MALE GRADUATE STUDENTS' EVALUATIONS OF THEIR DISSERTATION ADVISORY RELATIONSHIPS: A COMPARISON OF SAME-SEX VERSUS CROSS-SEX MENTORING EXPERIENCES.

by

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

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Abstract

MALE GRADUATE STUDENTS' EVALUATIONS OF THEIR DISSERTATION ADVISORY RELATIONSHIPS: A COMPARISON OF SAME-SEX VERSUS CROSS-SEX MENTORING EXPERIENCES.

by

Sharon R. Kahn

Adviser: Dr. Florence Denmark

Research on both male protege/female mentor dyadic relationships and mentoring techniques have been neglected topics in empirical investigations. In this study at an urban commuter graduate school, 86 male dissertation candidates in psychology, sociology, anthropology, biology, biochemistry, biomedical sciences, philosophy, and political science completed an extensive survey of their graduate school advisory and mentoring experiences. Programs studied were selected on the basis of their having faculty compositions that were at least 15% female. Forty-one of the participants had female advisors, and forty-five had male advisors. Seventy-three percent of students reported their dissertation advisor was also their mentor. Dichotomous questions were analyzed through the use of chi squares. Scale means were analyzed for significant differences through the use of t-tests, and analyses of variance. Open-ended questions were content-analyzed.

Overall, the results suggested that groups were more

similar than they were different. Most participants met their dissertation advisors in graduate courses taught by their advisor. Participants usually reported their dissertation advisors shared their research interests and had expertise. Participants did not differ on their attitudes toward professional women. Finally, on the Bem Sex Role Inventory (BSRI) both groups rated themselves significantly higher on the feminine dimension when compared to their ratings for their advisor on this dimension.

However, several significant differences were found between groups. Overall, males with female mentors rated their mentors more favorably on a mentoring scale. Furthermore, males with female mentors were significantly more likely to rate their mentoring experiences as having been both more intense and more nurturant than were males with male mentors. In addition, males with female mentors were more likely to report that they were included in their mentor's professional network than were males with male mentors. Finally, significant differences were found between personal gender-role traits and having a working mother. Male-advised males with working mothers rated themselves lowest on the masculine dimension of the BSRI, while male-advised males who did not have working mothers rated themselves highest on this dimension. Suggestions were offered for further research on mentoring relationships.

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Rarely do dissertation candidates successfully complete their doctorates without the guidance and encouragement of significant others in their life. Since I was no exception to the rule, I would like at this time to thank and acknowledge the assistance I received from my committee, my friends, and my family.

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Chapter 1: Introduction

Two neglected research topics in the social science literature were cross-sex mentoring, where a female acted in a mentor role to a male protege, and differences in mentoring styles, where mentors utilized either traditional or non-traditional mentoring techniques with their proteges. Additionally, both topics are related to each other, as the traditional mentor model popularized by Levinson, et al. (1978) was criticized as problematic for female mentors to use. An alternative feminist mentoring model had been proposed (Swobada & Millar, 1986). Little empirical research was conducted to investigate if females as mentors were more likely to use non-traditional mentoring techniques with their proteges than were the male mentors. This thesis aimed to investigate both neglected topics through a comparison of male dissertation candidates' reports of their experiences with either male or female mentors.

Studies to date have delineated differences between role models, mentors, and sponsors (Fields, 1988; Merriam, 1983; Paludi, 1988; Rawlins & Rawlins, 1987; Speizer, 1981; Torrance 1983; Woodlands Group, 1980), positive and negative mentor characteristics (Cronan-Hillix, et al. 1986; Paludi, et al. 1988; Roche, 1979), gains to the mentor or to the protege from the relationship (Alleman, et al. 1984; Berry, 1983; Busch, 1985; Denmark, et al. 1987; Keele & DeLa Mare

Schaefer, 1984; Kram, 1983; LeCluyse, et al. 1985; Reskin, 1979; Rogers, 1986, Wright & Wright, 1987), the need to develop formal mentoring programs in industry (Jones, 1983; Lawrie, 1987; Willbur, 1987; Zey, 1985, 1989), the dimensions of a mentoring relationship (Burke, 1984; Ochberg, et al. 1986; Schockett, Haring & Hidore, 1985), and problematic male mentor/female protege relationships (Bolton, 1980, Bowen, 1985, Clawsen & Kram, 1984, Colwill, 1984, Lean, 1981, Noe, 1988a). The conclusions of several of these studies were flawed, as some of these researchers operationalized the constituents of a mentoring relationship in a problematic fashion. (Collins, et al. 1983; Cosgrove, 1986; Yoder, et al. 1985). Other researchers used faulty or non-existent between-sex comparison techniques (Burke, 1984; Clawsen, 1983; Collins, et al. 1985; Fitt & Newton, 1981; LeCluyse, et al. 1985; Reskins, 1979; Riley & Wretch 1985; Roche, 1979; Willbur, 1987). Researchers suggested that proteges of female mentors would find their mentoring relationship different than those with male mentors, but little empirical data existed to compare and contrast the experiences of males in these two mentoring dyads. (Levinson et al. 1978; Swobada & Millar, 1986).

This thesis is directed towards creating a database of male experiences in either same or cross-sex mentoring relationships. Did males who had female mentors find the relationship different than males who had male mentors and

if so, how. Did female-mentored males report technique differences than the male-mentored males did? Were males with female mentors different in their attitudes toward women or in their gender attitudes? Were there background variables which pre-disposed males to enter into a female mentorship?

The latter half of this chapter is devoted to a review of pertinent mentoring studies. Additionally, a brief overview of the gender-stereotypes literature was included, in order to understand male attitudes toward professional women. This was highly relevant to designing a comparison study of male mentoring dyads as in order to predict the direction of differences between participant groups, studies of professional females' work performance, professional male and female gender attitudes, male and female experiences as students and as professors, and male and female professional networks needed to be examined.

Overview:

Mentoring was both a popular and a problematic research concept in the current social science literature. It was a popular research concept because implicit in its premise was the issue of succession and leadership training. The mentor was the individual who controlled the future through designation and training of the next leader. Head & Gray (1988) for example, in their review of Western literature, history, and media for mentor figures suggested "mentoring

was a key and natural means to ensure that rule by the most suitable would be greater than if left to chance." Moreover, a mentor's power was in their enculteration of a novice (or protege).

Mentoring was also a problematic concept. One problem in reviewing the literature on this concept was in distinguishing mentoring investigations from previous investigations on adult socialization, role modelling, and sponsorship. Although mentoring was an antique concept, based on a classical non-parental relationship in Homer's Odyssey, the term 'mentor' did not appear in Psychological Abstracts until 1985. Several recent literature reviews on mentoring noted the confusion in operationalizing the term "mentor" due to the previous looseness in terminology. (Merriam, 1983;Speizer, 1981;Paludi, 1988a; Paludi, et al. 1988). Before reviewing the empirical literature on mentoring, each of these terms will be defined and differentiated.

Gottlieb (1961) defined adult socialization as "modification of the self through the acquisition of personality characteristics through contact with significant others. Professional school and the personnel...are significant influences in the formation of the professional self...professional socialization constitutes a form of post adolescent modification of self." Adult socialization accordingly was primarily investigated in graduate and

professional school settings. (e.g. Gottlieb, 1961; Olesen & Whittaker, 1966; Pease, 1967; Sherlock & Morris, 1967, Wright, 1967, Weiss, 1981; Kleinman, 1984). One distinction between role socialization and mentor concepts was the increased precision in investigating the dynamics of a particular type of dyadic relationship as opposed to the increased vagaries of investigating the dynamics of larger, more amorphous group relationship. Mentors were agents of enculteration, who place their imprimatur on the novice's training.

The role model concept originated with Kemper (1968). The role model might be real or fictitious, alive or dead. The role model demonstrated for the individual how to accomplish a task. The individual demonstrated the occurrence of learning through imitation of the models action. The more complex the task, the more exigent was the need for a role model. Role models demonstrated how goals were achieved, however, the role model's influence was not sufficiently compelling to motivate an individual to achieve a goal.

One confound in reviewing the mentoring literature was differentiating role models from mentors. Speizer (1981) in her mentoring literature review, claimed that role models were studied for their effect on undergraduate college students, while mentors and sponsors were studied for their effect on employees in a work milieu. However, a select

review of the role model literature found this statement was inaccurate. The impact of role models upon individuals had been investigated throughout several diverse life stages: in high school (e.g.: Bell, 1970;Stake & Granger, 1978), in college (e.g.:Combs & Tolbert, 1980; Almquist & Angrist, 1971; Gilbert, et. al. 1983; Basow & Howe, 1979,1980; Erkut & Mokros, 1984;Gilbert, 1985; Stake & Noonan, 1985; Paludi, 1988a) and in graduate and professional schools (e.g.: Combs & Tolbert, 1980; Roeske & Lake; Paludi, 1988a; Paludi, et al. 1988; Lunneborg, 1982; Dambrot & Vassal, 1983; Goldstein, 1979).

Field's (1988) review of the literatures best distinguished between role models and mentors. She suggested a mentor fulfilled certain antecedent conditions and performed certain functions while a role model failed to fulfill these criteria. She suggested a mentor relationship had certain implicit antecedents, namely, the availability of a protege, and a mentor with time available for the protege. Secondly, the mentor was older and more experienced than the protege, was also willing to share thoughts and feelings with the protege, and as a professional was successful, secure, powerful, confident, and willing to take risks. In support of this statement, Noe (1988b) reported that both the lack of time and physical distance were the two factors that negatively affected a mentor-protege relationship.

The mentor role, then, was more complex than the role model one. It was interactional, dynamic, and involved considerable personal investment on the role of both individuals.

The term "sponsor" may be the equivalent of the term "mentor". For example, White (1970) defined sponsorship as a protege system, where the sponsor promoted and mentioned the protege to others. Clawsen (1985) also defined a mentor as a sponsor. Ochberg et al. (1987) reported that sponsorship was one of the three dimensions of mentoring behavior. In contrast, Rawlins & Rawlins (1987), Torrance (1983), and the Woodlands Group (1980) differentiated between a mentor and a sponsor. Finally, Merriam (1983) in a review of the available literature, concluded that mentors and sponsors were the same phenomena.

The flood of investigatory literature upon the mentor concept apparently began after the 1970's. Unlike the adult socialization and the role model concepts, the mentor concept attracted researchers from both the business and academic milieus. However, there was little collaboration between these research sectors. This isolation casts doubts upon the conclusions advanced by the business milieu, because, as will be elaborated in future pages, the statistics this milieu used were often perilously inadequate to explain their data. Finally, the motive to conduct research on the mentor concept usually differed in these two

broad sectors.

In the academic sector, the understanding of adult development and lifespan issues were usually emphasized as the major concerns, while in the business sector, the material gains to the protege in the corporation were usually emphasized (Merriam, 1983; Paludi, et al, 1988; Zey, 1989.)

The fullest conceptualization of what was a mentor relationship may be found in The Seasons of a Man's Life (Levinson, et al. 1978). Levinson, et al.'s (1978) mentoring concept proved inspirational to other researchers, and many subsequently operationalized their mentoring concepts based on components in the Levinson, et al. (1978) text (e.g. Borman & Colson, 1984, Lecluyse, et al., 1985; Willbur, 1987).

The Levinson et al. (1978) mentoring concept will be reviewed first, followed by a critique of the original Levinson, et al. (1978) concept.

Chapter 2: Review of the mentoring literature.

The mentor concept: 1978 through 1988:

Levinson et al. (1978) investigated life-span development in males between the ages of 35 to 45. The males studied were selected from four occupational subgroups: hourly workers, executives, academic biologists and novelists. He utilized biographical interviewing as his

research methodology. Participants were interviewed for up to 20 hours over a span of several months.

Based on these interviews, Levinson, et al. (1978) conceptualized the mentor as an older, more experienced individual who assisted in the beginning of an individual's chosen career. The mentor was usually 8 to 15 years older than the protege. The protege was usually younger than 40 years old.

The mentor was more than a teacher, advisor, and sponsor to the protege. The mentor's most important function was to "support and facilitate the realization of the Dream." The mentor was "a transitional figure, a mix of parent and peer." The mentor must balance between the polarities of being either too much like a parent or too much like a peer. The mentor who was too much of the former would later have difficulties in overcoming the generational differences with the protege later, while the mentor who was too much of the latter would have difficulties in representing the advanced level to which the protege aspired. The mentor was termed the "good enough" parent who believed in, shared, and supported the protege's career plans, "helping to define the newly emerging self and creating a space where the young man can work on a reasonably satisfying life structure that contains the Dream". Levinson, et al. (1978) reported the true mentor served as an adult analogue of the "good enough" parent for

the child.

Both parties mutually created the mentoring relationship. However, Levinson, et al. (1978) reported the mentor relationship followed a general pattern which they called the "good enough" mentorship, where the protege felt: "admiration, respect, gratitude, and love for the mentor, which outweighs, but does not prevent, the formation of such feelings as resentment, inferiority, envy, and intimidation. The mentor sees qualities of character, expertise, and understanding in the younger that he wants to make part of himself."

Proteges may find mentors either in occupational settings, or amidst family and friends. "A student may receive very little mentoring from his teacher advisor and very important mentoring from an older friend or relative."

The termination of the mentoring relationship was compared to the termination of a love relationship by Levinson, et al. (1978) as both were difficult to civilly terminate. They reported that an intense mentorship typically terminated with both parties having strong conflicts, negative feelings,and mutual disillusionment.

Thus the initiation of the mentoring relationship was marked by illusory idealization, the conclusion fated with the illusion's death. Only after the relationship ended may the value of the mentor relationship be realized, when the protege internalized the admired qualities of the mentor.

If the protege appreciated and tolerated the mentor's personality flaws and if the two shared sufficient commonalities, they could form a new relationship. However, this outcome was viewed as atypical.

Finally, in the Levinson, et al. (1978) schema, a mentor may be purely symbolic. While the previous examples represented mentoring in its "most developed and constructive form" they suggested mentoring was a complex phenomena, rather than "all or none" phenomena. Levinson suggested the symbolic mentoring relationship was a unilateral relationship between an aspiring novice who admired an older and successful individual, read his works, learnt about his career, and "creates an idealized internal figure with whom he has a complex relationship". However,this construct since has received limited investigative attention.

A critique of the Levinson, et al. (1978) mentor concept:

Empirically, there were several limitations on the generalizability of the Levinson, et al. (1978) research to other populations. These limitations included: problematic cross-sex applicability and contradictory mentoring conceptualizations. For example, the research was based on 40 male cohorts with male mentors. Levinson, et. al. never stated females could not mentor males. To the contrary they suggested a relationship with a female mentor could be a valuable experience for a male.

Conceptually, the Levinson et al. (1978) mentor concept presented at least three contradictions these researchers never reconciled. One was it was unusual for the mentoring relationship to civilly terminate. The relationship usually terminated in mutual disillusionment, and the value of the mentoring relationship was realized after its termination. However, the goal of the mentoring relationship was to become peers (Levinson, et al. 1978).

Secondly,the relationship was mutually shaped. However,it was also possible to have a purely symbolic (unilateral) relationship (Levinson, et al. 1978).

Finally, they utilized questionable analogies between psychoanalytic concepts of child development and corporate concepts of management development.

Theoretically, Levinson, et. al (1978) borrowed two concepts from Donald Winnicott--the good enough mother and the transitional object (or phenomena). According to Winnicott, the good enough mother first developed the infant's self through a temporary (but total)immersion between herself and the infant, intuiting accurately all its needs. The good enough mother showed the infant its experiences, and helped the infant become aware of its bodily functions and personal impulses, which formed the foundation for the infant's sense of self. "The mother brings the world to the infant." (Greenberg & Mitchell, 1983).

According to Winnicott, the total investment of the mother with her infant must be temporary. The mother must withdraw, by resuming her own work and allowing the infant to be alone to evolve into a separate individual. At this juncture the good enough mother will only respond to the infant's expressed needs, rather than inferred needs (Greenberg & Mitchell, 1983).

According to Winnicott, the concept of the transitional object or the transitional phenomena was in the middle of the developmental continuum between the initially immersed mother and the later gradually withdrawing mother. By transitional phenomena, Winnicott referred to non-organic, tangible objects such as stuffed animals and infant blankets. The object itself was irrelevant: it was the infant's relationship with the object that was the relevant factor. The transitional object aided the infant's adjustment as one individual amongst other individuals. This occurred because the object was neither under magical nor under outside control. "The transitional phenomena is the developmental way station between hallucinatory omnipotence...and the recognition of others independent existence" (Greenberg &Mitchell, 1983).

Levinson, et al. (1978) acknowledged their intellectual debt to Winnicott, but apparently failed to realize the implications of using psychoanalytic terms to describe the mentor relationship. Winnicott formulated his theory of

infantile personality development in part as a reaction against prevailing scientific theories of child rearing. He wanted to empower parents and he placed his confidence in their intuitive knowledge of their infant's developmental needs.

However, Levinson, et al. (1978) used the Winnicottian paradigm as a relevant parallel to young adult career development theory.First, a relationship which was not supposed to be overly parental was then ironically based on a psychoanalytic conceptualization of the mother/infant interaction. Secondly,they oversimplified the implications of these terms, as to compare the mentor/protege relationship to the mother/infant relationship vastly oversimplified many cognitive and emotional differences undergone by an individual between infancy and a young adulthood. For example, Levinson, et al. (1978) described the mentor as an individual who paralleled the "good enough" mother who temporarily immersed herself in the world of her infant and then withdrew, both in the service of developing the infant's sense of self. Would this hypothesis be borne out be more empirical research? Would proteges describe the good enough mentor in a parallel manner? In the academic milieu, Cronan-Hillix, et al. (1986) surveyed graduate students. Participants most frequently reported the following were traits of a good mentor: (1) "interested/ supportive, (2) personality characteristics (i.e. sense of

humor, patient, honest, dedicated, empathic, compassionate, genuine, non-sexist, flexible, loyal), (3) knowledgeable/competent, (4)sharing/giving/non-exploitative, (5) involved in research/ resourceful, (6) attitude towards students". Similarly, Paludi, et al,(1988) found the three traits most frequently reported by undergraduate and graduate school students surveyed of a good mentor were: (1) "supportive, (2) caring for others, (3) genuine". Roche, (1979) in a business milieu reported participants surveyed most frequently reported that a willingness to share knowledge and understanding were important traits of a good mentor.

Research in these two milieus validated the concept of the mentor as a parentlike individual, as "good enough" mentors were competent professionals involved in their careers and willing to help a less experienced individual advance in their career in a defined and structured manner. Whether this was empirically comparable to the creation of a space for the emergence of the self remained unknown.

According to Levinson et al. (1978) the mentor relationship was marked by transitions. Although the goal was for the mentor and the protege to become peers, the protege's professional gains in the organization usually commenced the destruction of the mentor relationship. Would empirical research corroborate this hypothesis? Kram (1983) investigated the concept of phases in the mentoring

relationship. She empirically derived four phases based upon interviews with 15 proteges (8 male, 7 female) and their 18 mentors (17 male, 1 female) in a corporation. Overall, she reported the mentoring relationship was a dynamic process which lasted approximately five years. The four phases she identified were each characterized by particular affective experiences, developmental functions, and interactional patterns, which were delineated as follows:

1. Initiation: In their first year of a mentoring relationship, the proteges reported strong and positive fantasies of their mentors as an individual who they admired and respected as competent as well as capable of providing them with support and guidance. The protege felt cared for, supported, and respected by their mentor. The mentor reported recalling the protege as a coachable individual with potential, and was enjoyable to work with. The mentor reported the protege at this stage could provide the mentor with technical assistance, while the mentor could provide the protege with advice and counsel. The first year of work converted their mutual fantasies into positive realities.
2. Cultivation: In the subsequent second to fifth years after the initiation of the mentor/protege

relationship, workplace reality validated the duo's initial employment fantasies. The mentor provided challenging assignments, coached, professionally exposed, and protected the protege. While the mentor had initially served career functions, as the relationship endured over time, the interpersonal bond intensified, and the mentor provided such psychosocial functions as acceptance, confirmation, and counseling the protege. In turn, mentors experienced empowerment from this role.

3. Separation: After the second to fifth years of the mentoring relationship significant changes occurred in the career and psychosocial functions provided by the mentor. Separation was characterized by turmoil, anxiety, and feelings of loss. The protege experienced independence and autonomy; The separation was necessary for the protege, as an opportunity to demonstrate their vocational competence independent of their mentor. The mentor demonstrated to the organization an ability to develop talent.

