To the Graduate Council:

I am submitting herewith a dissertation written by Laura Joann Saxton entitled "Achievement, Affiliation, and Gender." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

Alvin G. Burstein, Major Professor

We have read this dissertation
and recommend its acceptance:

Accepted for the Council:

Vice Provost
and Dean of The Graduate School

ACHIEVEMENT, AFFILIATION, AND GENDER

A Dissertation

Presented for the

Doctor of Philosophy

Degree

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Laura Joann Saxton

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DEDICATION

This dissertation is dedicated to my many teachers along this path. I include my parents, from whom I gained intelligence and compassion; my therapists, who helped me to develop emotional strength and sense of self; my friends in the clinical program, who provided inspiration and comraderie; my friends outside the program who gave love and support, and shared in fun and play; and my supervisors, who were much appreciated models and mentors for the healing endeavor. I include also my own intuitive self, which guides me well as I learn to listen.

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ABSTRACT

This study examined gender differences in the relationship between achievement and affiliation needs in high-aspiring undergraduate students. Previous research has concluded that women inhibit achievement behavior due to fears of success and loss of affiliative ties, or they restrict achievement behavior to sex role-appropriate domains. Recent research has noted positive correlations between high levels of achievement and affiliative needs in females, but not in males. The relationship between the two needs was of particular interest in a group of subjects who have demonstrated high achievement aspirations in their academic performance.

Subjects were 66 female and 65 male Honors students at the University of Tennessee. The Jackson Personality Research Form and Tellegen Differential Personality Questionnaire were used to obtain two independent measures of achievement and affiliation needs. Hypotheses were tested concerning possible gender differences in the relationship between achievement and affiliation, in the validity and reliability of the scales, and in the interrelationships with eight related needs.

Correlations between the two achievement and two affiliation scales were negative for both sexes, but significantly so only on two correlations for women. The

measures were free of gender differences in convergent validity or reliability. Significant correlations with other needs indicated positive relationships between Achievement and Control, Dominance, Endurance, Nurturance, and Social Recognition for men. Among women, Achievement was positively linked with Endurance and negatively linked with Social Closeness. For both sexes, affiliative scales were positively linked with Exhibition and Nurturance, and negatively linked with Autonomy. Affiliation was positively linked with Dominance and Social Potency, and negatively linked with Endurance for men only. Affiliation was positively linked with Social Recognition for women only.

These women and men were highly similar in their need scores and factor structure. Discriminant analysis indicated no overall gender differences in the patterns of interrelationships between needs. However, gender differences in individual correlations between scales stimulated four possible explanations. Issues of power, leadership, and influence had less relevance to either achievement or affiliation among women, which could be explained either in terms of "female deficit" or "psychological difference" theories. The fact that a number of needs relating to achievement and affiliation all cluster together for men could be explained by "simplistic male" or "content bias" theories. The male model of achievement based on competition and status appears to be less

applicable to women's experience. It is concluded that further development of theory and models is needed to clarify issues which are salient for women.

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GENERAL INTRODUCTION

The primary purpose of this research was to investigate the relationship between affiliative and achievement motives in women and men. This relationship is of interest because women have traditionally been described as having stronger affiliative and weaker achievement motivation than men (Denmark, McCandless, & Tangri, 1978; Sutherland and Veroff, 1985). Furthermore, it has been suggested that women experience conflict between their achievement strivings and needs for social approval (Crandall, 1963; Veroff, 1969). A variety of explanations have been developed for sex differences in achievement and affiliative concerns which will be reviewed in detail in this chapter.

The present study used personality inventory data to compare the two motives both within and between sexes. A specific question addressed in this study is the state of the affiliative motive in women who are demonstrating strong achievement motivation by their competence and excellence in scholarly endeavor. Do the women demonstrate a lesser investment in affiliative concerns as they express their drive to excel, in perhaps competitive ways? Do they retain a more nurturant, interpersonal focus in their achievement orientation relative to men?

It has been argued that in order for women to succeed in a man's world they must become more like men: more

competitive, less emotional, and less concerned with others in order to get ahead. However as societal barriers to women's achievement slowly yield, it may become more consonant with the female gender role to be both successful and connected to others in meaningful ways. The possibility of such an integration has powerful implications for the organization and operation of beaurocratic systems as women move into positions of power and influence and bring with them an orientation of care and concern for others' well-being (Gilligan, 1982). It is equally possible that men are slowly learning to experience and express more nurturant aspects of their selfhood, which may eventually impact on management, business, and world affairs. However this study is less concerned with changes in men, and they will be discussed only in contrast to the data on women.