4. Redefinition: Relationship was on an informal basis. Mentor and protege distinctions dissolved;the two were peers.

The study, although limited by a small sample size, was

nonetheless valuable for the modifications or disconfirmations it offered for the Levinson et al. (1978) hypotheses. Specifically, there was little confirmation that the relationship usually ended uncivilly. In contrast, negativity was a developmental stage, not necessitating termination of the relationship. Secondly, the suggestion of the mentor as a good enough parent or as a transitional phenomenon was not highly confirmed. The mentor never became totally immersed in the world of the protege. The initiation of the relationship was based on mutual fantasies of how each person could benefit from the interaction. Each individual chose the other. Mentors were not mirrors who showed their protege the world, but were facilitators who helped their protege learn on the job. The benefits mentors gave their proteges in the organization were matched by the benefits accrued to them by the relationship, specifically, work the mentor deemed as uninteresting was delegated to the protege. The manner in which the protege completed these assignments provided realistic expectations for the mentors of the protege's capabilities. How and what the mentors delegated to the proteges provided the latter with both realistic expectations from the mentor relationship, and a test of their own nascent capabilities.

The Kram (1983) research suggested mentor relationships endured due to mutual roles each individual enacted in shaping and creating the relationship. One overall dynamic

of the mentor relationship was each member contributed some element to facilitate the other and which created a new and desired enhancement for both. Each individual played an active role: the activities of the protege shaped and modified the functions that the mentor provided, and the converse was true as well.

A mentor relationship was time limited and specific in nature and functions. The interaction changed each individual and required role flexibility.

The relationship was transitional in the sense that the status of both the individuals involved changed from supervisor/subordinate to colleagues.

The lifespan approach to the mentor concept:

Further research on the mentor relationship suggested mentoring another was not motivated solely by altruism or desire to parent redux, but was a developmental task from which the mentor likewise derived benefits and career enhancements from the interaction. This lifespan conceptualization of the term "mentor" was based upon Eriksonian theory of human development. He described eight psychosocial life-stages, where individual development was influenced by both intrafamial and intrasocial phenomena. Each lifestage posed a crisis which the individual must resolve. Each crisis offered an opportunity for growth. The Eriksonian psychosocial stage of interest for the lifespan conceptualization of the term "mentor" was that of

middle adulthood. The crisis posed to an individual at this stage was termed 'Generativity v stagnation' (Erikson, 1959,1964). Generativity in its narrowest sense was a concern for future generations (aside from one's biological progeny). The fullest sense of generativity involved creativity and productivity for this individual as well. If an individual was generative, he/she would develop the Eriksonian virtue of care. Care was defined as an empathy and a willingness to accept responsibility for others and for future generations. If the crisis was not resolved in favor of generativity, stagnation was said to result. The consequences of stagnation were boredom, frustration, and loss to the individual. Researchers had suggested that generativity may be gained through mentoring (Kram, 1983;Barnett, 1984; Busch, 1985).

Benefits to the mentor:

Research and essays identified 11 gains to the mentor. The first seven were cited in both business and academic literature; while the last four were cited only in the business literature. These gains were as follows:

1. Mentoring increased the mentor's productivity. Or, the interaction enhanced the mentor's career (Wright & Wright, 1987; Rogers, 1986; Alleman,et al 1984).
2. Mentoring resulted in an extension of the mentor's network through protege friendships (Wright & Wright, 1987;Rogers, 1986; Busch, 1985; Keele & DeLa Mare

Schaefer, 1984).

3. Mentoring resulted in an extension of the mentor's support group (Denmark, et al. 1987; Busch, 1985; Keele & DeLa Mare Schaefer, 1984; Berry, 1983).

4. The mentor derived personal satisfaction through mentoring others (Denmark, et al., 1987: Wright & Wright, 1987;Keele & DeLaMare Schaefer, 1984; Kram, 1983; Fitt & Newton, 1981).

5. Mentoring insured continuity of the mentor's work (Wright & Wright, 1987).

6. Mentors received recognition from others for effective mentoring (Rogers, 1986;Burke, 1984; Berry, 1983).

7. Mentors witnessed the professional and intellectual growth of their proteges growth (Busch, 1984; Keele & DelaMare Schaefer, 1984).

8. Mentors gained increased control of their work environment (Keele & DeLaMare Schaefer, 1984).

9. Mentors gained increased access to system resources (Keele & DeLaMare Schaefer, 1984).

10. Mentors felt empowered by mentoring their protege (Kram, 1983).

11. Mentors integrated their masculine/feminine personality poles. This was conceptualized by Levinson, et al. (1978) as an important achievement for the midlife male who was capable at this stage of

nurturing other males without experiencing homosexual anxiety. Furthermore,midlife males can integrate their home and work milieus. Finally, midlife males can mentor others because their own needs for power and success were modulated (Levinson, et al. 1978).

Clearly serving as a mentor would not be purely motivated by unselfish desires on the part of the elder. The mentor received both intrinsic satisfactions and extrinsic rewards. The intrinsic satisfactions included increased personal satisfaction and fulfillment of the mentor's conscious or unconscious power needs. The extrinsic rewards included increased influence and power. Having proteges enabled mentors to believe that their work would continue after retirement.

Additionally, commitment to this relationship resulted in benefits not only for the mentor, but for the protege as well. Eleven benefits culled from reviews of both business and academic literature may be cited as influencing the protege's willingness to commit to this relationship. These benefits were as follows:

1. Mentoring provided career enhancement. Both academic and corporate literatures cited research which supported this statement. Proteges believed their mentor exerted considerable influence on their careers (Burke, 1984). Proteges believed their mentor would assist them to find later employment (Cronan-Hillix,

et al,1986; Paludi, et al,1988). Mentored proteges had more pre-doctoral publications (Cronan-Hillix, et. al. 1986; Reskin, 1979). Mentored individuals were more involved in professional activities (LeCluyse, et. al. 1985). Working under an eminent sponsor enhanced proteges chances of starting their career in university tenure track jobs (Reskin, 1979). Mentored individuals had larger salaries at younger ages and were more likely to follow a career plan (Roche,1979).

2. Mentoring provided the protege with a pedigree,in that they received a place of origin in the scientific stratification system which was based on the status of their mentor (Reskin, 1979).

3. Mentoring provided the protege with guidance and support. Graduate students surveyed reported an important dimension of having a mentor was the guidance and support received (Cronan-Hillix, et al. 1986).

4. Mentored individuals completed more years of formal school than their non-mentored peers (Roche, 1979; Torrance, 1983). Mentored students were also more likely than their non-mentored peers to report satisfaction with their academic departments (Cronan-Hillix, et. al. 1986).

5. Mentoring provided the protege with an older individual to identify with professionally (Torrance, 1983; Cronan-Hillix, 1986). However, Bowen,(1985, 1986)

reported identification was highest in the beginning of the mentor-protege relationship and declined thereafter.

6. Mentored individuals were more likely to later mentor others. Both literatures cited evidence for this statement (Roche, 1979; Busch, 1985).

7. Mentoring was a personally satisfying experience. Mentored individuals reported more positive attitudes about their business/academic environments than non-mentored individuals (Roche, 1979;Cosgrove, 1986).

8. Mentoring provided the protege with an enhanced sense of personal efficacy: Mentored individuals reported greater confidence and competence than non-mentored individuals about decision making situations. This finding was reported in both in the business and in the academic milieus.

9. Mentoring provided proteges with professional role models (Burke, 1984; Torrance, 1983).

10. Mentoring provided proteges with an introduction to informal professional networks (Wright & Wright, 1987).

11. Mentoring provided the protege with the perception of empowerment. Mentored employees rated themselves as having significantly more organizational policy influence, resource power, and access to important people than did employees who had not been mentored, regardless of respondents actual position within the

organization (Fagenson, 1988).

These 11 benefits culled from the research literature have reinforced the appeal of the mentor concept across domains. Mentored individuals were more productive than were non-mentored individual, which was a benefit for the proteges, for the mentors, and for the employers. Mentored individuals reported intrinsic rewards, such as satisfaction, the completion of their education, and guidance from their mentoring experiences. They also reported extrinsic satisfactions, such as career advancement and better salaries, from their mentoring experiences.

Mentoring relationships were not a novel phenomena which sprung from the Levinson, et al. (1978) research. However, usage of this term to refer to the working relationship between senior professionals and their subordinates was popularized after Levinson, et al. (1978). The mentors' key role in leadership training captured the interests and expenditures from two diverse fields: academia and industry. In the former, mentoring was viewed as a dimension of a faculty member's responsibilities to the student. In the latter, the interest led to the establishment of formal mentoring programs in industries. These formal programs codified and structured interactions between new and established employees.

Formal mentoring programs in industry:

Development of formal mentoring programs followed the philosophy of recent essays which speculated that mentoring was a dimension of a manager's responsibilities to subordinates (Orth, et al. 1987; Woodlands Group 1980). Formal mentoring programs did not only serve to orient the novice into the corporate culture. Formal mentoring programs were not designed to be transitional phenomena or good enough mothers for the inexperienced managers. The successful mentor programs yielded dividends for the entire corporate hierarchy. Thus,the program's goals were intended to benefit the novice, the senior managers, and the corporation as a whole. For example, eight outcome goals were elaborated in various essays on the formal organizational mentoring programs.

1. Formal mentoring programs facilitated the growth of relationships between junior and senior managers (Jones,1983; Lawrie, 1987; Zey,1985).
2. Formal mentoring programs facilitated management and professional training (Lawrie, 1987; Zey, 1985; Zey,1989).
3. Formal mentoring programs facilitated orientation and use of available resources for novices (Zey,1985).
4. Formal mentoring programs provided an extension of mentoring opportunities to members of groups who might

have difficulties forming relationships with more senior personnel (Zey, 1985; Willbur, 1987).

5. Formal mentoring programs reduced the shock and ambiguity felt by the novice in entering a new organization and joining established groups (Jones,1983).

6. Formal mentoring programs yielded an increased commitment to the organization for all persons involved in mentoring experiences (Jones, 1983).

7. Formal mentoring programs facilitated management succession (Zey, 1985,1989).

8. Formal mentoring programs assisted corporations in meeting affirmative action mandates (Zey, 1985).

Thus, formal mentoring programs emphasized the introduction of senior managers to junior managers, where the senior managers oriented the junior managers into the corporate culture, supervised their work, and promoted their 'protege' in specific and the corporation in general.

Methodological problems:

However, one problem in rendering conclusive statements on the benefits of mentoring was many of the above cited studies were methodologically weakened by reliance on retrospective survey techniques, unilateral data collection, and/or correlational data (Merriam, 1983;Speizer, 1981). For example, Speizer (1981) reported the number of research participants was inadequate to render generalizations to

other populations, the investigators overused retrospective survey techniques, and in general, the mentor concept lacked definition and may be male biased.

Two years later, Merriam (1983) reported similar flaws and concluded the literature had a positive bias due to use of survey techniques, where respondents were most likely to be currently successful professionals. She reported that in the business sector the data was skewed by use of already successful business people, and that the reported salary discrepancies between mentored and non-mentored subjects were small. Finally, she criticized the concept of formal mentor programs and raised doubts about its efficacy.

Another problem in the mentoring literature was a lack of available female mentors. Most of the mentors available to proteges were male. (Burke, 1984;Kram, 1983). Furthermore, many studies provided evidence which indicated inequities in the status hierarchy. Men dominated senior positions, whether in business or academia.(in business: Roche, 1979; Kram,1983,Lean, 1985;Burke, 1984;Bowen, 1985, 1986; Riley & Wretch, 1985; in academe:Graham, 1970, Rosen, 1974;Davidson, 1978, Gilbert, et al,1983;Gilbert, 1985;Riley & Wretch, 1985;Cronan-Hillix, et al, 1986;Swerdlik & Bardon, 1988).

Hunt & Michael (1983) attempted to compose a gender-based typology of mentor relationships, but were unable to do so, given a "near void" for cells for both sexed

proteges with female mentors.One potential confound of available cross-sex mentoring studies may have been due to the dual failure of male proteges to credit their supervisory females as their mentors and of the collusion by supervisory females to credit themselves with having mentored males. (Lean, 1983).

Although mentoring was conceptualized as a bilateral relationship mutually created by both the protege and the mentor, a confound in the empirical research was the utilization of unidimensional, retrospective survey methodology, where investigators analyzed a former protege's evaluations of the mentor relationship without consideration of such factors as how the mentoring relationship terminated (or if it had) and the potential bias termination might have upon the former protege's self-report. Additionally, several studies which analyzed sex-differences in mentoring experiences had inadequate numbers of female participants. Some examples follow.

Mentoring studies in industry:

Willbur(1987) surveyed 258 male managers' mentoring experiences. He reported having a mentor was a more significant predictor of the protege's career success than was the protege's achievement motivation. Willbur did not include tables,conduct statistical tests with his data, or use control groups of participants. He stated he collected data on educational level, seniority, age and

career expectations of his participants, but he did not report these details in his paper. He claimed to have employed sophisticated statistical procedures to establish the validity and reliability of all of his research tools, but he did not report the specific data in his paper. Finally, he did not include a sample of items used on his instrument.

Clawsen (1983) surveyed 76 managers on their mentoring experiences. He failed to enumerate the number of male and female participants. He also failed to report participants' ages, years with the organization, or educational levels. These executives were asked to rate the degree of influence the three most influential people in their lives had upon 14 different life dimensions. Clawsen (1983) only reported frequency distributions of the data. He reported a perfect score of 14 indicated the participant had a classical mentor, (defined as one pervasive life-influence). This only happened for one of the 214 mentor relationships reported. He reported proteges valued the mental, social, and organizational skills of their mentors. He concluded that his study demonstrated being emulated on five life dimensions (intellectual sharpness, job skills,managing a career, social skills, and emotional characteristics) was a reasonable profile of the modern mentor's functions. However, he failed to report whether sophisticated statistical techniques validated this assumption.

However, according to Levinson, et al. (1978) a mentor relationship typically involved not only emulation of an older professional but interaction with them as well.

Burke (1984) compared the perceptions of male and female proteges with those of their same or cross-sex mentors. Seventy-two percent of the participants were male-mentored males and five percent of the participants were female-mentored females. Participating male mentors were older and had larger gaps in ages with their proteges than did the female mentors. Despite these confounds to comparability, he reported female mentors surveyed performed more psychosocial functions and had a greater impact on their career aspirations of their proteges than did the male mentors. Male proteges surveyed reported they had more mentors and indicated their mentors had a greater influence on their career choice than did female proteges. The eight female-mentored males reported their mentor had a greater influence on them as a person. The three male-mentored females reported their mentors performed more psychosocial functions and that their mentors were more job satisfied and had greater career influence on them.

Fitt & Newton(1981) interviewed 30 female managers in 27 corporations. Of these female managers, 24 reported they had been mentored (apparently all by men). Only percentages were reported as statistics, and that only for demographic information. They did not provided data on the male/female

ratio in the sampled organizations. The 30 female participants were reported as earning between $21,000 to $90,000 a year. Fitt & Newton (1981) failed to provide any statistical information comparing the earnings of the mentored females to those of the non-mentored females. However, they concluded that on average, the 24 mentored females were better paid and younger than the six non-mentored females.

Bowen (1985,1986) studied 32 mentor/female protege pairs. Male-mentored females were non-significantly more likely to report their mentors performed psychosocial functions than were female-mentored females. He reported more intense psychosocial functions occurred when there was a lower level of identification between the mentor/protege pairs(although this might be a developmental stage: he found that as the relationship endured over time,identification between the pair decreased). The mean mentor career importance score given by the male-mentored females was 4.56 (on a 5 point scale) while the score given by the female-mentored females was 4.71 on this scale. He did not report if this was a significant mean difference. Overall, he reported the mentor's sex was not a significant variable to the protege, but the mentor's functions were significant to the protege.

Similarly, Alleman, et al (1984) reported no significant differences in reported protege treatment

between female mentors and male mentors. No profiles emerged on personality scales which differentiated individuals who were mentors from those who were not. Similarly, no profiles emerged on personality scales which differentiated individuals who had been mentored from those who had not been. While proteges reported perceiving their mentor as similar to themselves, the mentors, however, failed to report any perceived similarities between themselves and their proteges.

Roche(1979) surveyed senior executives. Of the 3976 male and 28 females sent questionnaires, 1250 responded. He provided no enumeration as to the sex of the respondents. Two-thirds of the respondents reported being mentored. Those who had been mentored earned larger salaries and began earning them at a younger age than the non-mentored. Additionally, mentored participants were better educated, were more likely to follow a career plan, were more likely to mentor others, and were more likely to be happier about working long hours than their non-mentored peers. Nearly all the male participants were mentored during their first five years in the career, whereas the female participants were mentored after their sixth year in the career. Females surveyed had more mentors and were more likely to mentor others. Both mentored and non-mentored respondents demonstrated objective criteria of success. Non-mentored respondents earned $114,200 a year while the mentored

respondents earned $118,900 a year. One confound with the Roche (1979) study was the reliability and validity of his between-sex protege comparisons. Females constituted less than 1% of all executives sent mentoring surveys. If every female who was contacted participated in this study, then at best females constituted approximately 2% of the total sample.

The problems presented in the preceding review corporate studies on mentoring were twofold: Many studies used exclusively male participants. Secondly, investigators did not conduct adequate statistical tests of significance with their data. Similarities and differences between females and males as mentors could not be adequately tested. Additionally, adequate testing could not be conducted of the similarities and differences in self-reports between female and male-mentored participants.

Mentoring studies in academia:

Studies conducted in or about academia were more likely to sample participants of both sexes. However, like the corporate studies of mentoring, many of the academic studies relied on retrospective information, and did not always conduct adequate statistical tests of data collected.

In academe, mentors were assumed to be faculty and classroom instructors available in the individual's immediate milieu (Paludi et al, 1988). Additionally, Swerdlik & Bardon, (1988) found that female students were

more likely to report a preference for female mentors than males were to report a preference for male mentors. However, in many schools, this may have been a moot preference, as it might have been more difficult for female students to find an available female faculty mentor than it was for a male to find an available male faculty mentor.

Goldstein(1979) investigated the productivity of Ph.D psychologists as it correlated with the sex of their former dissertation advisors. Goldstein, (1979) was one the few studies with equivalent numbers of male and female "advisors" [mentors] for all possible combinations of mentor/protege cells. She reported all the same-sex pairings had significantly more publications than all the cross-sex pairings. Although she noted that female advisors constituted a small number of available faculty, she concluded more ambitious students sought out same sex advisors. However, Denmark, et al. (1987) cited an unnamed investigator who failed to replicate this finding when using a larger nationwide sample.

Collins, et al., (1985) investigated a college program that introduced undergraduate students to successful local business women. The evaluation of the mentoring relationship consisted of two postcards: one completed by the "mentor", one completed by the "protege". The extent of the mentor commitment to their protege was to conduct two interviews with them: one interview with the protege at the mentor's

workplace; the other at the protege's campus. No further information about students and mentors was reported. The analysis of the survey consisted of this: "comments were diverse for both students and professionals." Mentor responses ranged from reports that the students used the interview situation as an attempt to obtain employment to reports that the mentor used the interview situation as an attempt to obtain employment for the students. The student responses ranged from "no comment" to "one of the most important experiences of my career." The procedural information available and the description of the program was not consonant with the Levinson, et al. (1978) definition of the mentoring relationship. Furthermore, since some of the available professionals seemed reluctant to help the students advance with their career, to term them as "mentors" to these students was an oxymoron.

Cosgrove, (1986) used undergraduate participants with faculty mentors and reported regardless of the students' sex, mentored participants had significant more positive attitudes to the overall university environment, had better goal setting and achievement ability, had better problem solving and decision making capacity, and used the health services less than the non-mentored students. Sex of Student x Sex of Faculty interactions were not reported. Again, as with the previously cited Collins et al. (1985) study, the significant point was the accurate usage of the term

"mentor". In Cosgrove's (1986) study, mentored participants were those who had been matched with faculty members. Thus, the element of mutual selection was absent. The mentors were expected to meet thrice with the protege during the academic year. Thus, changes over time in the mentoring relationship remain unknown.

Torrance (1983) conducted a follow up to a previous longitudinal study of creativity. The original study began when the participants were in elementary school in 1958 and continued through 1964. In 1979, he obtained additional data on mentoring experiences from 116 female and 96 male participants from the original study. Of the participants, 42% of the males, and 49% of the females reported they had mentors from their workplace or from their post secondary school. Torrance (1983) reported regardless of their sex, 84% of the mentored participants reported they were likely to adopt characteristics of their mentor. Additionally, regardless of their sex, mentored participants had more education than their non-mentored peers. Torrance (1983) also reported regardless of their sex, having been mentored correlated significantly with his criteria for adult creativity. Sex differences were found, however, on participants' reports of mentor functions. Females most often mentioned the encouragement and praise of their mentor and males most often mentioned the expertise of their mentor. However, Torrance (1983) did not control for changes

in the mentor relationship as a function of time, did not report data about how the relationship terminated, did not report how the termination of the relationship might have biased the self-reports, and did not conduct analysis to control for the milieu in which the mentor was found.

Cronan-Hillix, et al. (1986) investigated mentoring in a prospective survey study of 48 female and 42 male psychology graduate students. Participants were allowed to freely interpret what the term "mentor" meant to them. Of those who were mentored, 75% reported their mentor was on their faculty, 83% reported their mentor would later assist them to find employment 54% reported their mentor provided guidance, 33% reported their mentor provided support to them. Cronan-Hillix, et al. (1986) found no significance correlations between having a mentor and student's sex, age, year in graduate school, having an M.A., or program satisfaction. They reported three significant findings: Mentor satisfaction correlated significantly (.28) with program satisfaction. It also correlated significantly (.47) with the extent to which the student aspired to be like their mentor. Additionally, they reported the sex of student correlated with the sex of chosen mentor (but they omitted the correlation coefficient). In a prospective study, since participants were still in the student role, apparently mentors served less of a vocational function than in the corporate world, where respondents were

beginning their ascent on a hierarchical career ladder. However, it was important that most of the participants believed that their mentor would serve a future vocational function.

Lecluyse, et al. (1985) studied advanced female graduate students in education, liberal arts, and sciences. Of those who responded, 76% of all participants reported a mentor relationship. Of those who had been mentored, 31% had female mentors and 61% had male mentors. The only main effect reported was for being mentored and school variables: mentored females were more involved in professional activities than non-mentored females. There were no significant effects attained for grade point average or self-acceptance scores.

Fowler (1982) interviewed male and female assistant professors in a "prestigious" research oriented university and found no significant differences in number or quality of mentor relationships reported and participant's sex.

Reskins(1979) reported Ph.D chemists who had been sponsored in graduate school were more productive in and after graduate school, and had better job opportunities immediately after graduation than did their non-sponsored peers. One factor which must be noted about her study was apparently only male participants were used. Additionally, all participants apparently had been sponsored by males. However, this was never explicitly stated in her study.

Riley & Wretch (1985) surveyed female lawyers about previous mentor experiences. Participants who reported having previously had one intense mentor relationship (35% of the sample) scored higher on career success and career satisfaction scales than those who reported having previously had several mentors (28%) who in turn scored higher on those same variables than the participants who reported not having any previous mentor relationships (35%).

Paludi, et al. (1987) reported female-mentored males mentioned their mentor's warmth, nurturance, and understanding as factors which had influenced their mentor selection process, but failed to mention factors as mentor's competency, network, or power as having influenced their selection. Paludi, (1989) (personal communication) has replicated this finding with a larger sample However, no control group was used of males with male advisors.

Paludi & Farylo (1985) reported 63% of male undergraduate participants surveyed stated mentor sex was not the salient factor in mentor selection but the advocacy, guidance, and support by the mentor of the protege were important factors in selection. However, most of the males surveyed had male mentors.

Olian, et al. (1988), investigated mentor's sex and protege's professional attraction in a simulation experiment, utilizing fictional transcripts of corporate mentor-protege dyads. All the fictional proteges were

males. Fictional mentors were corporate managers. Sex of the manager varied in the protocol. Participants were male and female business students. Participants' ratings of the fictional protege's attraction to the mentor was based upon the participants' perceptions of the manager's interpersonal skills. The more the mentor was perceived as interpersonally competent, the higher was the rated protege attraction to the mentor. Level of interpersonal competence interacted with the manager's network. If the manager had strong interpersonal skills, but no visibly strong organizational network links, participants' ratings indicated protege attraction was not detrimentally affected. When the manager had weaker interpersonal skills, participants' ratings indicated the protege's integration into the professional network compensated him for the manager's interpersonal skill deficits.

Ochberg, et al. (1986) surveyed mental health administrators. Their methodology allowed analysis of the bilateral nature of the mentoring interaction, as half of their participants were asked to complete the questionnaire from the perspective of having served as a mentor while the other half were asked to describe their experience as a protege. Forty-six males and 18 females participated as proteges, 46 males and 16 females participated as mentors. They derived three dimensions of mentoring from a factor analysis:(1) sponsorship-the mentor protected their protege,

promoted their career, and counseled their protege about behind the scene politics. (2) Personal interest-the mentor had an outside of work relationship with their protege, offered personal counsel, and served as a model of how to reconcile career and family. (3) Ideals-the mentor passed on a larger philosophical vision. There was a difference between the mentor's ratings and the protege's ratings of these dimensions. While 54.0% of proteges rated the ideals dimensions higher than the sponsorship dimension, in contrast 65.0% of mentors rated the sponsorship dimension higher than the ideal dimensions. However, both mentors and proteges rated personal interest as lowest of the trilogy. Thus, from the proteges' perspective, the mentor reinforced the attitudes and shaped their inchoate professional belief system. This was considered more important than career advancement. From the mentors' perspective, their most important function was to provide vocational advancement for the proteges. Ochberg, et al. (1986) either did not find or omitted to report if participant's sex was a significant factor which affected the ratings.

Schockett, Haring, & Hidore (1985) also factor-analyzed mentoring functions and derived two dimensions. One dimension was a psychosocial dimension, where the mentor was a role model, was encouraging and counseling, and was a transitional figure. It must be noted that this group defined the latter term not with the Levinson et al. (1978)

psychoanalytic derivation, but in the sense of a movement from a subordinate to a peer role. The second dimension was a vocational dimension, where the mentor was educating, consulting, coaching, sponsoring, and protecting the protege. Unlike Ochberg et al. (1986) they did not report deriving an ideals dimension from their factor analysis. This may be best explained by noting the difference in participants and methodology between the two research teams. The former was a retrospective survey of mental health professionals, the latter was a laboratory study of college students who rated a series of vignettes from 1 to 7 on the desirability of the mentoring assistance depicted. Students rated the vignettes on both psychosocial and vocational functions. The notion of a larger philosophical vision may not have been depicted in any vignette, and data on such a component would not have been collected.

In support of the two mentoring dimensions derived by Schockett & Haring-Hidore,(1985), however, other studies also failed to report an ideals dimension, where the mentor and the protege shared a vision. For example, Burke (1984) also derived three factors of the mentoring relationship, similar to the Schockett & Haring-Hidore (1985) dimensions. His dimensions were: career development functions, psychosocial functions and role model functions. Note the role model function was a separate factor from the psychosocial dimension in this study.

Summary of studies:

In both the corporate and the academic literature, having a mentor was a professional asset: Mentored participants were more professionally involved and were generally more satisfied with their career progress. Although the majority of available faculty mentors were predominantly male, this review failed to confirm the suggestion reported in several essays that females were less likely to establish mentoring relationships than were men (cf. Bogat & Redner, 1985; Douvan, 1976). However, McNeer, 1983 and Busch, 1985 also failed to find sex differences.

However, research is needed to understand several factors. For one, were there differences in the magnitude of functions provided to a protege by the mentor, based on the mentor's sex? Current research was contradictory and inconclusive. For example, Burke (1984) in his research, reported female mentors provided more psychosocial functions to their proteges. Paludi, (1988) similarly reported female-mentored males reported many psychosocial functions were provided by their female mentors. Bowen (1985,1986), however reported male mentors provided more psychosocial functions. Burke (1984) also reported female mentors reported they had a greater career impact on their proteges, thus indicative of their greater vocational impact. Male-mentored females, however, were more likely to report their male mentor had a greater career impact on them.

Secondly, were female proteges more likely to have multiple mentors than were the male proteges? Roche (1979) reported female proteges had more mentors than male proteges. In contradiction to this, Burke (1984) reported male proteges had more mentors than female proteges. However, Burke's (1984) small sample of female mentors casts doubts on the generalizability of his findings.

Thirdly, was sex of the mentor by itself an important factor for the protege? Swerdlik & Bardon (1988) reported females were more likely to seek same-sex mentors than were the males. Similarly, Paludi & Farlyo (1985) reported that males failed to cite sex as a salient factor in their mentor selection, though they were mostly male-mentored. However, the possible lack of available female mentors might be related to their response.

Studies reviewed were plagued by faulty comparison procedures. Researchers failed to use adequate numbers of either female or male participants when they made between-sex comparisons. Additionally, many researchers who used undergraduate participants made dubious use of the term "mentor" to describe a formal relationship between a student and a teacher, matched by the researchers. There seemed to be little mutuality or choice to bind these pairs. What functions were provided by the protege to their mentors? There was apparently no mentor/protege collaboration, no delegation by the mentors of their less compelling work to

their proteges. The teachers provided some mentor functions to the student, such as orientation, resources, information, and counseling, but the student provided no protege functions in return to the teacher.

In summary, publication of the multiple and bilateral benefits derived from mentoring to participants from such diverse areas as academia and industry have popularized mentoring as an attractive and necessary relationship which provided intrinsic satisfaction and extrinsic rewards not only to the individuals involved but to the larger milieu. The focus of empirical literature was on how mentoring enhanced a protege's career or increased the proteges professional productivity. However, only positive mentoring outcomes were reported (Merriam,1983; Speizer, 1981). Positive outcomes biased perceptions that mentoring was a non-problematic relationship. However, problems exist which have been empirically neglected.

Neglected topics within mentoring:

Two neglected topics within mentoring included dysfunctional mentoring relationships and inadequate considerations of variations in mentoring relationships.

From the protege's point of view, what personality traits identified the potentially dysfunctional mentor? Cronan-Hillix, et al. (1986) empirically listed proteges' six most frequently reported negative mentor characteristics. (1)"Uninterested/unsupportive, (2)

personality characteristics (i.e. rigidity, criticality, egocentricity, prejudice,personal pathology, rushed, overextended, disorganized, dishonest, untrustworthy), (3) lack knowledge/incompetent, (4) exploitative, (5) attitude towards students, (6) unavailable/inaccessible". Torrance (1983) similarly reported female participants listed the following traits as alienating factors in a mentor: "ambitiousness, compulsivity to work, critical judgment, dominating or intimidating manner, lack of empathy,lack of future orientation, high standards, hypocrisy, intolerance of the ideas of others, inflexibility, perfectionism, and trendiness." However, he did not report what alienated males from their mentors.

Several essays hypothesize negatived effects from dysfunctional mentoring relationships, but few empirical studies on mentoring operationalized these concepts and empirically validated them. Seven potentially negative effects from the mentoring relationship were culled from the literature as a whole. While the first four were only reported in the business literature, the last three were reported in both academic and business literatures.

1. Dysfunctional mentoring may create dissatisfying and potentially destructive professional relationships (Kram, 1980).
2. Dysfunctional mentoring may cause the protege to suffer professionally, as association with a poor

mentor may create a negative associational tie which will have a detrimental impact on the protege's career (Fury, 1979, in Wright & Wright, 1987; Fitt & Newton, 1981).

3. A dysfunctional mentor might attempt to create clones of themselves from their protege. This was viewed as especially problematic for male-mentored males (Colwill,1984).

4. A dysfunctional mentor might attempt to live vicariously through their protege's accomplishments (Kram, 1983).

5. A dysfunctional mentor may dominate their protege and discourage creativity (Wright & Wright, 1987; Levinson, et al., 1978).

6. A dysfunctional mentor might encourage their protege to become overdependent upon the mentor and might stunt the growth of the protege's career in this fashion (Busch, 1985; Vertz, 1985; Berry, 1983).

7. A dysfunctional mentor might abuse the power in this relationship to exploit their protege (Wright & Wright, 1987; Levinson,et al 1978).

Additionally, the hypothesized risks in a dysfunctional mentoring relationship did not solely affect the protege. Six risk factors for the mentor have been conceptualized. The ultimate risk was reported in both business and academic literatures, while the first five risks were reported in the

business literature.

1. A mentor may err in their estimation of a protege's ability, and their poor judgment in protege selection would reflect negatively upon the mentor (Fitt & Newton, 1981; Kram, 1985).

2. A mentor may become frustrated if they were unable to promote their protege (Kram, 1985).

3. A mentor may become envious or resentful if their protege professionally matched or surpassed them. Mentors who perceived their own careers as stagnating may be more at risk for this outcome (Levinson, et al. 1978; Kram, 1985).

4. An individual serving in the mentor role may not have the traits needed to mentor another. They may subvert the relationship as an attempt to gain professional immortality, or attempt to live through the protege (Wright & Wright, 1987; Levinson, et al. 1978). They may be unwilling to allow the protege to assume professional autonomy (Vertz,1985).

5. An individual serving in the mentor role may subvert the relationship to unfairly promote their protege in the milieu, regardless of ability factors (Wright & Wright, 1987).

6. A mentor may have personality conflicts with the protege, especially if the protege will not listen or cannot take criticism from the mentor. (Wright &

Wright,1987; Haring Hidore & Brooks, 1986, in Haring-Hidore, 1987; Levinson, et al., 1978).

The mentor's need for power was a common underlying theme of these six conceptualized risks. If the mentor cannot modulate or recognized the presence of these needs, then a dysfunctional mentoring relationship might ensue.

However, these individuals who served in mentor roles often might not qualify as mentors by definition of the term. It would be more difficult to empirically research dysfunctional mentoring, as in essence, dysfunctional mentors were oxymorons. Individuals unwilling to share their accomplishments or to have empathy for more vulnerable individuals, should not be termed as mentors or be permitted to formally assume such roles. Thus, formal mentoring programs could not automatically include all senior managers or full professors in the mentor pool. Instead, objective assessment would be required to determine whether the potential mentor had resolved the Eriksonian generativity versus stagnation crisis, in favor of the former. For example, Lawrie (1987) suggested investigating extracurricular activities of individuals under consideration as potential mentors. Lawrie (1987) suggested potential mentors would have a previous history as adult leaders in youth organizations. Additionally, potential mentors would have previously experienced a positive mentoring experience in the role of the protege.

Some researchers have reported dysfunctional mentoring relationships inappropriately, as their eligibility criteria for who was a mentor was too broad. For example, Yoder, et al (1985) studied the first class of female cadets who graduated West Point. She interviewed 90% of the 62 female graduates. She reported when these females had progressed in their studies they had failed to mentor the incoming female students. Participants reported they had been pioneers, whose experiences would be unappreciated by the incoming female students. Furthermore, no one helped them when they were newcomers to West Point, so they in return would not help others. As was earlier stated, being a mentor was dependent upon having reached a certain developmental stage, upon having been mentored, and upon having reached an advanced occupational level. The procedural information and definition of what constituted a mentoring relationship in the Yoder et al. study were not consonant with the components listed before as constituting a mentoring relationship. The participants were too young to serve as mentors. Additionally, the age difference between them and the incoming freshmen female "plebes" was too narrow.

Dysfunctional mentoring research may be more difficult to conduct as those who have abused their mentor roles and those who were abused by their mentors might repudiate the relationship and deny such a relationship ever existed.

Another inadequately investigated concept in the

mentoring literature was alternatives to the traditional mentoring paradigm. Indeed, Levinson et al. (1978) suggested the possibility of variations within the mentor model.

Grooming-mentoring:

The archetypal Levinson, et al. (1978) mentoring model was denoted by researchers as grooming-mentoring because the mentor "groomed" the protege for a leadership role. The grooming mentor must be a powerful individual within the milieu to advance the protege. Secondly, the mentor and the protege must have compatible personalities, as they will be working closely together over the several years. The grooming-mentor developed the protege in a four part developmental sequence: "Teaching/coaching, psychological support to the protege in return for professional support from the protege, institutional support to the protege, and the movement of the protege by the mentor into a position of professional independence and collegiality" (Swobada & Millar, 1986).

Grooming-mentoring was criticized as an unequal interaction, with negative effects upon proteges, especially females (Swobada & Millar, 1986). Researchers had not hypothesized specific negative effects upon male proteges with female mentors, but positted that such would exist (Hunt & Michael, 1983; Colwill, 1984). This section will be divided into two subsections: Hypothesized negative effects of cross-gender mentoring and actual empirical

investigations in cross-gender mentoring. Note that all negative effects research was conducted on male-mentored females.

The 10 hypothesized negative effects for male-mentored females were culled from a review of both business and academic literatures. However, of these ten, the first seven were reported in the business literature, the penultimate two items were reported in both literatures, and the last item was reported only in the academic literature.

1. The male mentor might sexualize the mentoring relationship with his female protege (Lean,1983; Bowen,1985; Clawsen & Kram, 1984; Bolton, 1980).
2. The male mentor might attempt to create a father/daughterrelationship, where the mentor psychologically pressured his female protege to remain dependent upon him (Colwill, 1984; Levinson, et al. 1978).
3. The female protege might be regarded as the token female in the office, and not representative of female professionals in general (Colwill, 1984; Noe, 1988a).
4. The female might not be regarded as a protege, but as the male's assistant (Colwill, 1984).
5. The male mentor might not be able to demonstrate how to integrate work and home roles to the female protege (Wright & Wright,1987;cf, Epstein, 1985).
6. The male mentor might stereotype females as not

possessing professional qualities (in business: Noe, 1988a; Clawsen & Kram, 1984;in academe:Bogat & Redner, 1985; White, 1970; O'Leary, 1971).

7. The male mentor might set higher standards of adequate performance for their female proteges to meet than they set for their male proteges. (Lean,1983).

8. The male mentor might be unwilling to share information with females (Lean, 1983; Laws, 1978).

9. The male mentor might not identify with the female proteges (White, 1970;Colwill, 1984).

10. The male mentor's spouse might become jealous of the female protege (White, 1970).

Researchers suggested male mentor/female protege relationships might be problematic, especially for female proteges. However, a literature search revealed few empirical efforts investigated these abovementioned concerns. Presented below were results from cross-sex mentoring research investigations supplemented with results from related research investigations.

The male mentor might sexualize the mentoring relationship with his female protege.

The specter of this exploitation of the mentor/protege relationship received not only the bulk of the hypothesized attention, but the bulk of the empirical investigations to date. Research reviewed indicated the validity of these concerns. Furthermore, sexualizing the mentoring

relationship may be more likely to occur in academia than in industry, or was more reported to occur in the former than in the latter. For example, Pope, et al. (1979) surveyed 481 psychologists. Of those who responded, 16.5% of the females and 3% of the males reported sexual contact as a graduate student with their psychology educator. In the educator role, 8% of the females and 19% of the males reported sexual contacts with their students. (cf. Glaser & Thorpe, 1988) In addition to inappropriate sexual contact with a mentor, there were also reminders to the female students of the potential for inappropriate sexual contact with a mentor. For example, Paludi,(1988a) in a survey of female undergraduates reported that 30% of the females had been sexually harassed by at least one male professor as an undergraduate.

In the business literature, sexual contact between mentor and protege was not rigorously investigated. Instead, the topic was dismissed as a product of rumors, because the corporate world was too much of a "fishbowl" to allow for the occurrence of such relationships (Colwill, 1984). For example, Fitt & Newton (1981) did not "regard" sexual activity as a "problem" as only three female proteges reported such a relationship. However, this constituted 12.5% of their sample. They also reported "several more" [mentor/protege relationships] where there may have been "sexual tension" between the female protege and her male

mentor,but they did not operationalize this term or provide data. While this abuse was not consistently reported in all samples of male mentored females (cf. McNeer, 1983, of female administrators) and this abuse was not perpetuated in the majority of the examined cross-gender mentor relationships, the literature examined validated the existence of this problem for male-mentored females, and suggested the need to implement a set of procedures to prevent the occurrence of sexual exploitation of the mentor relationship.

The male mentor might attempt to create a father/daughter relationship, where the mentor psychologically pressured his female protege to remain dependent upon him.

This concept was not empirically tested. McNeer (1983) reported 2 of the 8 mentored females in their investigation described their male mentors as fatherly,older men. Whether this constituted a father/daughter relationship, merits future research attention.

The female protege might be regarded as the token female in the office, and not representative of female professionals in general.

Fitt & Newton (1981) reported a few male mentors were concerned about the heightened visibility of their female proteges, because of the potential for negative attention cast upon the mentor if the female protege erred. However, again, this has not received much empirical investigation.

The female might not be regarded as a protege, but as the male's assistant.

In academia, male and female graduate students received differential treatment by professors, apparently based upon sex. Weiss, for example(1981) reported male and female graduate students met equally as often with their professors on an informal basis, however, male students were more likely to report being regarded by their faculty as colleagues than were the female students. However, this involved extrapolation from another, albeit related, literature. The validity of this as it affect mentoring experiences remains uncertain.

The male mentor might not be able to demonstrate how to integrate work and home roles to the female protege.

This negative effect was not apparently investigated in the mentoring literature.

The male mentors might stereotype females as not possessing professional qualities.

Collateral support for this was found from an extrapolation to related literatures. For example, Hirschberg & Itkin(1978) reported though female graduate students had equal or better academic qualifications when compared to the male graduate students, the male faculty perceived male graduate students as possessing more "drive". Bogat & Redner (1985) reported females were more likely to have to personally finance their graduate school education.

This would then increase the likelihood of female students having to work outside of class. Thus, faculty had decreased opportunities to interact with them in informal, outside of class situations. In addition, faculty have decreased opportunity to re-examine their covert stereotypes on female scholars. Rosen (1974) offered collateral support for male professionals disparagement of female professional ability. She reported male medical faculty surveyed were significantly more oriented for maternal roles for females than were the female faculty, the male medical students or the female medical students surveyed. In addition, Holahan(1979) found when female graduate students were the minority sex in their department, male faculty had the most negative attitudes towards them compared to departments where the number of female students equalled or exceeded those of the male students (cf Hite, 1981). However, professional male disparagement of female professional ability was not found in all samples of male mentors. For example, a recent study indicated female proteges of male mentors were not undervalued due to their sex. Blackburn,Chapmen, & Cameron (1981) surveyed senior faculty named by former students as having been their mentors. Of the male mentors surveyed, 24% nominated previous female students as having been their most successful protege.