CHAPTER I

LITERATURE REVIEW

This section begins with an overview of current empirical findings and theoretical views on sex differences in personality structure. Included in the section is a discussion of trait theory and interactionism, and theories of gender identity development. The influence of socialization and cultural stereotypes is examined, and statistics on sex differences in work and education are presented. Next follows a review of the research relating to the two particular traits of the study, achievement and affiliation. Attention is given to the research approaches used to study these traits and their conclusions, weaknesses of the approaches, and present areas of investigation. Particular attention is given to findings of sex differences and their proposed explanations.

Sex Differences in Personality Structure

There is common agreement that the sexes differ in personality characteristics (Spence, Deaux, & Helmreich, 1985). One distinction that is often utilized contrasts instrumental qualities with expressive qualities. Men are considered to fulfill instrumental roles and, more than women, to possess qualities of independence, assertiveness,

and decisiveness which permit them to be effective in both family and work settings. Women more than men are considered to be interpersonally oriented, sensitive to others, emotionally responsive, and needing affiliation. Women's expressive role allegedly allows them to function effectively in a domestic role. However their lesser instrumentality could be a handicap in extrafamilial roles which require leadership, authority, and strong achievement drive.

This dichotomy of personal qualities of men and women has been echoed by many theorists. Bakan (1966) postulated that a sense of self or agency is dominant in men, whereas a sense of selflessness or communion with others is dominant in women. Similar principles are outer versus inner space (Erikson, 1964), field independence versus field dependence (Witkin, 1974), and allocentric versus autocentric orientation (Gutman, 1965).

Early literature in this area contained an assumption that instrumental and expressive characteristics were negatively correlated. In other words, individuals who were high in one set of these characteristics would tend to be low in the other. This has been disputed by numerous theorists (Bem, 1974; Block, 1973; Carlson, 1971; Constantinople, 1973; Spence, Helmreich, & Stapp, 1974). Current contention is that these two personality dimensions are essentially independent.

These personality traits fall under the larger theoretical system of masculinity-femininity (e.g. Bem, 1974, 1981; Heilbrun, 1981). This system has also been under a great deal of debate and criticism in recent years. Theorists are debating just what is encompassed by the terms masculinity and femininity. There has been a conceptual shift from viewing masculinity and femininity as bipolar traits, i.e. endpoints of a single continuum, to viewing them as independent dimensions. It then follows that an individual can possess both masculine and feminine characteristics, or instrumental as well as expressive qualities, regardless of gender.

Androgyny has been introduced (Bem, 1974) to designate a dimension which incorporates aspects of both masculinity and femininity. It is measured as high scores on both dimensions arbitrarily defined by the group median. Some writers are skeptical that androgyny has any unique predictive power (Lubinsky, Tellegen, & Butcher, 1983; Taylor & Hall, 1982) and the initial excitement generated by this construct is waning.

All of the views cited make certain assumptions about the nature of personality and the predictability of behavior. Trait theorists take the position that underlying personality dispositions are set early in life, that they are relatively stable, and that personality involves consistency across situations. On the other side are

theorists who place more weight on social context and environmental determinants of behavior. For example, Mischel (1968) reviewed five decades of personality research and concluded that there was little evidence that traits or underlying dispositions could account for complex behavior. He argued that social factors have a strong influence on such behaviors as achievement, affiliation, introversion, aggression, etc. The current consensus is for an interactionist or contextualist position. Behavior is viewed as a joint product of a continuous, reciprocal interaction between person and environment (Bandura, 1977; Magnusson & Endler, 1977; Mischel, 1977). The environment influences behavior, and behavior influences the environmental situation. This position accepts the existence of traits but emphasizes that they have an interactional rather than exclusive influence on behavioral outcome. This review thus will address the interaction of needs for achievement and affiliation (traits) with social-situational factors (environment) such as discrimination, role models, and role stress.

Theories of gender identity development contribute to an understanding of how men and women internalize their masculine or feminine role with subsequent ramifications for behavior. There are three main theories of gender identity: psychoanalytic, cognitive, and social learning. A fourth theory has been proposed so recently that it does not appear

in most standard textbooks. This is the differentiation model of Irene Fast (1979). Each of these theories will be briefly discussed.

Psychoanalytic theory developed by Freud emphasizes anatomical differences as the primary basis for male-female differentiation. However the environment also has a major influence via the child's identification with the same-sex parent and other adults. The girl identifies with her mother in order to be able to win her father as a resolution to her penis envy. The boy identifies with his father to escape the retaliation he fears for his desire for his mother (Oedipal complex).

The cognitive model extends Piaget's ideas about cognitive development to the development of gender identity and roles (Kohlberg, 1966). Self-categorizations become the basis for incorporating gender role as a part of personal identity. Children learn to which sex they belong and that they will remain the same gender throughout their lives. They then choose behaviors they will learn and perform on the basis of rules which specify whether that behavior is appropriate for their gender.

Social learning theory emphasizes the effects of culture (Bandura & Walters, 1963). Children acquire gender-appropriate behaviors because some behaviors are rewarded , and other behaviors are ignored or punished. Consequently the rewarded behaviors increase in frequency, and the

unrewarded ones decrease. Children learn by imitating rewarding and nurturant role models, usually their parents. Children also learn by observation alone without necessarily performing the behavior themselves until a later time.

The differentiation model proposed by Fast takes issue with several of the assumptions in Freud's view. Freud believed that girls had a substrate of biological and social masculinity which they had to overcome in the development of femininity. For example, he stated that girls believe they had a penis but have somehow lost it. They supposedly feel castrated and experience feelings of inferiority and penis envy. Freud believed that girls in disappointment turn away from their mother to their father, substituting the wish for a child for the wish for a penis.

Fast suggests instead that the girl's sense of loss follows the realization that gender possibilities are not unlimited for her. In the early (pre-gender) undifferentiated stage a child's sense of sex and gender potential is not limited by actual sex. For example, children believe that their mothers have penises or that fathers can bear children. The process of gender differentiation begins with the recognition of sex differences, and the sharp realization (for a girl) that male things are lost to her. The girl's disappointment is not so much that she cannot be male, as it is that she

cannot be all things, both male and female. What is lost is a narcissistic sense of unlimited potential.

The process of becoming reconciled with limits continues as the girl recategorizes her experience in gender terms. Notions of masculinity and femininity become articulated and refined in relation to both parents. One product of the recategorization of experience is integrated as part of self; the other is recognized as opposite and independent of self. The stages which Freud describes as normal development of femininity are viewed in this model as incomplete differentiation. For example, the wish for a baby to compensate for genital inferiority suggests that the female has not managed to establish a sense of her own "independent and vigorous genitality" (Fast, 1979, p. 452). In summary, the differentiation model proposed by Fast offers an intriguing theory for the process of gender development which addresses some of the shortcomings in the original psychoanalytic theory.

Drawing on a blend of psychoanalytic and sociological perspectives, Chodorow (1978) has suggested that men and women develop their gender identity in assymmetrical ways (see also Dinnerstein, 1976). This stems from the fact that for both sexes the mother is the primary caretaker. For boys the formation of primary identification with the appropriate sex figure, the father, requires an attenuation of his primary emotional tie with the mother. He has an

early experience of his separateness from her as he turns to the father.

In contrast girls' primary identification remains bound up in their tie with the mother. They need not experience separateness from her in order to form their gender identity. Chodorow postulates that this forms the basis for the differences noted above in instrumental and expressive traits. Girls retain an affect-laden, interpersonal orientation while boys have more of a mastery orientation and define themselves through separateness and accomplishments rather than relationships. This has implications for differences in female and male achievement which will be explored further later in this review.

The differences which Chodorow cites are created by a societal structure where the bulk of caretaking is provided by the female parent. Gender differences are further solidified by both parents providing differential socialization experiences for females and males. Parents physically handle girls and boys differently (Moss, 1967). They direct them to different play objects and activities (Kagan & Moss, 1962), and they differentially reward at least some behaviors in girls and boys (Block, 1978; Sherman, 1978). Parents also emphasize different values for girls and boys (Block, 1973; Kohn, 1969). Boys are encouraged to be curious and assertive and try hard to succeed, while girls are encouraged to be neat and clean, to

act like girls, and be concerned about relationships with other people. Furthermore, the images and models presented in books and other media are sex-stereotyped. The models tend to be passive, dependent, and lacking in achievement activities for girls, and active, exploring, and independent for boys (Chafetz, 1974; Weitzman, Eifler, Hokada, & Ross, 1972). Both within and outside the home children are exposed to a myriad of influences prescribing their appropriate gender role.