The male mentor might set higher standards of adequate performance for their female proteges to meet than they set for their male proteges.

Fitt & Newton(1981) reported a few mentors surveyed engaged in this practice as a way of resolving the problem of tokenism, since females proteges (and their mistakes) would be more visible than male proteges (and their mistakes). Again, apparently, when females were tokens in male institutions, males stereotyped females as having decreased professional capacities compared to males.

The male mentor might be unwilling to share information with females.

This concern was based upon studies of females and their professional networks, and was a controversial allegation. Andreadis,(1983); White,(1970); Yoder,et al. (1986), Helmreich, et al. (1980) supported this allegation that females were isolated from the "old boy" professional network. In contrast, Fitt & Newton, (1981) McNeer,(1983), and Fowler, (1982) failed to find differences between males, females and their informal professional networks.

The male mentors might not identify with the female proteges.

Although this allegation had not been extensively investigated, Bowen's (1985, 1986) research failed to support this concern.

The male mentor's spouse might become jealous of the female protege.

There was apparently no research conducted on this allegation to either support or disprove it.

Summary: Problematic cross-sex mentoring relationships:

Concern about male mentors exploiting the relationship by sexualizing it with female proteges was supported. However, this outcome was neither inevitable nor seemingly the usual course of most female protege/male mentor relationships. Concern about females being stereotyped by males was also supported,but also was not an inevitable outcome. All other hypothesis were not confirmed or not investigated. One could speculate professional males would re-evaluate their gender-attitudes if professional females continue to numerically increase in the workplace, to receive promotions, and to gain power in previously all male bastions. Additionally, a review of research from both milieus found several investigators who reported no differences between the sexes of their protege experience. For example, in the business milieu, Alleman, et al (1984); Bowen, (1985, 1986);Fitt & Newton, (1981);McNeer, (1983) reported no sex-differences in a mentor's treatment of their proteges. In academe, Ochberg et al. (1986) and Fowler, (1982) reported no sex-differences in a mentor's treatment of their proteges.

Statistics indicated that presence of professional

females will numerically increase in the future. Wilson, et al. (1982) cited statistics which indicated that females constitute 1/3 of all law students and 1/4 of all medical, veterinary, and business administration students. Thus, in the future, many occupations which were traditionally male-dominated would have increased female professional representation. Additionally, females would have both male and female proteges to mentor. Research needs to be conducted to determine what problems are specific to female-mentored relationships, and differences in female mentoring styles.

Networking mentoring:

To guard against the potential for females experiencing exploitation as proteges, Swobada & Millar (1986) proposed a variation in the traditional mentoring model. The traditional, masculine derived grooming-mentoring model was viewed as problematic and inappropriate for female mentors, as grooming-mentoring may involved favoritism, sexualization of the mentoring relationship, and tokenism. (Swobada & Millar, 1986).

Swobada & Millar (1986) promoted an alternative mentoring model called "networking mentoring". They proposed two criteria to measure professional success: a person's ability to advance the career of their supervisees and a person's ability to make all those they supervise as independent as possible. Networking-mentoring was

characterized by such traits as information sharing and mutuality. Networking mentoring was described as an ever changing series of dyadic contacts, where each person enacted the roles of mentor and protege to different degrees in the dyad. (Swobada & Millar, 1986).

Networking-mentoring was viewed as more consonant with the professional female experience than was the grooming-mentoring model. However, networking-mentoring was not considered equivalent to grooming-mentoring. Instead, networking-mentoring was considered task oriented and important for individuals seeking career advancement, with traditional mentoring viewed as more powerful. (Swobada & Millar, 1986).

There were six positive effects ascribed to networking mentoring. Networking-mentoring was an additional resource for females in grooming-mentoring relationships. Networking mentoring was a less intense relationship, with less mentor-protege commitment, and less concern about dyadic compatibility than in grooming-mentoring. Networking-mentoring included individuals from all levels of the professional hierarchy and it provided proteges with a wider range of role-models and leadership styles than in grooming-mentoring. Networking-mentoring increased the protege's self-reliance and did not selectively promote proteges, as did grooming-mentoring. Female proteges were thus at decreased risk of being accused by others for receiving

their promotions due to a sexual relationship with their mentor than they were in a grooming-mentoring relationship. Finally, the mentor's colleagues would not resent the mentor/protege relationship because they also would be included in this relationship. (Swobada & Millar, 1986).

The sole predicted negative effect of networking-mentoring was it required more time for the protege to advance in the professional hierarchy than under the grooming-mentoring model. However, this was viewed as inconsequential in comparison to the sextet of positive effects of the proposed model (Swobada & Millar, 1986).

Peer mentoring:

Another variation in mentoring relationships was termed "peer mentoring." (Kram & Isabella, 1985). They empirically investigated peer mentoring as a mentoring alternative in the corporate milieu. They identified 15 individuals in three age groups: Early career stage:25-35 years;midcareer stage:36-45 years, and late career stage:46-65. All groups had relatively equal representation of both male and female participants. Kram & Isabella (1985) utilized a biographical interview similar to the Levinson, et. al. (1979) one. Participants were asked to select up to two such individuals with whom they had supportive relationships. Kram & Isabella (1985) then interviewed the individuals previously named by the participants as having served as peer mentors. Kram & Isabella (1985) reported three benefits were provided by

peer mentors: "(1) Career enhanc[ment], (2) Psychosocial functions, and (3) Mutuality".

Kram & Isabella (1985) concluded there were similarities between peers and traditional mentors. However, they also concluded that although peer relationships provided a variety of developmental benefits at all career stages, a more traditional mentor was important in the individual's early career stage.

Summary:

Alternatives to traditional mentoring relationships merit future research investigations. Professional females are increasing their presence in the mentor role (Swobada & Millar, 1986). However, less is known about how females mentor their proteges as most of the literature focussed on the female experience as proteges.

Since limited research was conducted on professional females as mentors, before beginning the rationalization of hypotheses for this dissertation research, some of the empirically investigated differences between males and females across the lifespan will be reviewed and invoked to support hypothesis on feminist cross sex mentoring.

Gender Differences:

Males and females have for generations occupied separate domains. Across cultures and over time, within the family and within the professions, males have usually been found in high status positions (Maccoby & Jacklin, 1974;

Unger, 1979). Furthermore, Unger (1979), suggested biological sex alone conveyed significant information about an individual's status not easily changed by the performance capabilities of particular individuals. Additionally, she suggested females who aspired to positions of power would be regarded by others as unfeminine. She suggested powerful females were seen as colder, more aggressive and more powerful than comparable males but not more competent. Furthermore, she suggested males would like such females only from a distance. She concluded the sex of an individual under evaluation affected observer perceptions about performance more than the performance itself (Unger, 1979).

Such a conclusion was based on her review of research. For example, Deaux & Emswiller (1974) reported males expected to perform better than females on tasks, male performers were rated as more skillful than the females, and males attributed successful performance by a male to skill and attributed successful performance by a female to luck. Paludi & Bauer (1986) later reported males preferred male authors and masculine articles over neutral and feminine ones.

Other research in professional gender differences investigated necessary personality traits needed for success in a male-dominated hierarchy. For example, Vertz(1985) surveyed the personality, attitudinal, and domestic characteristics of employees at all grade levels of the IRS

in Wisconsin. Females in advanced positions maintained their self-perceptions of femininity;men of masculinity. Females in advanced positions had more non-traditional attitudes toward the role of females in employment than did men. Females in advanced positions had no preference for the sex of their supervisor: males preferred other males for their supervisor. This overt expression of preference based solely upon sex contradicted studies conducted by Paludi & Farylo (1985) and Swerdlik & Bardon, (1988) who did not report males expressed preferences for a mentor based upon sex. A confound in the analysis of the Vertz (1985) study was the unequal number of participants in the various cells. For example, 16 females and 54 males were in advanced positions. Presumably, the males had no direct experience in working with a female as their supervisor, and responded based upon stereotypes of supervisory females. In addition, studies conducted in the workplace may not be comparable to studies conducted in academia. Vertz (1985) concluded that females in advanced positions did not differ from males on traits such as self-esteem, aggressiveness, and management personality. However, based upon Unger's (1979) suggestions, would male co-workers have reported that their female colleagues indeed had lost feminine traits?

However, one suggested modulating factor upon perceptions of appropriate gender-roles was an individual's previous experience of maternal employment. For example,

according to Unger, (1979) "indirectly, there is evidence that maternal employment broadens perceptions of sex roles for both sexes. The cross-sex parent provides an important source of reinforcement for sex roles." Subsequently, Gold & Andres, 1978, Dellas, 1979, and Zimmerman & Bernstein (1983) confirmed this suggestion. However, Hoffman, 1989, in a review of the literature reported the variable of maternal employment was not adequately operationalized.

Academia

The business sector was not a unique repository for gender-stereotypy. Indirectly, there was evidence in the academic sector which suggested male and females, both as graduate students and as professors, experienced gender-stereotyping of their capabilities. However, the sharpness of these differences may be dissipating as females increased their physical presence in the academic hierarchy.

As scholars, White(1970) cited a 1967 study, where full time,female doctorates published as much as their male colleagues, were equally involved in professional activities, were more likely to be involved in research, were more likely to be included in honorary societies, and more likely to be awarded fellowships. However, despite formal recognition of competence, female scholars reported they were denied informal signs of recognition from their male colleagues and they felt excluded from the informal network of scholars.

Additionally, female scholars in prestigious positions were a distinct minority in comparison to the numbers of male scholars who have attained such ranks. Graham(1970),for example, reported that females constituted 2% of the full professors, and in general, represented 18% of the staff of higher educational institutions. Female faculty were usually employed by small colleges and universities. Thus, though females had equal professional qualifications as the males, they had lesser professional status than the males did.

However, by the 1980's, research indicated that such "subtle discrimination" (Graham ,1970) against females were gradually extinguished as females were promoted into positions of power within previous exclusive male hierarchies. For example, Over (1981) studied the proportion of females as psychology journal editors. He used data from 14 journals for 1977 and reported the median percentage of females on editorial boards was 9.3% White(1985) used these same journals for 1982, and found that the number of females on editorial boards had increased on 13 out of 14 of these journals.

However, while females may have gained increased representation in powerful positions, they may not have increased their representation in influential informal positions, as they may not necessarily have access to collegial networks. However evidence for this allegation was

contradictory. For example, Fowler (1982) found no difference in access to professional networks, Helmreich, et al. (1980) reported females were excluded from male professional networks, Kaufman, (1978) and Denmark, et. al. (1987) suggested professional males and professional females were segregated in same-sex collegial networks, and Boice, et al. (1985) suggested younger psychologists failed to perceive discrimination against their professional female colleagues.

While research on female participation in collegial networks was contradictory, research conducted in academia revealed differences in faculty perception and treatment of students based on the sex and status of the student. Research on faculty interaction with undergraduate students revealed no significant differences in interaction based on student sex. For example, Sternglanz & Lyberger-Ficek(1977) investigated sex differences in student/teacher interactions in undergraduate classrooms. While male students were more likely to enroll in male taught classes, were more likely to respond to teacher initiated interactions, and were more likely to initiate an interaction with the teacher than were the female students, teachers, regardless of their sex, were likely to continue an interaction with students, and were likely to attempt to recognize every in classroom attempt to initiate an interaction with a student, regardless of the latter's sex.

In contrast to the undergraduate literature, research on the graduate school level indicated that faculty interacted differently with male students than they did with the female students. For example, Hirschberg & Itkin (1978) surveyed psychology graduate students. The best predictor of who received the Ph.D after five to ten years in the program was the student's sex: 68% of the males and 35% of the females had completed their doctorate within this time frame. Although the females surveyed had better admission variables and had received more favorable ratings on the ability measures, the faculty perceived them as having less "drive" than the male students.

Weiss(1981) studied graduate students' professional role commitment. She reported female students met with their professors on an informal basis almost as often as male students, and appeared to have as high a professional self-concept as the males. However, female students ranked somewhat lower on productivity than male students. In addition, 25% of the male students perceived themselves as being on a collegial basis with their faculty, in comparison to 19% of the female students.

Similarly, Hite (1981) surveyed doctoral students from 27 fields. She divided the fields into three subareas:traditional female fields,androgynous fields, and non-traditional female fields. She reported regardless of the field, male students perceived more faculty support than

did female students.

Holahan (1979) reported female doctoral students reported more negative attitudes shown toward them by the male faculty when they were the minority sex in a department, than did female students who were not the minority sex in the department.

In graduate and professional schools, female students were equally as qualified as were the male students. However,faculty favored the male students. This confirmed Unger's suggestion that females would be seen as less competent, judged solely by their sex. However, on a more optimistic note, the research also suggested that as the number of female students increased in a program, the likelihood of male faculty exhibiting negative attitudes towards them decreased. Either the presence of many females inhibited the male faculty against the overt expression of sexism, or the performance of the female students challenged and overcame their stereotyped notion of female ability.

The phenomena of mentoring had been studied, but the phenomena of feminist mentoring remained unaddressed.Furthermore, the interaction of males with female professionals was neglected in the research area. To understand any field, and in particular mentoring, the sexes must be studied on all levels, as each female, like each male, is a unique individual who brings her own experience,

talents, and flaws into a situation. (cf.Lott, 1985) There were powerful females in high level positions, who supervised males (cf. Swobada & Millar, 1986). If males fail to experience females as colleagues or supervisors, they would continue to stereotype female abilities. Female mentors may provoke their male proteges to a re-examination of covertly held stereotypes about female abilities.

Additionally, feminist scholars criticized grooming-mentoring for creating an "old boys" networks which excluded females or which did not allow them equal access to resources. Feminist-mentoring risks creating an exclusive "old girls" network which excludes men or does not allow them equal access to resources. When females exclusively mentor other females, they erect a barrier against the dissemination of knowledge into their discipline as a whole. Males excluded from female networks would be denied the opportunity of learning from female models, thus stunting an important aspect of their professional enculteration.

Studying the attitudes of male proteges towards their male and female mentors would supplement the empirical literature of both gender-roles and mentoring. Cross-sex mentoring, where females act as a mentor to males, had been scarcely studied. Much had been conceptualized but little had been confirmed. One way of resolving different male/female modes of mentoring would be to compare the reports of male and female mentored individuals. As females

continue to advance professionally, it would be useful to include in the mentoring database empirically derived data about efficacious variations in mentoring styles.

Furthermore, to solely study female proteges would reinforce stereotypes about female powerlessness. The mentoring literature suggests regardless of their sex, young professionals needed career assistance from more experienced professionals in order to advance in their career.

To conduct empirical research on male proteges' attitudes to professional females would benefit both proteges and mentors. What expectations do such males have of a mentor relationship, and are these expectations fulfilled or disappointed? Feminist scholarship would be benefitted: by the protege description, the literature would be enriched by empirical data on whether professional females were more likely to use networking techniques or more likely to use grooming techniques. In addition, data would be generated about feminist mentoring and the efficacy of various mentoring techniques. Furthermore, data would be generated on problems unique to a female mentor/male protege dyad. Finally, through comparison of the reports of male and female-mentored males, potential proteges would gain a framework of expectations from their mentors.

Chapter 3: Rationales and Hypotheses to be Tested:

As noted, studies of men who have been mentored by women have not been extensively conducted. This rendered it difficult to provide specific hypotheses directly derived from the literature. However, the hypotheses below were inspired by notable omissions in the extant literature, and the research was undertaken for the purpose of providing a database of mentoring experiences in graduate school, inspiring new questions, and providing directions for further research.

The present study compared male-mentored and female-mentored males' perceptions of their mentoring experiences, mentor characteristics, attitudes toward women, and self-descriptions. Select demographic variables were also included in the study. Dissertation students were selected as the research population because they were more likely to have mentors than either undergraduate students or neophyte doctoral students. Additionally, both male and female doctoral faculty generally possess high academic rank, have a tenure track appointment, and supervise dissertation students. These factors decrease the status differential between male and female faculty previously mentioned (e.g. Graham, 1970). This study used doctoral programs which had at least 15% females on their faculty, in order to assure that female professors were available for mentoring

students. Many of these females supervised both male and female dissertation candidates. Previous surveys indicated that most graduate students considered their dissertation advisor as their mentor. (e.g. Swerdlik & Bardon, 1988).

Male dissertation candidates provided an interested researcher with a sample of both male and female-advised males, matched on professional status, in that they were both engaged in the same professional training and were exposed to the same potential mentors.

The five hypotheses required data collection in several areas. The experience of male versus female-mentored males were empirically tested. The rationales and the hypotheses were as follows:

1. According to Paludi & Farylo, (1985) male undergraduates stated the sex of a potential mentor was not an important characteristic. Participants reported advocacy, guidance, and support were important mentor characteristics. Swerdlik & Bardon (1988) also did not find that male proteges were likely to articulate a preference in the sex of their mentor. However, according to Unger (1979) men like competent women only from a distance. Therefore, since most of the Paludi & Farylo (1985) participants had male mentors, they may have been reluctant to admit to an overt or covert sex bias which had influenced their previous mentor selection. Secondly, as Paludi & Farlyo (1985) suggested, the mentor selection criteria articulated by

undergraduates may be dissimilar to those criteria articulated by graduate students, as there may be a developmental discontinuity between these two groups.

Although researchers failed to find males who articulated overt mentor sex-preferences, insufficient research has been conducted comparing experiential differences between female-mentored male proteges and male-mentored ones. For example, Paludi, et al. (1987) reported female-mentored males mentioned their mentor's warmth, understanding, and nurturance. This sample did not mention such factors as their mentor's competency, network, or power. The hypothesis to be tested utilized pre-existing same and cross-sex advisory dyads to examine differences in the reporting of both advisory and mentoring experiences in graduate school. It is recognized that mentoring relationships are mutually created by the two individuals involved. Differences between male and female-mentored males may or may not have pre-existed, and may or may not have resulted from the dynamics of the mentoring relationship. The dyads are expected to differ in certain ways, but these differences are not viewed as being caused necessarily by the mentoring relationship.

The literature cited led to an examination of male mentoring experiences in graduate school. Specifically, hypothesis 1 is that:

1(a) female-advised participants will be less likely

than male-advised participants to report that the sex of the mentor affected the development of their advisory relationship.

1(b) female-advised males will be more likely than male-advised males to report reexamining their views about female and male competence.

1(c) female-advised males will be more likely than male-advised males to report mentors provided psychosocial functions and,

1(d) female-advised males will be more likely than male-advised males to articulate special problems that have arisen in their advisory relationship specifically due to the sex of their advisor.

2. Levinson, et al. (1978) suggested that female mentor/male protege relationships were less intense, were characterized by greater self-reliance, by networking,and had fewer relationship problems, whereas the male mentor/male protege relationships were more intense and grooming oriented. (cf. Bowen, 1985, on males mentoring males; Swobada & Millar, 1986). Swobada & Millar (1986) later exhorted feminist scholars to utilize networking mentoring techniques with their proteges. Consequently, hypothesis 2 predicts that female-advised male graduate students will rate their relationship with their female advisors differently than will male-advised male graduate students. Specifically,

2(a) female-advised males will rate their advisors as more likely to use networking techniques than will the male-advised males.

2(b) male-advised males will rate their advisors as more likely to use grooming techniques than will the female-advised males.

3. Maccoby & Jacklin's (1974) and Unger's (1979) reviews of research on gender differences reported that males expected to be occupationally superior to females in adulthood. Males held attitudes that professional females were usually not as competent as professional males. In light of the mentor's role in the professional development and advancement of graduate students, this research suggests that males who hold such gender-stereotyped attitudes, in contrast to those who do not, would be less likely to voluntarily have their work sponsored by a female. Specifically,

Hypothesis 3 (a) female-advised male graduate students will have more liberal attitudes towards professional women than will male-advised males.

If hypothesis 3(a) is true, it is logical to proceed to hypothesis 3(b). Unger (1979) reports indirect evidence that maternal employment broadened offspring perceptions of appropriate male and female gender roles. Specifically,

Hypothesis 3(b) female-advised males will be more likely than will male-advised males to have previously

experienced maternal employment.

4. Unger (1979) reported that males perceive professional females as having gained power and status at the expense of their femininity. Little comparative research has been conducted to elucidate the personal gender-role traits held by males who work with professional females versus the traits held by males who work with professional males. One would expect that males who work with professional females would hold less traditional gender-role traits than those who work with professional males. Hypothesis 4 predicts that female-advised males will rate themselves and their advisors differently than will male-advised males. Specifically,

4(a) female-advised males will be more likely than will male-advised males to rate themselves and their advisor as androgynous than will male-advised males.

4(b) male-advised males will be more likely than will female-advised males to rate themselves and their advisor as masculine than will female-advised males.

Chapter 4: Methodology

Instruments:

All participants completed the following four self-administered paper and pencil measures:

Attitudes toward Women in Society (AWS) (Spence & Helmreich, 1972). The original AWS was 55 declarative statements designed to assess attitudes in regard to the role of women and the privileges women should or should not have in contemporary society. The AWS is a 4 point Likert self administered scale, with items rated from "Strongly disagree" to "Strongly agree". The scores for any item ranged from 0 to 3, with 0 representative of a traditional, conservative attitude and 3 representative of a liberal, profeminist attitude. Some of the statements were conservative in content, while others were liberal, thus the specific alternative (Strongly disagree/strongly agree) scored as 0 varied from item to item. A participant's score on the AWS was obtained by summing the values on the individual items (Spence & Helmreich, 1972).

Normative data on the scale was provided in the AWS manual. The normative sample was two groups of male and female college students at the University of Texas at Austin who rated the scale in the Fall of 1971 and the Spring of 1972. The combined mean score for the 713 males sampled was 89.3, the median 87.7, the range 37-156. The combined mean

score for the 768 females sampled was 98.2, the median 97.6, the range 35-161. No standard deviations were provided in the manual for the normative sample (Spence & Helmreich, 1972).

Spence & Helmreich, (1972) derived three factors on the scale after conducting a factor-analysis. Factor 1 was defined as attitudes relating to traditional notions about masculine superiority and the patriarchal family. An example of an item that was related to this factor was: "On the average, women should be regarded as less capable of contribution to economic production than are men". Factor 2 was defined as attitudes related to equality of opportunity for women in both vocational and educational spheres. An example of an item that was related to this factor was: "It is only fair that male workers should receive more pay than women even for identical work." Factor 3 was defined as attitudes related to the social/sexual relationship between males and females. An example of an item that was related to this factor was: "It is all right for wives to have an occasional, casual extramarital affair."

Spence & Helmreich (1972) did not provide either correlation coefficients for the scale's reliability or for the scale's validity in the manual.

The present investigation sampled 32 items from the complete AWS. Items selected were related to the first two factors described above. The present study investigated

men's attitudes about professional, highly accomplished females and sampled items from the AWS which were logically related to these specific attitudes.

Bem Sex Role Inventory (BSRI) (Bem, 1976). The BSRI consisted of 60 adjectives constructed to "implement empirical research on psychological androgyny." Of these adjectives, 20 were considered desirable feminine traits, 20 were considered desirable masculine traits, and the remaining 20 items were considered as neutral (filler). Item were selected by the authors as either masculine or feminine on the basis of cultural definitions of gender-typed social desirability (Bem, 1978).

The BSRI was formatted as a 7 point Likert self administered scale, with items rated from 1 "never or almost never true" to 7 "almost or almost always true".

Masculinity and femininity were two separate dimensions on the BSRI. A participant can be high on both dimensions (androgynous), low on both dimensions (undifferentiated), or high on one dimension and low on the other (feminine or masculine). Androgynous individuals were considered as less attuned to cultural differences between masculinity and femininity, and less likely therefore, to regulate behaviors in accordance with these dimensions (Bem, 1978).

Filler items functioned only as a context for masculine and feminine items. Filler items were originally included in the inventory because they had been evaluated as

traits that were not more desirable for one sex than another. However, Bem (1978) cited later research which indicated that the fillers on the BSRI no longer were rated in a reliably neutral manner. She suggested that these items should serve only as fillers, and not be scored.

Several procedures for scoring the BSRI were detailed in the BSRI manual. The median split procedure was utilized as the most logically related to this investigation's hypothesis on participants' androgyny or masculinity. In this investigation, each participant's raw scores for masculinity and femininity were calculated. This was the mean of the participant's rating of the masculine or the feminine adjectives. Then, a median score for all participants on each of these two dimensions was calculated. Participants were classified into one of four categories: masculine, feminine, undifferentiated, or androgynous, based on this median split.

Normative data was provided in the BSRI manual. The normative sample was 476 male and 340 female undergraduate students who rated themselves on the BSRI at Stanford University in California in 1978. The normative male student's mean score on the femininity scale was 4.6; the median 4.6, the standard deviation was .55. The normative female student's mean score on the femininity scale was 5.1, the median was 5.1, and the standard deviation was .53. Two tailed t-tests of the means were conducted between normative

male and female students' scores on the femininity scale and revealed significant differences between the means (t (814) = 11.95, $p<.001$) (Bem, 1978).

The normative male student's mean score on the masculinity scale was 5.1; the median was 5.1, and the standard deviation was .65. The normative female student's mean score on the masculinity scale was 4.8; the median was 4.8, and the standard deviation was .66. Two-tailed t-tests of the means were conducted between normative male and female student's scores on the masculinity scale and revealed significant differences between the means ($t(814) = 7.03, p<.001$) (Bem, 1978).

The BSRI manual also cited normative data for other samples. The mean for male adults (31-65 years)on the feminine scale was listed as 4.62, standard deviation .48. The mean for male adults on the masculine scale was listed as 5.14, with a standard deviation of .61.

The BSRI manual also provided test-retest correlation coefficients, utilizing 28 males from the Stanford 1978 male sample . These were calculated as .76 for the male scores on the Masculinity Scale and .89 for the male scores on the Femininity Scales.

The BSRI manual also provided internal consistency calculations, using coefficient alpha. This was calculated as .86 and .87 for the normative samples of males on the feminine and masculine dimensions, respectively, which was

interpreted as indicative of the BSRI's high reliability as an instrument. Finally, the authors correlated the masculinity and femininity scores for the 1978 normative sample. The males' sampled correlation between these dimensions was -.05; the females' sampled correlation between these dimensions was .00. Thus, the authors concluded that the masculinity and femininity scores were logically and empirically independent.

Survey of Mentoring Experiences (SME) (Paludi, 1988b). The original SME was created to assess the "influence of mentoring on mentors' own professional and personal lives." (Paludi, 1988b) The survey asked 24 open-ended questions on having mentored other individuals. The instructions to the participants disclosed that "the questions in this survey revolve around a few themes: initiating the mentor-protege relationship, gender similarities and distinctiveness issues in the mentor-protege relationship, personality characteristics you believe are important in mentors and proteges, and reasons why the mentor-protege relationship either lasts or does not last." The SME was usually content analyzed and no normative information was available.

For the purposes of this investigation, nine questions were adapted from the Survey of Your Mentoring Experiences to enable proteges to assess their experiences as a protege. Questions adapted from the original survey revolved around reasons participants considered themselves to have mentors,

the advantages and disadvantages of having mentors, the roles played by the mentor's sex in the development and success of the mentoring relationship, participant's recall of the initiation of the mentoring relationship, the mutuality in mentoring relationships, and the benefits accrued to the protege from involvement in a mentoring relationships. (See appendix. Starred items were adapted from the Paludi 1988 survey).

After adaptation, the SME used in this investigation was a four part survey. A potential problem in assessing mentoring relationships in graduate school was that participants would probably have dissertation advisors, but may fail to report that their advisor was their mentor. To assess the incidence of this, Part I asked 13 open ended questions about the participant's graduate advisory relationship. For example, "Were there other faculty members whom you might have selected? Why?". Part II asked 13 open ended questions about the participant's mentoring experiences. For example, "How would you explain the term 'Mentor'?" Part III asked nine open-ended sociodemographic questions about the participants. For example, "Ultimately, what do you aspire to as your career?"

Part IV was a 5 point Likert scale, with 30 declarative statements about the participant's mentors, which were to be rated from 1 "Always true" to 5 "never true". For example "My mentor is nurturant to me." or "My

mentor is a productive professional." The statements for Part IV were based on traits reported by either Torrance (1983) or Cronan-Hillix, et al (1986) as mentioned frequently by participant's about their mentors. (for the full SME, see appendix 1).

Information on the participant's mentoring experiences was derived from Part IV. Participant's could rate up to four individuals as their mentors. One potential confound was that there was no item that asked which (or if any) of the mentors rated (A,B,C, or D) was the participant's advisor. Participant's, however, were instructed to be consistent and also to list the sex of each mentor they rated on Part IV.

Scoring for part IV consisted of summing the individual items for each of mentor's rated by the participant. Not applicable was not a choice. However, four subjects reported that no one served any such functions for them and spontaneously rated each item as NA. NA for the purpose of analysis was scored as a 6. Scores then could range from 30 to 180. The lower the score, the more favorable was the participant's assessment of that relationship with the mentor.

To minimize ordering effects, the protocol was collated in different orders. Participants received the protocol collated in one of the following orders: AWS, BSRI, SME; AWS,SME, BSRI;BSRI, AWS, SME;BSRI, SME, AWS; SME, BSRI, AWS;

or SME, AWS, BSRI. Thus, some participants completed one of the scaled sections initially, while others completed the open ended questions initially.

Design and Analyses:

This investigation followed a quasi-experimental design (Campbell & Stanley, 1963) in that the experimenter controlled to whom and when the questionnaire was administered, but had no control over to whom and when of exposure of the treatment.(in this case, sex of advisors and previous maternal employment history).

Overall, the participants were divided into two groups, those with a male or those with a female advisor. These were not experimental and control groups in the true sense of the terms. According to Campbell and Stanley,(1963) the males with female mentors would be a static group: a group which has experienced the treatment (female mentors in graduate school) compared to one which has not, for the purpose of establishing the effect of the treatment. There was no comparison group as almost all participants had advisors.

There were three dependent variables:the participant's responses to the BSRI, to the AWS, and to the SME. There are two independent variables: mentor sex and participant's maternal employment history. Both of the independent variables were dichotomous. The design was viewed as a 2 x 2 factorial.

All analyses were conducted using an SPSS-X statistical

package on a mainframe computer (VAX).

Analysis of the AWS:

The mean scores of the 32 items were computed for each participant. Two tailed pooled variance t-tests of significance were computed to compare the differences between the means of female advised males and male advised males. A 2 x2 analysis of variance (ANOVA) was computed, with advisor's sex and maternal employment as the factors, and AWS scale score as the dependent variable.

Analysis of the BSRI:

The raw scores for the masculine and feminine dimensions were each computed twice: once for the participant's self ratings, and again for the participant's evaluation of their advisor. The median split technique was utilized twice: The first median split utilized the median obtained from the participant's self ratings; the second median split utilized the median obtained from the participant's ratings of their advisor on the BSRI items. Based on these separate median splits, participants and their advisors were categorized as masculine, feminine, androgynous, or undifferentiated.

Two independent sample chi square analyses were computed, one for the participants BSRI classification by sex of the advisor; the other for the advisors BSRI classification by sex of the advisor, based on the participant's rating of the latter.

Four two-tailed pooled variance t-tests of significance were computed. One t-test was computed to compare the differences in means between female-advised and male-advised samples on the BSRI masculine dimension, the other to compare the differences in means between these two samples on the BSRI feminine dimension. The other two t-tests were computed to compare the differences in means between female-advised and male-advised ratings of the advisor on the BSRI dimensions of masculinity and femininity. Six correlated t-tests were computed. One was computed to compare male-advised BSRI masculinity and femininity scores; another to compare female-advised BSRI masculinity and femininity scores. Two correlated t-tests were computed to compare the differences in means between the participant's ratings for their advisor's masculinity and femininity scores. Two correlated t-tests were computed to compare the differences between the participant's self-ratings and that of their advisors on each BSRI dimension.

Four 2 x 2 ANOVA's were computed using participant's masculinity or femininity BSRI scores as the dependent variable, with sex of advisor and maternal employment history as the factors. An additional two ANOVA's were computed using participant's advisors ratings on each dimension of the BSRI scales as the dependent variables, with the same two factors mentioned above.

Analysis of the SME:

Parts I through III were content analyzed. All questions on these sections were coded twice: first for a yes/no component, and second for the elaboration(s) of the preceding dichotomous answer. Independent sample chi square analyses were computed for the dichotomous components. Protocols were reviewed for recurrent themes expressed by participants. The protocols were coded according to these themes. Frequency distributions were tabulated by sex of the participant's advisor. Participant's were allowed to report multiple responses per question. Each response was later coded and included in the frequency distribution. There usually were more responses to a question then there were participants. Responses reported by approximately 10% of the participants were summarized in the results section. Percentages reported were the percent of cases, not the percent of responses. Therefore, the sum of the percentages would exceed 100.

In part II, questions 1,3,4,and 5 were coded, in part, based upon the mentoring components previously identified by Schockett & Haring-Hidore (1985). According to these authors, factor analysis supported 2 mentoring functions: psychosocial and vocational. Each of these functions had 4 components. The components of the psychosocial functions were role modeling, encouraging, counseling, and transitional figure. The components of the vocational functions were educating, consulting/coaching, sponsoring,

and protecting. Each of these eight terms was defined in their article. Additionally, participant's expressed themes unrelated to these components in their self-reports. These expressed themes were added to above mentioned coding scheme.

An independent rater was trained in content-analysis. She was presented with the themes and the codes derived by the investigator for the open-ended questions on the SME. A 93.8% inter-rater reliability was computed for these three sections.

On Part IV of the SME participant's could rate up to four mentors. Not Applicable was scored as a 6 for each item. Four participants scored all 30 items as NA. These participants were eliminated from the subsequent analyses of this section.

Part of the aim of this investigation was to create a database of cross-sex mentoring experiences, from the point of view of the male protege. Certain questions from Parts I to III had limited utility for this present investigation. These questions were coded and added to the database, but will not be reported in the results sections, as they did not apply to the hypotheses. Three questions from Part I were not summarized. These questions were: (7)"Does your advisor consider you to be important to his/her career? Why? (10) Does your research project overlap closely with your advisors? Explain. (12) How many hours per week do you spend

with your advisor." Question 12, in retrospect, was confounded. Students from laboratory sciences reported spending 8-40 hours in the laboratory working alongside their advisors each week, while students outside of the laboratory sciences reported spending 0-2 hours per week with their advisors. Students in laboratory sciences were not necessarily being advised by their advisors during these hours in the laboratory.

Question 10 in Part II was also eliminated from the analysis. This questions asked "About how long have you been involved in this mentor relationship?" Participants who were nearer to their doctoral defense usually reported relationships of a longer duration than participants newly elevated to candidacy. No data had been collected to discriminate at what stages toward completion candidates were at when surveyed.

Additionally, several questions from Parts I-III of the SME were coded, though they were not directly related to the hypotheses. These questions were: "Why is your advisor important to your career?", " How would you define mentor?" "What are the advantages of having a mentor?", "What are the disadvantages of having a mentor?", and "What do you expect from your mentor after you graduate?" This was done with the purpose of having such information in a database. This information is presented in Appendix 2 in tabular form.

On part IV of the SME, the scores of each mentor rated (A,B, C, and D) were separately summed. Question 10 was the single negatively worded item. Coding was reversed so that the interpretation of this item would be consonant with the interpretation of the remainder of the scale. Thus, the lower the number, the more favorably perceived the mentor was by the individual.

Six items on Part IV were logically related to networking mentoring. These items were: (1) "My mentors involved their colleagues in my research." (2) "My mentors have introduced me to their colleagues. " (9) "My mentors and I have an interdependent relationship." (10) "My mentors are isolated from their colleagues". (23) My mentors share information with me." (25) "My mentors make me as independent as possible."

Three items on Part IV were logically related to grooming mentoring. These items were: (4) "My mentors have reputations in the field." (6) "I have an intense relationship with my mentors." (11) My mentors are like fathers/mothers to me."

On part IV of the SME, two-tailed pooled variance t-tests of significance were computed to compare the means of female-mentored males and male-mentored males.

Two analysis of variances were computed for the identical factors as mentioned previously for the AWS and the BSRI.

Procedure:

Registration data was obtained from the registrar of an urban commuter graduate school. Doctoral candidates were identified from the registrar's listing. However, the registrar's listing could not identify the most recent candidates. Student's at this school fulfilled the requirements necessary for their elevation to candidacy upon filing a topic proposal with their programs. Program secretaries were asked to provide the investigator with an updated list of candidates. Secretaries were not informed that the investigation would only use male candidates. All programs, with the exception of Biomedical Sciences, complied with the investigator's request for updated student information.

Male dissertation candidates were initially contacted by telephone. Telephone recruitment was attempted over a two month period between April 1989 and June 1989. On weekends, telephone recruitment was attempted between the hours of 11 a.m. through 2 p.m. On weeknights, telephone recruitment was attempted between the hours of 7 p.m. through 10:30 p.m. During the recruitment phase, certain students could never be contacted during these hours,as they were not at home, their phones had been disconnected, they were out of the metropolitan area, or the investigator failed to obtain the participant's most recent telephone

number.

When telephone contact was established, students were informed that the investigator, a dissertation candidate in psychology, had obtained their telephone number from their doctoral program. Students were asked to participate in her dissertation study on advisory experiences and mentoring relationships. The investigator neither mentioned at that contact with the student that sex of the advisor was an independent variable or that only male students were being recruited for the study. Students were informed that the study involved responding to questionnaires and scales pertaining to their perceptions of and experiences with their graduate school advisors. They were informed that the study would take about 60 minutes and that their responses would be held in strict confidence by the investigator. They were informed that they would be compensated $10 an hour for participation.

The researcher attempted to collect data with as much dispatch and as little expense as possible. If this 14 page open-ended protocol was sent as a mail survey, postage expenses would reduce the funds available to offer subjects any compensation for returning completed protocols, potentially decreasing participant representativeness. Furthermore, most dissertation candidates stated in the telephone contact they were already inundated with their dissertation work and their outside employment. If an

anonymous, stamped, self addressed survey was sent to all eligible candidates, potential participants might procrastinate in responding to a lengthy,time consuming 14 page survey sent by a stranger, who in most cases was not in the student's discipline. Finally, the survey could not be anonymously conducted as dependent upon the results of this study, the investigator planned to conduct a follow up with a selected number of participants.

The most expedient manner of data collection was to treat students as professionals whose time was valued and to arrange individual appointments with the students to complete the protocols and to compensate them for their effort. One of the major problems in arranging appointments was the majority of students did not want to come to the university's graduate campus. Some students had laboratories or offices at campus colleges, and traveling to the graduate campus represented an inconvenience them. Other students did not routinely use the graduate campus's facilities and traveling to the school also represented an inconvenience to them. The environment that the student completed the survey in was viewed as irrelevant to the study's validity. Thus students were permitted to chose where they would complete the survey. Conditions were thus not uniform. Students completed the protocol in their offices, their laboratories, their homes, and in coffee shops.

When the investigator and the participant met, the investigator had the participant sign informed consent.The questionnaire was administered to the participant. The participant was told that the protocol was self-explanatory. If the participant asked questions, the investigator responded to the questions by telling the participant to "do the best he could", or, "whatever he felt it meant would be good enough" or, finally "I can answer any questions you have in a more direct and complete fashion after you finish the survey". After completion of the protocol, the investigator reviewed it to ensure that all items had responses and that scales were correctly completed. After this act the participant's questions were answered, full disclosure as to the purposes of the research offered, and compensation paid. Nineteen of the participants refused the fee. Fee refusers were evenly divided between males with male advisers and males with female advisers. Fee refusers usually stated they empathized with the investigator in that they also did not have access to a subject pool. After the debriefing, participants were requested not to talk about the study to their colleagues, as this might affect the validity of the study.

Participants

Male doctoral candidates were recruited from eight doctoral programs at an urban commuter graduate school. The participants spanned a range of stages toward completion of

their doctorate. Some students had filed a topic proposal for a dissertation (the minimum required for elevation to candidacy at this school), while other students were preparing for their oral dissertation defense. The candidate's progress toward their defense was not hypothesized to affect their responses to the survey, and no demographic data was collected on this aspect of the candidate's career.

The programs were selected based upon their percentage of female doctoral faculty (randomly selected as 15%) so that males had the opportunity to select a female advisor and were likely to have been exposed to a variety of professional female models. Eight programs fulfilled these criteria. Of these eight programs, three were in the social sciences and five were in the natural sciences. These eight programs constituted study areas classified by Hite(1985) as traditionally feminine or traditionally androgynous areas of study. At this graduate school,no traditionally male study area had sufficient female faculty in order to qualify for this research. For example, in the traditional male areas of chemistry, engineering, math, and physics (Hite, 1985),the percentage of female faculty ranged from 0 to 7%.

The traditionally feminine study areas which met the inclusion criteria were: psychology, sociology, political science, philosophy. The androgynous study areas which met the inclusion criteria were: biomedical science, biology,

and biochemistry. anthropology, to the extent that it was a social science, would probably constitute a traditionally feminine study area by the Hite (1985) criteria.

Table 1 presents the eight programs, the number and percentage of female faculty, and the number and percentage of male doctoral candidates, by sex of their advisor. This table was based upon registration data and program rosters. (See Table 1)

Of the 50 eligible males with female advisors, 41 participated in the study (82%). Five could not be contacted (10%). Four refused (8%).

There was a much lower participation rate amongst the 109 males with male advisors, as 45 participated (41.3%), 41 could not be contacted (37.6%) and 23 (21.1) refused.

All participants were white and English speaking. Student's who refused usually stated that a lack of available time prevented their participation in the study.

Of the 86 participants, 85 (98.8%) had program advisors at the time that they were studied.

Student Information:

Participants ranged in age from 24 to 62 years. The mean age of female-advised males was 34.81 years (SD = 6.68). The mean age of the male-advised males was 34.82 years (SD =7.69). Overall, 56 (65.1%) of the participants had published papers. Of these 56, 24 (27.9%) were female-advised males and 32 (37.2%) were male-advised males. An

independent samples 3 x 2 chi square analysis was performed. There were no significant differences in age between groups. $\chi^2(2, N = 86) = 2.3, p > .05$. Additionally, of participants who had published, 25 (29.1%) of the participants had published with their mentors and of these, 10 (11.6%) were female-advised males and 15 (17.4%) were male-advised males. An independent samples 3 x 2 chi square analysis was performed. There were no significant differences in publications between groups. $\chi^2(2, N = 86) = 1.1, p > .05$. Fifty-eight (67.4%) of the participants had presented papers. Of these 58, 28 (32.6%) were female-advised males and 30 (34.9%) were male-advised males. An independent samples 2 x 2 chi square analysis was performed. There were no significant differences in presentations between groups. $\chi^2(1, N = 86) = .03, p > .05$

The mean number of years that participants, regardless of the sex of their advisor, had studied in their programs was 6.26 years (SD=2.27). The mean number of years that female-advised males had studied in their programs was 5.93 years (SD =1.89) and the mean number of years that male-advised males had studied in their programs was 6.56 years (SD=2.55). A two-tailed pooled variance t-test of the means was conducted and failed to reach significance. (t (84)=1.3, p>.05).

Regardless of their advisor's sex, participants usually reported that their previous experiences with their advisors

was limited to the classroom. Fifty-one (59.3%) of the participants reported their previous experiences with their current advisors had consisted of enrolling in courses staffed by their advisor. Fourteen (16.3%) of the participants reported informal previous interactions with their advisor. Table 2 presents the participants' reports about their previous experiences with their current advisor, by the sex of their advisor. (See Table 2).

Regardless of their advisor's sex, participants usually reported their advisory relationships began in the classroom. Forty-one (47.7%) of participants reported that their relationship with their present advisor began in the classes that had been staffed by their advisor. Twenty-nine (33.7%) reported that the advisory relationship began with the advisor being supportive of the student's work. Table 3 presents participants' reports of how the advisory relationship was initiated, by sex of their advisor. (See Table 3).

Regardless of their advisor's sex, participants usually report they aspired to academic or research careers. Twenty-four (27.9%) of the participants reported they planned to conduct research. Twenty-three (26.7%) of the participants reported they planned to both teach and conduct research, and 22 (25.6%) of the participants reported they planned to teach. Table 4 presents participants most frequently reported future career aspirations (See Table 4).

Chapter 5: Results

Hypothesis 1: Males mentored by males and males mentored by females will report different mentoring experiences. Specifically,

1(a) female-advised participants will be less likely than male-advised participants to report that the sex of the mentor affected the development of their advisory relationship.

1(b) female-advised males will be more likely than male-advised males to report reexamining their views about female and male competence.

1(c) female-advised males will be more likely than male-advised males to report mentors provided psychosocial functions and,

1(d) female-advised males will be more likely than male-advised males to articulate special problems that have arisen in their advisory relationship specifically due to the sex of their advisor.

Hypotheses 1a, 1b, 1c, and 1d were rejected. Evidence which tested the hypotheses were items derived from Parts 1, 11, and 111 of the Survey of Mentoring Experiences (SME). Questions in Part I referred to advisory relationships, while questions in Part II referred to mentoring relationships, and questions in Part III (with the exception of the final question) asked the candidate to disclose socio-demographic information. Statements derived from Parts

I through III, and offered as support for the rejection of the hypothesis will use the label: male-advised or female-advised participants.

To test this hypothesis, several questions were asked about a mentor's sex as it might have affected the mentoring relationship. These questions included: "Do you believe the sex of your mentor was an important characteristic in either the development or the success of your relationship?", "Are there any special problems that have arisen in your mentor relationship specifically due to the sex of your mentor?" "Because of your mentor, have you reexamined your views about women's competencies? About men's competencies?

Additionally, parts I-III of the SME yielded valuable information about participants' thought processes on advisory and mentoring relationships in specific and their graduate education in general. The depth and richness of their reports may neither be overlooked nor adequately coded. Therefore, some of their reports will be quoted in the results section where relevant.

Advisory Selection Process:

Prior to reporting evidence for rejecting the first hypothesis, it must be determined whether participants chose their advisor, or had been assigned to the advisor by their program. If the majority of participants reported a lack of control over advisor selection, the survey would have little validity as a comparison tool of the criteria

cited by male graduate students in selecting a dissertation advisor. A 2 x 2 chi square analysis was performed investigating whether the frequency of reports differed by sex of the advisor. There were no differences between groups. χ^2 (1, N = 86)= .3, p > .05.

Another 2 x 2 chi square analysis was performed investigating whether participants' reports of faculty choice in advisor selection differed by the sex of the advisor. Twice as many female-advised males reported having perceived other faculty members as possible advisors than did not. Twice as many male-advised males reported not having perceived other faculty members as possible advisors than did. χ^2 (1, N=86) =9.08, p <.005. Table 5 presents the chi square table for participants' reports on the presence of other faculty members to select as their advisor, by sex of the advisor. (See Table 5).

When asked what reasons supported their reports of having other faculty members as possible advisors, 19 (22.1%) participants reported they shared the research interests of their faculty, and 11 (12.8%) reported other faculty members had expertise. Table 6 presents the distributions for the most frequently reported reasons, by sex of advisor. (See Table 6).

Shared research interests and expertise were frequently reported by participants as important advisory criteria. To elaborate upon the emphasis placed by

participants upon these mutual research interests, relevant anecdotes from their protocols will be quoted.

One male-advised male in anthropology reported:"I came to [the graduate school] to study with him." Another male-advised male in biomedical sciences reported:"I had considered others..because they seemed like nice people and... appeared to be good scientists." A female-advised male in psychology reported:"Yes-they had experience in same ...area as my advisor". A male-advised male in psychology reported: "Yes,...others were working or had worked in my area of interest. A female-advised male in anthropology reported:"Other professors had relevant expertise and I got along well with them, but I originally came to [school name] to work with my advisor. (I found he[sic] book fascinating)." Collateral support that faculty research interests and expertise were important to participants was found even when participants reported they had limited choices among faculty. Seventeen (19.8%) participants reported they could have another faculty member was available, but they remained with their current advisor as he/she was their best choice. Ten participants (11.6%) reported another faculty was available, but they were satisfied with their current advisor. For example, a male-advised male in sociology reported:"Professor [name] was clearly....the expert on my topic."

However, this was not to conclude that participants who

did not report the presence of other faculty members who might have been their advisor were satisfied with their current advisory relationships. Twelve (14.0%) participants reported they did not share the research interests of the other faculty. Ten (11.6%) reported other faculty had negative personality traits that had influenced the participant against selecting different advisors. For example, a male-advised male in psychology reported:"Out of desperation-yes. But they're a pretty unapproachable bunch...none of them seem able to have a spontaneous conversation." A female-advised male in psychology reported:"The [others] did not have the expertise...[or were] overextended and therefore could not provide the time and guidance that I desired."

Further support that choice of advisor was usually based upon shared research interests or upon faculty expertise was obtained from an independent samples 3 x 2 chi square analysis. This was performed to investigate whether the frequency of participants' reports of shared research interests with their advisors differed by sex of advisor. χ^2 $(2, N = 86) = 1.8, p > .05$.

When asked to describe the benefits of remaining in this advisory relationship, 39 (45.3%) participants reported their advisors supported or counseled them. Thirty-five (40.7%) reported benefitting from their advisor's expertise. Table 7 presents the frequency distribution for

participants' reports of the benefits derived to them by remaining with their current advisor. (See Table 7).

A male-advised male in anthropology reported: "The personal satisfaction of doing research with him and friendship." Another male-advised male in this field reported: "I appreciate that there is a personal dimension." A female-advised male in psychology reported:"...good advice.. direction,....new or related areas to explore...supportive". A female-advised male in political science reported:"I'd say we are friends...also...her advice is always helpful and clarifies problems."

Gender Attitudes:

Participants were most likely to report that their mentor's sex was not an important characteristics in the development or success of their relationship. Most participants reported that positive personality traits and the expertise of their advisor, along with mutual research interests, were influential criteria in the advisory selection process. Twenty-one (36.8%) participants explicitly reported sex was not a factor in their decision making process. If sex bias influenced advisory selection, it may have favored the selection of female advisors. Ten (17.5%) participants reported that females were better mentors than were males. Table 8 presents the frequency distribution for participants' reports of the characteristics that were important in the development and

success of their mentoring relationship. (See Table 8).

In response to the specific questions about the sex of their mentors, participants' self-reports indicated that sex of the mentor was not an important consideration in the development or success or the relationship. An independent samples 4 x 2 chi square analysis was performed to investigate the frequency of participants' reports to this variable by sex of advisor. χ^2 (3, N = 86)= 8.88, p <.05. However, the expected frequencies differed from the observed frequencies by less than 5. SPSS-X will only perform a Fisher's exact test on a 2x2 contingency table. This question was recoded. Unsure was recoded as a yes, not applicable as a no. When an independent sample 2 x 2 chi square was performed for the recoded question, the result was not significant. χ^2 (1, N = 86) =1.5, p >.05.

Some relevant reports which supported the rejection of the first hypothesis were found in the protocols. A male-advised male in psychology reported:"No, what's the difference." Another male-advised male in psychology reported:"At the time I selected my mentor, there were no senior faculty who were not male." A third reported:"....personal style, intellectual competency, not gender..." A female-advised male in psychology reported: "My only stipulation...the person offer me the time and guidance that I request and hold a degree of expertise in that area."

Attitudinal Changes:

To test Part b of the first hypothesis, an independent sample 3 x 2 chi square analysis was performed on participants' reports of any re-examination of their pre-existing attitudes of female or male competency by advisor's sex. There were no significant differences between groups. (Female competency: χ^2 (2, N = 86) = 3.6, p >.05. Male competency: χ^2 (2, N = 86) =4.6, p >.05.

Mentor Functions:

To test Part c of the first hypothesis, questions were asked that might demonstrate sex of the advisor might have influenced the participant's expectations of the relationship. For example, would female-advised males be more likely to report different features expected from the advisory relationship than would male-advised males? However, when asked what functions they thought an advisor served, 47 (54.75) participants regardless of their advisor's sex, reported the advisor structured or focused the research. Table 9 presents the frequency distribution for participants' reports to the question: "What functions do you think this person [advisor] serves for you". (See Table 9).

To illustrate how participants reported similar advisory functions, regardless of the sex of their advisor, several relevant anecdotes from the protocols will be quoted. A male-advised male in biochemistry reported:

"...guide, someone I can lean on to gain the confidence needed to do this project." A male-advised male in sociology reported: "Clarifies the research focus and helpful in dealing with other committee members and ... faculty." A female-advised male in psychology reported:"A guide through the horrific process of dissertation." Another female-advised male in this program reported:"...a sounding board an audience...making me be specific...incredibly supportive and concerned and aware of me and my needs. She is very much a friend and colleague."

The mentor questions were an additional set of items which attempted to find gender differences in participants' self-reports. Would there be any differences between male and female-advised participants in their willingness to classify their advisor as their mentor? When asked if their dissertation advisor was also their mentor, 49 (57%) participants reported "yes". Another 14 (16.3%) reported that their advisor was a mentor in some respects (total:73%). A 4 x 2 chi square analysis was performed to investigate the frequency of equating mentor with advisor by advisor's sex. χ^2 (3, N = 86) = 2.9, p >.05. Fourteen (16.3) participants who did not consider their advisor a mentor reported they had another mentor.

Mentors were typically found in graduate school: 59.3% knew their mentors from the academic milieu, specifically, from their current department, an undergraduate, or previous

graduate school. Six participants (7.6%) reported they had peer mentors. Eight participants (11.2%) reported they had mentors in their workplace, and four (5.0%) reported they had symbolic mentors (historical or literary figures).

Secondly, would these proteges report different reasons for classifying their advisor as their mentor, based on the sex of their advisor. When asked why the individuals specified were mentors, 16 (31.4%) of the 51 mentored participants reported their mentor's expertise as their reason for classifying their advisor as a mentor. (This question was coded according to categories listed by Schockett & Haring-Hidore, 1985). Table 10 presents the frequency distribution for participants' reports as to why they considered their advisor to also be their mentor. (See Table 10).

Another question which tested Part c of the first hypothesis was: "Is a mentor like a parent?" Most participants reported a mentor as an individual who was responsible for the protege's professional training. An independent sample 3 x 2 chi square analysis was performed to investigate the frequency of participants' reports on this variable by advisor's sex. χ^2 (2, N = 86) = 1.4, p >.05. When asked for reasons for the perceived dissimilarity, thirty (34.9%) participants reported the professional nature of the relationship as the distinction

between parents and mentors. Table 11 presents the frequency distribution to participants' reported dissimilarities between mentors and parents. (See Table 11).

A male-advised male in biomedical sciences reported that a mentor was not like a parent, because:"a mentor is not there to wipe your nose. He(she) should be a human being and treat others like human beings:(1)honestly (2) fairly (3) responsibly (4)adult-like (5) respectfully." Another male-advised male in anthropology reported:"Parents may be social role models, but (for me) not professional role models." A female-advised male in biochemistry reported: "I wouldn't go to my mentor about personal problems, only science ones." A female-advised male in psychology reported: "...mentor/student relationship more involved with professional growth..mentor not responsible for emotional needs."

Special Problems Unique to Female/Male Advisory Dyads:

A question used to test Part d of the first hypothesis was: "Are there any special problems that have arisen in your mentor relationship specifically due to the sex of your mentor?" An independent samples 3 x 2 chi square analysis was performed to investigate the frequency of participants' reports by advisor's sex. χ^2 (2, N = 86) = 1.7, p >.05.

Hypothesis 2: Female-advised male graduate students will rate their relationship with their female advisors differently than will male-advised male graduate students. Specifically,

2(a) female-advised males will rate their advisors as more likely to use networking techniques than will the male-advised males.

2(b) male-advised males will rate their advisors as more likely to use grooming techniques than will the female-advised males.

Hypothesis 2 was partially supported. Female-advised males rated their advisors differently than did male-advised males. Female-advised males were more likely than male-advised males to rate their advisors as more likely to utilize networking techniques with them. However, male-advised males were not more likely than female-advised males to rate their advisors as more likely to use grooming techniques with them. Furthermore, female-advised males were more likely than male-advised males to rate their advisors as more likely to use grooming techniques. Evidence which tested the second hypothesis was derived from an analysis of Part IV of the SME.

Of the 86 participants, 82 rated at least one mentor. Four participants did not consider themselves to have a mentor and reported NA for each item on the SME. These 4

participants were not included in the subsequent analysis of data for this hypothesis. Of the 82 mentored participants, 39 rated a female as their primary mentor, 43 rated a male as their primary mentor. Most participants probably rated their dissertation advisor as Mentor A, as 37 of the female-mentored participants were also female-advised, and 42 of the male-mentored participants were male-advised. Twenty-five (64.1%) of the female-mentored males only rated one mentor on Part IV, as did 25 (58.1%) of the male-mentored males. A 2 x 2 chi square analysis was performed to investigate whether female-mentored males were more likely than male-mentored males to rate multiple mentors. χ^2 (1, N =82) = .3, p >.05. (Since Part IV specifically referred to a "mentor", the label used for this hypothesis will be "male-mentored" or "female-mentored".

The Mentor Scale:

Eighty-two participants rated an individual as Mentor A for Part IV of the SME. Overall,the SME mean score for Mentor A was 68.0. (SD=17.3, range=82.0, median= 68.5) The mean score for the 39 female-mentored males was 63.8 (SD=13.1, range=53.0,median=66) The mean score for 43 male-mentored males was 71.7. (SD=19.8, range 82.0, median=74.0) A two tailed pooled variance t-test of the means was conducted and reached significance. (t (80) = -2.11, p <.05).

Thirty-six participants rated a Mentor B on the SME.

Overall, the mean score for Mentor B was 70.2. (SD=15.6, range=59.0, median=66.0) The mean score for the 25 males who rated a female mentor B was of 67.6 (SD=16.8, range=51.0, median=65.0), and the mean score for the 11 males who rated a male mentor B was 71.3. (SD=15.2. range=59.0, median=68.0). A two tailed pooled variance t-test of the means was conducted and failed to reach significance. (t (34) =-.64, $p > .05$).

Fourteen participants rated a Mentor C on the SME. Of these, four rated C for a female mentor and ten rated C for a male. The mean score for Mentor C was 63.57 (SD=17.5, range=71, median=63.5).

Three participants rated a Mentor D on the SME. Of these, two rated D for a female mentors and one rated D for a male mentor. The mean score for Mentor D was 79.7. (SD=28.3, range 56.0, median=75.0) Table 12 presents the means, medians, standard deviation, and t ratios, by mentor's sex, for Part IV of the SME. (See Table 12).

Two-tailed pooled variance t-tests of the means were conducted to analyze all possible item differences on part IV of the SME. For Mentor A, there were six item means which differed significantly between male-mentored and female-mentored participants. There were three item mean differences which approached significance. Table 13 lists these nine items and their t values. (See Table 13).

Six items were considered as indicative of networking

mentoring, and of these, two item means were significantly different. Three item means approached significance.

Three items were considered as indicative of grooming mentoring, and of these, one item mean was significantly different. All of the item means for Part IV, regardless of whether they related to networking mentoring or grooming mentoring, were lower (more favorable) for female mentors. That is, female-mentored males were more likely than male-mentored males to rate their advisors as more likely to use networking techniques. Female-mentored males also were more likely than male-mentored males to rate their advisors as more likely to use grooming techniques.

A 2 x 2 factorial ANOVA was computed for Part IV of the SME. Participants' scale score was the dependent variable, and the sex of the mentor and maternal employment were the factors. There was a significant main effect for mentor's sex (F (1, 78) = 4.4, p <.05) Female mentors were rated lower (more favorably) on the SME than were male mentors. There were no significant effects for maternal employment (F (1, 78) =.6, p >.05). There were no significant interactions for the two factors (F (1, 78) =.2, p >.05). Table 14 reports the analysis of variance summary table. (See Table 14).

Hypothesis 3 (a): Female-advised male graduate students will have more liberal attitudes towards professional women than will male-advised males.

Hypothesis 3(a) was rejected. Evidence against the hypothesis was derived from the Attitudes toward Women Scale (AWS).

The overall mean AWS score was 84.1 (SD= 9.9, range 42) for all males. For female-advised males, the mean score was 85.6 (SD=9.9, range 39) and for male-advised males, the mean score was 82.8. (SD=9.8, range 42). A two-tailed pooled variance t-test of the means was conducted but did not reach significance. (t (84) =1.3, p >.05).

On the item level, there were three item mean differences which reached significance and which supported the hypothesis. These items were: "Wifely submission is an outworn virtue." (t(84) = 2.09, p < .05) , "Women should be concerned with their duties of childrearing and housetending, rather than with desires for professional and business careers" (t (84) = 2.01, p < .05), and "The modern girl is entitled to the same freedom from regulation and control that is given to the modern boy." (t (84) =1.95, $p \leq$ .05). To prevent an interpretation from being considered a Type I error, a more stringent alpha level was used by employing a statistic called Bonferroni's inequality. The new alpha level was .001, and these three item mean

differences now failed to approach significance and were rejected as a type one error.

A 2 x 2 factorial ANOVA was computed using sex of the advisor and maternal employment as the factors, and score on the AWS as the dependent variable. There were no significant differences between male and female-advised participants on the AWS (F (1,82) = 1.6, p>.05) There were no significant differences on the AWS between participants who had working and non-working mothers. (F (1,82) =.7, p >.05). Finally, there were no significant interactions on the AWS between the two factors (F (1,82) =.01, p >.05).

Hypothesis 3(b): Female-advised males will be more likely than will male-advised males to have previously experienced maternal employment.

Hypothesis 3(b) was rejected. Evidence against the acceptance of the hypothesis was derived from Part III of the SME. Sixty one (70.9%) participants had working mothers. Of these, 30(36.8%) currently had female advisors, while 31(34.9%) had male advisors. There were no significant chi square differences obtained between groups. χ^2 (1, N = 86) =.2, p >.05.

Additional evidence against this hypothesis was derived from four one way ANOVA's computed upon the SME, the BSRI, and the AWS. The factor used was "childhood maternal employment". The dependent variable used was the scale score. The ANOVA's failed to find any significant differences between groups. (On the AWS, F (1,84) =.8, p >.05. On the masculine dimension of the BSRI, F (1, 84) =1.8, p >.05. On the feminine dimension of the BSRI, F (1,84) =.02, p >.05. On the SME, Mentor A, F (1,84) =.1, p >.05.)

Hypothesis 4: Female-advised males will rate themselves and their advisors differently than will male-advised males. Specifically,

4(a) female-advised males will be more likely than will male-advised males to rate themselves and their advisor as androgynous than will male-advised males.

4(b) male-advised males will be more likely than will female-advised males to rate themselves and their advisor as masculine than will female-advised males.

The first part of this hypothesis was not supported. The second part of this hypothesis was supported. Evidence for this hypothesis was derived from the Bem Sex Role Inventory (BSRI),which was rated twice by participants: once to rate themselves, and once to rate their perception of their advisors. Table 15 presents the mean BSRI scores, by sex of advisor. (See Table 15).

A median split was computed. The median score on the participants' masculine score was 5.15 (Bem's median=4.90) The median score on the participants' feminine score was 4.75 (Bem's median =4.95) Median scores for the advisors on these two scales were 5.20 and 4.13 respectively. The median split was the basis of rating the participants as undifferentiated, masculine, feminine, or androgynous. The BSRI manual (Bem, 1978) suggested that either the normative medians provided in the manual could be used, or the

researcher's sample median could be used to classify participants. The normative median scores were obtained using undergraduate students at Stanford University in 1978 while these median scores were obtained used dissertation candidates at a New York City public institution in 1989. The researcher decided that these two samples were non-comparable and so used her own obtained median to classify participants and their advisors. Table 16 presents the classification of participants and advisors, based on the median split. (See Table 16).

A 4 x 2 chi square analysis compared the BSRI classification of participants by the sex of their advisors and no significant differences were found. χ^2 (3, N = 86) =1.1, p >.05. A second 4 x 2 chi square analysis compared the BSRI classification of the participants' advisors by the sex of the advisor and no significant differences were found. χ^2 (3, N = 86) =4.7, p >.05.

Four two-tailed pooled variance t-tests of significance were computed. Two t-tests were computed to compare participants' mean scores on the masculine and the feminine dimensions of the BSRI, by sex of their advisor. Two additional t-tests were computed to compare the participants' mean scores for their advisor on the masculine and feminine dimensions of the BSRI, by sex of the advisor. There were no significant t scores obtained on any of the four dimensions tested. (On the participants' BSRI

masculine dimensions, t (84) =.9, p >.05. On the participants' BSRI feminine means, t (84) =-.7, p >.05. On the advisors' BSRI masculine dimensions, t (84) =-.8, p >.05. On the advisors' BSRI feminine dimensions, t (84) =1.8, p >.05.)

Six correlated t-tests were computed. The BSRI was treated as a repeated measure. One correlated t-test compared the means of female-advised participants on their BSRI masculinity and femininity scores. There was a significant difference between female-advised participants' masculinity and femininity scores. (t (40) =3.8, p <.005) Female-advised males scored higher on the masculine dimensions than on the feminine dimensions of the BSRI. Another correlated t-test was performed to compare the means of male-advised participants on their BSRI masculinity and femininity scores. The difference between these male-advised participants' scale scores approached significance: t (44)=1.97, p <.06). There was a trend for male-advised participants to score higher on the masculine dimensions of the BSRI than on the feminine dimensions.

Another two correlated t-tests examined the relationship between the masculine and feminine dimensions on the BSRI for the participants' advisors. Regardless of advisor's sex, participants rated their advisors significantly higher on the masculine dimensions than on feminine ones. Table 17 presents the results of the

correlated t-tests, for both participants and advisors. (See Table 17).

The final two correlated t-tests compared participants' self-ratings on the BSRI masculine and feminine dimensions with those given to their advisors. Female-advised males' mean masculine score was 5.2, that of their advisors was 5.1. This was not significantly different (t (40) = 1.3, p >.05) Male-advised males' mean masculine score was 5.1, that of their advisors was 5.2. This was not significantly different (t (44) =-1.2, p >.05) Female-advised males' mean feminine score was 4.7, that of their advisors was 4.3. This was a significant difference, suggesting these males rated themselves as more feminine than their advisor. (t (40) =5.4, p <.001) Male-advised males' mean feminine score was 4.8, that of their advisors was 4.0. This was a significant difference, suggesting these males also rated themselves as significantly more feminine than their advisor. (t (44) = 5.3, p <.001).

Four 2 x 2 factorial ANOVA's were computed on the Bem Sex Role Inventory. For all four ANOVA's, advisor's sex and maternal employment were the factors, and scale scores were the dependent variables. Two ANOVA's were computed for the masculine and feminine dimensions of the BSRI completed for the advisor by the participant, two ANOVA's were computed for the masculine and feminine dimensions of the BSRI completed by the participant to rate himself.

None of the ANOVA's computed for the BSRI rated by the participants for their advisors reached significance. There were no main effects or interactions. (For the advisors' feminine score, with maternal employment as the factor, F (1,82) =.01, p >.05, with advisors' sex as the factor, F (1, 82) =3.0, p >.05, for the two way interaction, F (1,82) =.01, p >.05. For the advisors' masculine score, with maternal employment as the factor, F (1,82) =1.6, p >.05. With advisors' sex as the factor, F (1,82) =.55, p >.05. For the two way interaction, F (1,82) =.14, p >.05).

Two 2x2 factorial ANOVA's were computed for the participants' self-ratings on each dimension of the BSRI. There were no main effects or interactions on the feminine scale. (with maternal employment as the factor: F (1, 82) =.01, p >.05. with advisors' sex as the factor, F (1, 82) =.45, p >.05. for the two way interaction, F (1,82) =.12, p >.05). There were no main effects on the masculine scale. (with maternal employment as the factor, F(1, 82) = 3.2, p >.05. with advisors' sex as the factor, F (1,82) =1.0, p >.05). However, there was an interaction between advisors' sex and maternal employment (F (1,82) = 6.3, p <.05). Table 18 presents the analysis of variance summary table. (See Table 18).

To determine the means between which significant differences existed, Tukey's HSD test was used. It was found that male-advised males with working mothers scored

significantly lower on masculinity than any other group, and that male-advised males with non-working mothers scored significantly higher on masculinity than any other group. The Tukey HSD test revealed no other group differences. Table 19 presents the results of the Tukey HSD. (See Table 19).

Chapter 6: Discussion and Suggestions for Further Research

This study found that male and female-advised participants were more similar than they were different on their self-reports of current advisory experiences. Regardless of their advisor's sex, participants were concerned about becoming professionals in such areas as research and teaching.

Although participants' reports on their current advisory experiences did not differ significantly based on the advisor's sex, there was evidence from the Survey of Mentoring Experiences (SME) that faculty sex did influence participants' initial advisory selection procedure. Though participants reported that the sex of faculty members did not influence their selection of a dissertation advisor, the female-advised males reported (by a 2:1 ratio) that they had other faculty to select from as potential advisors, while male-advised males reported (by a 2:1 ratio) that they did not have other faculty from whom they might select. One would expect the males who preferred a male advisor to have a larger range of potential dissertation advisors to select from than the others, as based upon registration data and program rosters provided by the school, male faculty outnumbered female faculty by more than a 4:1 ratio. Even if there was a cadre of males who were so highly gender-role stereotyped that they eliminated female faculty from their

consideration as potential advisors, this alone would not explain this puzzling ratio of male-advised males to female-advised males who reported no choice. Eliminating female faculty from consideration as advisors should still leave a considerable number of male faculty from which participants could select. Furthermore, at the dissertation candidacy stage, identified male-advised males outnumbered identified female-advised males by approximately a 2:1 ratio. To be consonant with the 4:1 male faculty to female faculty ratio, if a pre-existing sex bias had influenced all male students' advisory decisions, one would have expected to have identified a higher ratio of male-advised to female-advised candidates than was found. These ratios suggested that there were some subtle differences between groups which the instruments failed to identify. Further research on the selection criteria utilized in choosing an advisor by male graduate students is warranted to fully understand these findings.

Hypothesis 2 was only partially confirmed. Female-mentored males were significantly more likely to rate their mentors as performing networking functions. However, it was the female-mentored males, and not the male-mentored males, who were significantly more likely to rate their mentors as also performing grooming functions. Overall, female-mentored males rated their mentors lower, that is, more favorably, on a mentoring scale than did male-mentored

males. The interpretation of this finding is uncertain. Female faculty may enact mentoring roles in a manner which was rated as more acceptable to students than did the male faculty in their mentoring roles. Female faculty may have used networking techniques, they may have allowed students more independence, they may have shared more information, they may have allowed a more reciprocal relationship, and they may have provided to the student an enactment of professional expertise in an authoritative manner. Alternatively, the female faculty may have a better repertoire of social skills which they utilized as mentors than the male faculty had and the more favorable ratings of the former may be a reflection of this factor. Further research on different mentoring styles and possible sex-differences is indicated to fully explore the meaning of this finding.

Hypothesis 3 was not supported. There were no differences between groups on attitudes toward professional women or previous experiences of maternal employment. This finding of no differences was congruent with the previously mentioned findings of overall similarity between groups on the gender-neutral items of the SME. For example, on the latter, there were no differences elicited between groups on their reported career aspirations, on the benefits of an advisor, on the advantages or disadvantages of a mentor, or on the willingness to assert that their advisor was also

their mentor.

However, the interpretation of no differences between groups on attitudes towards professional women was confounded to some degree, as one of the instruments utilized may have been inappropriate to assess the independent variables under investigation in this study. The Attitudes towards Women in Society scale (AWS) (Spence & Helmreich, 1972) should be revised for research with non-undergraduate participants. Upon scanning the AWS, many participants remarked to the investigator that the questionnaire must be about chauvinistic or conservative attitudes towards women. Sophisticated, intellectual and older populations may have masked chauvinistic or conservative attitudes towards females in the presence of a female as it would have conveyed a politically incorrect answer. Furthermore, antiquated (if not absurd) language used on the AWS may have influenced the participants' ratings in some manner. For example, one item was worded, "it is ridiculous for a woman to run a locomotive and for a man to darn socks." The items selected from the complete AWS may have been so crudely and awkwardly worded and may have presented issues on such an elementary or offensive fashion, that it may have been insensitive as an instrument to elicit differences in gender-attitudes from intellectual populations. Items which addressed such issues as promotion, tenure, publications, and grants might have

elicited differences in gender-attitudes between these groups. Additionally, some AWS items compounded several distinct attitudes within one statement: participants may agree with one part of the item but disagree with another part and there was no scoring adjustment to resolve this dilemma. For example, in the item "Most women need and want the kind of protection and support that men have traditionally given them," need and want as well as protection and support, conveyed distinct connotations which confused participants and hindered their abilities to make effective rating decisions.

Hypothesis 4 was partially supported. There were no differences between male or female-advised groups on androgyny, masculinity, or femininity, based on a median split of Bem Sex-Role Inventory (BSRI) scores. In addition, there were no differences between male or female advisors on androgyny, masculinity, or femininity, based on the median split of the participant's BSRI ratings for their advisor. A significant finding which emerged from Hypothesis 4 was that regardless of advisor's sex, both male groups rated themselves higher on the BSRI's feminine dimension than they rated their advisor. This finding posed interesting questions on the power dynamics between advisors and their students. Regardless of the advisor's sex or mentoring philosophy, participants rated the advisors as less affiliative or expressive than they did themselves. Further

research which would elaborate upon the relationship between gender traits, the different perspectives brought to the relationship by both the advisor and the student, and the power dynamics within advisory dyads is necessary to fully understand this finding.

A tangential yet potentially interesting finding which emerged from the analysis of the BSRI scale scores was that male-advised males differed significantly from each other on the masculine dimension of the BSRI, dependent upon their having working mothers. Male-advised males who had working mothers scored lowest on the BSRI masculine dimension. Male-advised males who did not have working mothers scored highest on the BSRI masculine dimension. While female-advised males were more homogenous on all variables of interest, male-advised males were not as homogenous. Instead, they were distinguishable on two variables: working mothers, and masculine dimension scores. Thus, the male-advised group may have been in reality two distinct subgroups composed of those with working or non-working mothers. The failure to find significant differences on other variables may be a result of the heterogeneity of the male-advised participant group. Additionally, the maternal employment variable may not have caused the differential masculinity scores. Some intervening variable which was not considered in the design of this study, such as masculine identity or self-esteem, may more plausibly explain this

finding. Further research on adult male relationships is necessary to fully understand this finding.

Although the appropriate statistical procedures were utilized in this study, overall, the major hypotheses were not significantly confirmed. The following factors may have influenced the obtained results: The number of participants was insufficient to allow tests of significance for other variables that might have influenced the mentoring relationship. Such variables might have included participants' ethnicity, parental status, marital status, and previous mentoring experiences.

Another consideration that might have affected the results of this research was the inability to randomly select participants from the complete roster of dissertation candidates. The internal validity and thus the interpretability of these findings was somewhat compromised by the different refusal rates in the male-advised and in the female-advised groups. Those students with negative mentoring experiences may have been overrepresented amongst the refusers, thus skewing the study with students who have positive mentoring experiences. There was a much lower participation rate amongst male-advised males. Approximately 41% of the identified male-advised males participated. In contrast, 82% of the identified female-advised males participated in the study. Additionally, male-advised males were both more difficult to contact

(37.6% could not be contacted) and were more likely to refuse if they had been contacted (21.1% refused) than were female-advised males, among whom only 10% could not be contacted and 8% refused to participate. Thus, the female-advised male group was more fairly represented than was the male-advised group.

Another consideration that might have affected the results of this research was that the mutuality in mentor relationships could not be assessed with this study's unilateral design. Mentor and protege together were responsible for the creation and the duration of the relationship. Proteges were not passive recipients of the mentor's knowledge, indeed, the proteges reported that their mentors benefitted from the actions and abilities of the latter in handling the daily laboratory and research activities. The interdependence between mentors and proteges needs to be studied. For this purpose, one can identify the five highest and lowest scoring female mentor/protege pairs and the five highest and lowest scoring male mentor/protege pairs (based on the scores for Part IV of the SME). Structured interviews may be conducted with both the protege and the mentor,and protocols content analyzed in an attempt to elicit common variables that delineated effective or dysfunctional academic relationships.

Another factor in this study which might have

contributed to the lack of significant findings was the school utilized for this research. This school was an urban, public, commuter school. Unlike its private counterparts, few graduate students received departmental financial support. Unlike its residential counterparts, students and their advisors often resided far apart in different boroughs and in different geographic states. Noe (1988b) reported such factors as time limitations, incompatible work schedules, and physical distance as reasons for protege/mentor lack of interactions. Thus, time and physical distance may have exerted a negative effect upon all mentoring relationships examined in this study. These factors were relevant to the present investigation, for while female mentors were rated more favorably than were male mentors by their proteges on Part IV of the SME, neither sex overall received extremely low ratings, which would have suggested more intense relationships.

Finally, presence of a female investigator and the list of female names on the informed consent form might have influenced the results. Female-advised males might have hesitated to report negative aspects of their advisory relationships in this environment.

Despite these confounds, this study added to the mentoring database. First of all, it collected data in an neglected area of mentoring relationships, where females held valued and desired roles in relationship to these male

participants. In this study, although female-advised males rated their female mentors more favorably than did male-advised males, the former did not differ from the latter on their ratings of their advisors' gender-role traits, or upon their attitudes towards professional women.

Secondly, all participants were matched on the formal stage attained toward completion of the dissertation. Utilization of two groups of advanced graduate students matched participants in such areas as personal commitment to entering the profession, exposure to graduate faculty models, and realistic expectations of professional roles.

Thirdly, the prospective survey design eliminated retrospective confounds of participant memory distortion.

Fourth, potential problems unique to feminine mentoring may have been identified. For example, previous researchers reported that male-mentored female students reported concerns about the potential for sexual exploitation of the relationship. (e.g. Paludi, 1988a). In this research, a few participants reported concerns over the effect their advisor/mentors' maternity leave would have upon their dissertation progress. For example, one female-advised male reported his advisor's pregnancy had influenced her decision to leave his program. Pregnancy, however, was not universally viewed by experienced female-advised participants as having a negative effect upon the mentor-protege relationship. For example, one participant reported

that his advisor's pregnancy had enhanced their relationship by adding a new dimension of mutuality, because his wife had given birth around that time. However, the effect of an advisor's maternity leave upon a student's dissertation progress would not uniquely affect male proteges with female mentors. Female proteges may report similar concerns about their female mentors. Secondly, not all female mentors are in their childbearing years. Finally, even if female mentors are in their childbearing years, they will not necessarily become pregnant.

In addition, this study both supported and challenged Levinson's et al. (1978) suggestions that female-mentored males would find the mentor relationship less intense, that female-mentored males would find that the mentor relationship placed a greater emphasis upon the protege's self reliance, that female-mentored males would have increased access to the mentor's collegial network, and that female-mentored males would have fewer relationship problems than would male-mentored males.

The data from this study did not support the concept of the lessened intensity of female mentorships as on Part IV of the SME, female-advised/mentored males significantly differed from male-advised/mentored males on their mean item scores for "I have an intense relationship with my mentors." It was male-mentored males who rated their mentor relationship as characterized by a lesser intensity than the

female-mentored males.

No scale items specifically used the term "self reliance." However, if independence was a comparable concept, female-advised/mentored males did not significantly differ from male-advised/mentored males on Part IV of the SME on their mean item scores for: "My mentors make me as independent as possible."

Two scale item scores differed significantly between groups and in a manner which suggested female-advised/mentored males had increased access to their mentor's collegial networks than did male-advised/mentored males. These items were: "My mentors have introduced me to their colleagues" and "My mentors involved their colleagues in my research."

The qualitative data obtained from the SME supported the Levinson, et al. (1978) suggestion that mentors should not be overly parental with their proteges. In the present investigation, participants disagreed that a mentor was like a parent, and reported concerns about dependency and a loss of professional self at a stage when they were on the cusp of developing their professional identity. Finally, female-advised/mentored males may have fewer relationship problems with their advisor/mentor, as on Parts I-III of the SME, such males were less likely to report negative definitions of the term "mentor," and were more likely to report having advisory selection options than were male-advised or

mentored males.

Unlike Levinson, et al. (1978) this study found that for these participants, mentoring rarely occurred outside of academic advisory or faculty relationships, as participants were unlikely to report their work supervisors, etc. were also their mentors. This was similar, however, to Swerdlik, et al. (1988) who reported their participant's mentoring experiences occurred in graduate school and not on internships.

The present study suggested when mentors were transitional figures for their proteges, it was not the Levinson, et al. (1978) psychoanalytic definition of the term, but the Schockett & Haring-Hidore (1985) definition of individuals who helped another negotiate the metamorphosis from protege to peer.

In conclusion, the dynamics involved in mentor/protege relationships represent research areas insufficiently addressed in many current investigations. The results of this study supported a lifespan approach to studying mentoring relationships. Mentoring relationships were mutually shaped by both the mentor and the protege. Participant's reported that they benefitted from their advisor's expertise even as their advisor benefitted from their ability to handle the daily research tasks. The functions offered by a mentor changed as both the advisor and the student were transformed by their interactions over

time, and as both the advisor and the student advanced within their professions. Furthermore, congruent with the lifespan approach is a comparative design which would utilize male and female faculty members and their male and female graduate students. Such an approach is essential in understanding if and how female and male experiences as mentors and proteges differ, and if and how female and male experiences as mentors and proteges are similar. For example, since no female students participated in the present study, one cannot conclude that females have different mentoring experiences than males have in graduate school. The male graduate student population reported a diversity of mentoring experiences, which may or may not have differed from those that females would have reported.

In the present study, participants used their advisors as agents of enculturation into their future profession. Participants reported mutual research interests, advisor's occupational attainment, advisor's willingness to make a commitment to the mentoring relationship, and advisor's ability to provide the needed mentoring functions to the student were important factors in the relationship.

Appendix 1: SME

Part I: Please answer the questions below about your current departmental advisor. If you need more space, use the back of these sheets. If you need additional space, the investigator will supply you with additional pages. Thank you for your time.

1. Do you have a departmental advisor? Yes_____ No_____

   a. What sex is your advisor? _____

   b. Around how old do you think your advisor is?

2. Were you assigned this person? Or, did you select this person?

3. Had you approached others to serve as your advisor? What happened?

4. Were there other faculty members whom you might have selected? Why?

5. What previous experiences had you with your advisor? (Classroom teacher, for example)

*6. Describe how your relationship with this person began.

*7. Does your advisor consider you to be important to his/her career? Why?

*8. Do you consider your advisor to be important to your career? Why?

*9. Do you derive any benefits from this relationship? Describe.

10. Does your research project overlap closely with your advisors? Explain.

*Items adapted from Paludi (1988).

11. Do you and your advisor share research interests? Explain.

*12. How many hours per week do you spend with your advisor?

*13. What functions do you think this person serves for you?

Part II. Please respond to the questions below about your current mentoring relationship(s).

1. How would you explain the term Mentor?

2. According to your definition, is your dissertation advisor also a mentor to you?

3. If not, do you consider yourself to have a mentor? Explain, listing reasons, sex of the mentor, and approximate age.

4. Would you say you had several mentors? Explain, listing reasons, sexes, and approximate ages.

5. What advantages are there to having mentor(s)?

6. What disadvantages are there to having mentor(s)?

*7. Do you believe the sex of your mentor was an important characteristic in either the development or the success of your relationship? Explain.

8. What do you expect from your mentor after you graduate?

9. Because of your mentor, have you reexamined your views about women's competencies? About men's competencies?

10. About how long have you been involved in this mentor relationship?

*11. Do you think a mentor is like a parent? Explain.

*12. Are there any special problems that have arisen in your mentor relationship specifically due to the sex of your mentor? Explain.

13. Have you published with your mentors? Which ones? Do you have first or second authorship?

Any other comments you would like to add about the mentor relationships you have or have had?

Part III. Please answer a few questions about yourself and your future career plans.

1. Ultimately, what do you aspire to as your career?

2. What future research plans do you have?

3. Have you published any research? (Yes/No) Presented any research? (Yes/No)

4. How many years have you been a full-time student in your doctoral program?

5. Was your mother employed outside of the home? How old were you when she began to work? What is her occupation?

6. How old are you?

7. What is your nationality and country of origin?

8. What department are you in?

9. How have your future career plans been affected by or shaped by your mentors?

Part IV. Please rate your perceptions of your mentors on the following five point scale, where 1 is always true and 5 is never true. If you have only one mentor, rate only the lines for Mentor A. Please denote in the appropriate space the sex of this mentor. If you have two mentors at this time, rate your experience with Mentor A and Mentor B, and so forth. Please be consistent. The person whom you are thinking of as Mentor A in the first statement should be the person you are thinking of as Mentor A in all subsequent statements, and so on for Mentor B, C, and D. Do not feel obligated to rate 2,3, or 4 mentors if you believe you have only one or two mentors.

(1) Always true (2) Frequently true (3) Sometimes true (4) Infrequently true (5) Never true

Please denote the sex of Mentor: A___B___C___D___

1. My mentors involve their colleagues in my research:

   A___B___C___D___

2. My mentors have introduced me to their colleagues:

   A___B___C___D___

3. My mentors are productive professionals:

   A___B___C___D___

4. My mentors have reputations in the field:

   A___B___C___D___

5. My mentors are respected in the department:

   A___B___C___D___

6. I have an intense relationship with my mentors:

   A___B___C___D___

7. My mentors are good teachers: A___B___C___D___

(1) Always true (2) Frequently true (3) Sometimes true (4) Infrequently true (5) Never true

8. My mentors are research oriented: A___B___C___D___

9. My mentors and I have an interdependent relationship:

   A___B___C___D___

10. My mentors are isolated from their colleagues:

    A___B___C___D___

11. My mentors are like fathers/mothers to me:

    A___B___C___D___

12. My mentors are involved in professional activities:

    A___B___C___D___

13. My mentors demonstrates necessary social skills to me:

    A___B___C___D___

14. My mentors encourage my research:

    A___B___C___D___

15. My mentors praise my research: A___B___C___D___

16. My mentors are skilled experts: A___B___C___D___

17. My mentors sponsor me in our field:

    A___B___C___D___

18. My mentors pass along to me a larger philosophical vision: A___B___C___D___

19. My mentors are nurturant to me: A___B___C___D___

(1) Always true (2) Frequently true (3) Sometimes true (4) Infrequently true (5) Never true

20. My mentors are my professional role models:

    A___B___C___D___

21. My mentors are warm toward me: A___B___C___D___

22. I consider my mentors to be important people in my professional development: A___B___C___D___

23. My mentors share information with me:

    A___B___C___D___

24. I am important to my mentors work: A___B___C___D___

25. My mentors make me as independent as possible:

    A___B___C___D___

26. My mentors counsel me: A___B___C___D___

27. My mentors protect me: A___B___C___D___

28. My mentors are involved with their families:

    A___B___C___D___

29. My mentors are loyal to me: A___B___C___D___

30. Working with my mentors has shown me how professionals can integrate their work and home roles effectively:

    A___B___C___D___

Table 1

Number and percentage of female faculty and number and percentage of male doctoral candidates identified.

Program	Female Faculty*		Male Doctoral Candidates Identified**				
			total	Male-Advised		Female-Advised	
	n=133	%	n=159	n=109	%	n=50	%
Anthropology	17	(39%)	16	11	(68.8)	5	(31.3)
Psychology	41	(25%)	55	29	(52.7)	26	(47.3)
Political Science	7	(15%)	9	4	(44.4)	5	(55.6)
Sociology	13	(20%)	17	17	(100.0)	0	
Philosophy	5	(16%)	9	6	(66.7)	3	(33.3)
Biomedical Sci.	23	(21%)	20	18	(90.0)	2	(10.0)
Biology	22	(17%)	23	17	(73.9)	6	(26.1)
Biochemistry	5	(22%)	10	7	(70.0)	3	(30.0)

*Based on CUNY statistics

**Based on registration information and departmental rosters

Table 2

Participants' self-reports about previous experiences with their current advisor, by the sex of their advisor.

Response	Total N=86	%	Female-Advised n=41	%	Male-Advised n=45	%
Classes	51	(59.3)	25	(61.0)	26	(57.8)
Informal interaction	14	(16.3)	6	(14.6)	8	(17.8)
No previous experience reported	13	(15.1)	7	(17.1)	6	(13.3)
Student was familiar with advisor's works	11	(12.8)	3	(7.3)	8	(17.8)
Student was advisor's RA or TA	7	(8.1)	4	(9.8)	3	(6.7)
Knew advisor prior to entering graduate school	7	(8.1)	4	(9.8)	3	(6.7)

Note. All totals represent percent of cases

Note. Total number of responses = 133

Table 3

Participants' self-reports, on the initiation of their advisory relationship, by the sex of their advisor.

Response	Total N=86	%	Female-Advised n=41	%	Male-Advised n=45	%
In class	41	(47.7)	20	(48.8)	21	(46.7)
Adv. was supportive of the student's work	29	(33.7)	13	(31.7)	16	(35.6)
Informal interactions	19	(22.1)	10	(24.4)	9	(20.0)
Student approached advisor to do research	16	(18.6)	7	(17.1)	9	(20.0)
Student was referred by another faculty member to current advisor	11	(12.8)	5	(12.2)	6	(13.3)

Table 4

Participants' self-reports of future career aspirations, by sex of their advisor.

Response	Total N=86	%	Female-Advised n=41	%	Male-Advised n=45	%
Conduct research	24	(27.9)	13	(31.7)	11	(24.4)
Teach and conduct research	23	(26.7)	10	(24.4)	13	(28.9)
Teach	22	(25.6)	9	(22.0)	13	(28.9)
Clinician	9	(10.5)	6	(14.6)	3	(6.7)
Consultant	9	(10.5)	3	(7.3)	6	(13.3)
Administration	5	(5.8)	0		5	(11.1)

Note: Total number of responses = 110

Table 5

A 2 x 2 chi square table of participants' self-reports for the presence of other faculty to select as a potential advisor, by sex of current advisor.

	Female-Advised	Male-Advised
Yes	27 (20.0)*	15 (22.0)
No	14 (21.0)	30 (23.0)

*Numbers enclosed in parenthesis are expected values.

Note: χ^2 (1, N = 86) = 9.08, p < .005.

Table 6

Participants' self-reports of why they could or could not have selected other faculty advisors, by sex of their current advisor.

	Total		Female-Advised		Male-Advised	
Could have selected	N=86	%	n=41	%	n=45	
Shared research interests	19	(22.1)	9	(22.0)	10	(22.0)
Faculty had expertise	11	(12.8)	8	(19.5)	3	(6.7)
Faculty had compatible personality	2	(2.3)	1	(2.4)	1	(2.2)
Could have selected, but chose to remain with advisor:						
Current advisor was their best choice	17	(19.8)	6	(14.6)	11	(24.4)

(table continues)

Could have selected but remained	Total N=86	%	Female-Advised n=41	%	Male-Advised n=45	%
Student did not share the research interest of other available faculty	12	(14.0)	6	(14.6)	6	(13.3)
Negative personality traits of other available faculty	10	(11.6)	4	(9.8)	6	(13.3)
Satisfied with the current advisor	10	(11.6)	4	(9.8)	6	(13.3)
Current advisor shares research interests	9	(11.6)	6	(14.6)	3	(6.7)
Current advisor has compatible personality	7	(8.1)	5	(12.2)	2	(4.4)

Note: Total number of responses = 128

Table 7

Participants' self-reports of the benefits derived to them by remaining with their current advisor, by sex of the advisor.

Response	Total N=86	%	Female-Advised n=41	%	Male-Advised n=45	%
Support/counsel	39	(45.3)	18	(43.9)	21	(46.7)
Expertise	35	(40.7)	22	(53.7)	13	(28.9)
Personal satisfaction	21	(24.4)	12	(29.3)	9	(20.0)
Intellectual stimulation	20	(23.3)	13	(31.7)	7	(15.6)
Collegiality	15	(17.4)	9	(22.0)	6	(13.3)
Referrals	14	(16.3)	5	(12.2)	9	(20.0)
Assistance to complete Ph.D	8	(9.3)	4	(9.8)	4	(8.9)
Assistance with political hurdles	7	(8.1)	4	(9.8)	4	(8.9)

Note: Total number of responses=195

Table 8

Participants' self-reports for was the sex of your mentor an important characteristic in either the development or success of your relationship, by sex of the advisor.

Response	Total N=57	%	Female-Advised n=30	%	Male-Advised n=27	%
Sex is not a factor in the selection of the mentor	21	(36.8)	10	(33.3)	11	(40.7)
Expertise is more important to the mentor decision	12	(21.1)	8	(26.7)	4	(14.8)
Personality is a factor in the selection of the mentor	11	(19.3)	7	(23.3)	4	(14.8)
Student reports females are better mentors	10	(17.5)	5	(16.7)	5	(18.5)
Student prefers to work with females, as the relationship is better	8	(14.0)	6	(20.0)	2	(7.4)
Student reports previous mentors were females	5	(8.8)	1	(3.3)	4	(14.8)

Note: Twenty nine students did not elaborate beyond a yes or a no for this question.

Note: Total number of responses=70

Table 9

Participants' self-reports describing the functions an advisor serves, by sex of the advisor.

Response	Total N=86	%	Female-Advised n=41	%	Male-Advised n=45	%
Structured/focused research	47	(54.7)	29	(70.7)	18	(40.0)
Guidance	24	(27.9)	15	(36.6)	9	(20.0)
Professional advise	22	(25.6)	11	(26.8)	11	(24.4)
Supports/Encourages	19	(22.1)	8	(19.5)	11	(24.4)
Editor	18	(20.9)	10	(24.4)	8	(17.8)
Decides when the dissertation is complete	14	(16.3)	6	(14.6)	8	(17.8)
Helps navigate political hurdles in the department	14	(16.3)	6	(14.6)	8	(17.8)
Literature help/resources	13	(15.1)	8	(19.5)	5	(11.1)
Mentor	12	(14.0)	5	(12.2)	7	(15.6)
Motivator	8	(9.3)	5	(12.2)	3	(6.7)
Brings student into profession	7	(8.1)	3	(7.3)	4	(8.9)

Note: Total number of responses = 237.

Table 10

Participants' self-reports of why they consider their advisor to also be their mentor, by sex of the advisor

Response	Total N=51	%	Female-Advised n=24	%	Male-Advised n=27	%
Expertise/Experience#	16	(31.4)	8	(33.3)	8	(29.6)
Consulting/coaching*	8	(15.7)	4	(16.7)	4	(14.8)
Inspiration/Stimulation#	7	(13.7)	4	(16.7)	3	(11.1)
Educating*	6	(11.8)	2	(8.3)	4	(14.8)
Respect#	6	(11.8)	2	(8.3)	4	(14.8)

* This question was coded according to the Schockett & Haring-Hidore's (1985) dimensions of a mentor categories.

This question was coded according to student reports which did not meet the previous Schockett & Haring-Hidore's(1985) of a mentor categories.

Note: Total number of responses=61.

Note: Thirty-three participants did not elaborate beyond a yes/no response.

Table 11

Participants' self-reports as to how a mentor relationship is dissimilar to a parental relationship.

Category	Total N=86	%	Female-Advised n=41	%	Male-Advised n=45	%
Professional nature of the mentor relationship	30	(34.9)	16	(39.0)	14	(31.1)
Relationship is analogous	11	(12.8)	5	(12.2)	6	(13.3)
Mentor relationship can become a parental one	11	(12.8)	5	(12.2)	6	(13.3)
Advisory functions	11	(12.8)	9	(22.0)	2	(4.4)
Emotional/Personal aspect to Parental Relationship	10	(11.6)	6	(14.6)	4	(8.9)
Movement to Colleague	10	(11.6)	3	(7.3)	7	(15.6)

Note: Total number of responses = 128

Table 12

SME descriptive statistics, by mentor and by sex of advisor.

Mentor		Total	Female-Advised	Male-Advised
A:	N	82	39	43
	M	68.0	63.8	71.7*
	Median	68.5	66.0	74.0
	SD	17.3	13.1	19.8
B:	N	36	11	25
	M	70.2	67.6	71.3**
	Median	66.0	65.0	68.0
	SD	15.6	16.8	15.3
C:	N	14	4	10
	M	63.6	48.0	69.8
	Median	63.5	45.5	66.0
	SD	17.5	13.0	15.4
D:	N	3	2	1
	M	79.7	92.5	71.7
	Median	75.0		
	SD	28.3		

* t (82) =-2.1, p <.05.

**t (34) =-.6, p > .05.

Note: Lower mean scores=more favorable rating by participant of the mentor.

Table 13

Significant item mean differences on SME Items for Mentor A, by sex of mentor.

Item	Female-Mentored		Male-Mentored		
	M	SD	M	SD	t
I have an intense relationship with my mentor#	2.5	1.1	3.2	1.3	-2.5*
Mentor demonstrates necessary social skills to me	2.1	1.2	2.8	1.4	-2.3*
Mentor is nurturant to me	2.4	1.1	3.0	1.2	-2.5*
Working with mentor has shown me how professionals can integrate their work and home roles effectively	2.6	1.3	3.4	1.5	-2.6*
Mentor involves colleagues in my research+	2.8	1.3	3.4	1.4	-2.0*
Mentor is isolated from colleagues+	1.8	.9	2.4	1.4	-2.3*

(table continues)

Item	Female-Mentored		Male-Mentored		
	M	SD	M	SD	t
Mentor A has introduced me to his/her colleagues+	2.3	1.3	2.9	1.6	-1.9a
Mentor A shares information with me+	1.8	.8	2.1	1.0	-1.8a
Mentor A is a productive professional	1.3	.6	1.6	1.0	-1.8a

#Grooming mentoring item

+Networking mentoring item

*Two-tailed t-test, $p < .05$

aTwo-tailed t-test, $p < .08$

Note: Lower item means more favorable rating by participant of the mentor.

Table 14

2 x 2 analysis of variance: SME, Part IV.

Source	ss	df	ms	F
Sex of mentor (A)	1281.5	1	1281.6	4.4*
Working mother (B)	185.4	1	185.4	.6
A x B	64.4	1	64.4	.2
Residual	22821.2	78	292.6	
Total	24355.8	81	300.7	

*p <.05

Table 15

Participants' mean scores, on BSRI dimensions, for self and for advisor, by sex of the advisor.

	Female-Advised M	Male-Advised M
Participants' BSRI masculine score	5.2	5.1
Advisors' BSRI masculine score	5.1	5.1
Participants' BSRI feminine score	4.7	4.8
Advisors' BSRI feminine score	4.3	4.0

Note: Bem's norms for males on the BSRI's masculine dimension = 5.1; for males on the BSRI's feminine dimension = 4.6.

Table 16

Classification of participants and their advisors, based on the BSRI median split, by sex of their advisor.

	Total n	Female-Advised n	Male-Advised n
Undifferentiated			
Participant	21	10 (10.0)*	11 (11.0)
Advisor	15	8 (7.2)	7 (7.8)
Androgynous			
Participant	28	12 (13.3)	16 (14.7)
Advisor	21	13 (10.0)	8 (11.0)
Masculine			
Participant	19	11 (9.1)	8 (9.9)
Advisor	28	9 (13.3)	19 (14.4)
Feminine			
Participant	18	8 (8.6)	10 (9.4)
Advisor	22	11 (10.5)	11 (11.5)

*Numbers enclosed in parenthesis are expected values.

Table 17

Correlated t-tests for participants and advisors on BSRI masculine and feminine dimensions.

Groups	M	SD	t
Female Advised:			
Participants' masculine score	5.2	.65	3.77*
Participants' feminine score	4.7	.45	
Advisors' masculine score	5.1	.66	5.09**
Advisors' feminine score	4.3	.71	
Male Advised:			
Participants' masculine score	5.1	.80	1.97+
Participants' feminine score	4.8	.47	
Advisors' masculine score	5.2	.79	6.53**
Advisors' feminine score	4.0	.92	

*p <.005 **p <.001 +p <.06

Table 18

Analysis of Variance Table: Bem Sex Role Masculinity Score

Source	ss	df	ms	F
Working mother (A)	1.6	1	1.6	3.2
Advisor's sex (B)	.5	1	.5	1.0
A x B	3.1	1	3.1	6.3*
Residual	40.4	82	.5	
Total	45.6	85	.5	

*p <.05

Table 19

Table of mean BSRI masculinity scores for each cell

Group	Advisor's Sex	
	Female	Male
Working mother	5.3	4.9
Non-working mother	5.1	5.5

Appendix Table 1:

Participant self-reports of why their advisor is important to their career, by sex of advisor.

Response	Total		Female-Advised		Male-Advised	
	n	%	n	%	n	%
Support/counsel	42	(48.8)	17	(41.5)	25	(55.6)
Help me finish Ph.D	29	(33.7)	17	(41.5)	12	(26.7)
Referrals/Recommendations	25	(29.1)	12	(29.3)	13	(28.9)
Inspiration/Role Model	22	(25.6	11	(26.8)	11	(24.4)
Prestige of Association	20	(23.3	9	(22.0)	11	(24.4)

Note: Total number of responses=153.

Appendix Table 2:

Participant self-reports of the mentors functions, by sex of the student's advisor.

Response	Total		Female-Advised		Male-Advised	
	n	%	n	%	n	%
Educating*	49	(57.0)	24	(58.5)	25	(55.6)
Coaching *	20	(23.3)	12	(29.3)	8	(17.8)
Close personal advisor	18	(20.9)	13	(31.7)	5	(11.1)
Movement from student to colleague*	16	(18.6)	6	(14.6)	10	(22.2)
Expertise	15	(17.4)	8	(19.5)	7	(15.6)
Encouragement*	14	(16.3)	4	(9.8)	10	(22.0)
Counseling*	11	(12.8)	3	(7.3)	8	(17.8)
Role model*	11	(12.8)	7	(17.1)	4	(8.9)

* Coded according to Schockett & Haring-Hidore (1985) categories.

Note: Total number of responses=201.

Appendix Table 3:

Participant self-reports on the advantages of having a mentor, by sex of advisor.

Response	Total		Female-Advised		Male-Advised	
	n	%	n	%	n	%
Educating*	39	(45.3)	20	(49.8)	19	(42.2)
Encouragement*	22	(25.6)	12	(29.3)	10	(22.2)
Expertise	19	(22.1)	11	(26.8)	8	(17.8)
Inspiration/Stimulation	18	(20.9)	10	(24.4)	8	(17.8)
Consulting*	13	(15.1)	6	(14.6)	7	(15.6)
Coaching*	12	(14.0)	6	(14.6)	6	(13.3)
Personalizes Learning	11	(12.8)	7	(17.1)	4	(8.9)

* Coded according to Schockett & Haring-Hidore (1985) categories.

Note: Total number of responses = 190.

Appendix Table 4:

Participant self-reports of the disadvantages of being mentored, by sex of advisor.

Response	Total		Female-Advised		Male-Advised	
	n	%	n	%	n	%
Not allowed originality	32	(37.2)	16	(39.0)	16	(35.6)
Dependency	19	(22.1)	8	(19.5)	11	(24.4)
Isolation from others	12	(14.0)	7	(17.1)	5	(11.1)
Disagreement/Conflict	12	(14.0)	8	(19.5)	4	(8.9)
Having the wrong mentor	7	(8.1)	4	(9.8)	3	(6.7)
Exploitation by mentor	6	(7.0)	1	(2.4)	5	(11.1)

Note: Sixteen participants (18.6%) reported that having a mentor had no disadvantages. Of these, ten were female advised, (24.4%), six were male advised (13.3%).

Note: Total number of responses = 113.

Appendix Table 5:

Participant self-reports of post-graduate expectations from their mentor, by sex of advisor.

Response	Total		Female Advised		Male Advised	
	n	%	n	%	n	%
Friendship/Collegiality	45	(52.3)	27	(65.9)	18	(40.0)
Referrals/contacts	29	(33.7)	13	(31.7)	16	(35.6)
Nothing	12	(14.0)	3	(7.3)	9	(20.0)
Advice	8	(9.3)	3	(7.3)	5	(11.1)
Christmas Card	4	(4.7)	1	(2.4)	3	(6.7)

Note: Total number of responses = 103.

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