Parental attitudes and behaviors have a strong impact on achievement and affiliation strivings. Moderate levels of parental warmth and nurturance, along with moderate permissiveness, were found to be associated with high achievement orientations and behavior in females (Stein & Bailey, 1970). However, the development of femininity and passivity was associated with very high levels of parental nurturance and protectiveness during childhood, and restrictiveness. Thus the stereotypical parenting pattern for girls, i.e. protective and restrictive, is antithetical to their developing achievement ambition. It is, however, consistent with developing affiliative and caretaking values.

The framework for possible role conflict for women between achievement and affiliation needs in later life may be laid down in childhood and early gender socialization. However this does not exclude potentially important factors

in later development such as childcare settings, peer and teacher influences, high school tracking, and career counseling. The groundwork is established early, but need not be viewed as immutable.

Cultural norms or stereotypes play a large part in the socialization of males and females for their appropriate gender role. In turn, behaviors, preferences, and attitudes relating to gender role which men and women express continue to perpetuate societal (stereotypical) views on masculinity and femininity. The continued existence of differential sterotypical views of men and women is well-documented. This is true not only in the general public but even among clinicians. The well-known study by Broverman, Broverman, Clarkson, Rosenkrantz, and Vogel (1970) asked clinicians to describe healthy men, women, and adults. Men and healthy adults were viewed in a similar fashion and described by such attributes as independent; objective; active; competitive; logical; skilled in business, leadership, and decision-making; self-confident; and ambitious. Women were perceived as lacking in these competency traits relative to men. Instead they were described by attributes such as being gentle; sensitive to others' feelings; neat; quiet; interested in art and literature; and able to express tender feelings. Men were perceived as lacking in these characteristics which concern relationships with others. Thus in professional as well as private arenas stereotypical

prescriptions for gender role characteristics are perpetuated.

Notions about one's gender role and the activities appropriate to it obviously will influence behavior, including the choice and pursuit of goals. To the extent that gender is a central part of one's identity, activities which fulfill that role should be valued most highly. If women perceive assertiveness, leadership, and authority as incongruent with their gender role, then they will not seek positions which demand these qualities. Values and expectancies for success are important mediators of behavior. They will be further examined in the achievement section of this review.

Women show less achievement behavior than men in both career and academic spheres. The 1985 Bureau of Labor Statistics indicates that in 1983 the civilian employment-population ratios for adults over 20 years of age were 71.4 percent for males and 48.8 percent for females. Sixty percent of women with families are employed, and women are maintaining 10 million single-parent households as compared to 2 million maintained by men. However despite the strong participation in the labor force by women, their earning power lags far behind that of men. Median weekly earnings for women in 1985 were $277 as compared to $406 for men. Within a particular occupational bracket, e.g. in executive, administrative, and managerial positions women were earning

an average yearly salary of $17,556 compared to men's $30,792.

It should be emphasized that women's attainments are not strictly a reflection of personality. Societal factors also impact on their decisions about work, education, etc. Women may find fewer opportunities and more discriminatory barriers which discourage their expression of ability. A number of situational factors may be involved in the differential success of women and men noted above. To list only a few, these factors include costs of childcare, economic earnings, and education.

The high cost of childcare may make it infeasible for women to work outside the home particularly in light of the lower pay which they receive. In addition women's concerns about the quality of childcare might produce some hesitation about utilizing available settings.

Women's economic earnings are affected by their underrepresentation in professions with higher earning power. The labor force has historically been segregated by sex with women occupying positions lower in status and pay than those held by men. These sex-linked occupational patterns are reinforced by differential encouragement or permission for college work or vocational training programs (Kreps and Leaper, 1976). Another factor is that in equivalent positions with equivalent responsibilities women continue to receive lower salary. Women recruited into the

same positions as men are paid less, promoted less, and blocked from advancement (Chafe, 1976; Schrank & Riley, 1976). Other research has demonstrated that occupations are gender-linked according to the proportions of men and women in them, and occupations are avoided if they are gender role-inappropriate (Tresemer & Pleck, 1974). Prestige of occupations is linked to the percentage of women in that occupation, with female-predominant occupations carrying less prestige (Touhey, 1974). Clearly there are some barriers to women's occupational achievement, which involve both internal and external factors.

In education, women are represented in decreasing percentages in moving from high school to baccalaureate and doctoral degrees. For example, in 1984 women earned roughly half of the bachelor's and master's degrees. However they comprised only the following percentages of first professional degrees: medicine, 28 %; dentistry, 20 %; and law, 37 %. In a longitudinal study of gifted children, Terman and Oden (1947) noted that as adults the women demonstrated less achievement relative to the men in the sample despite equally high initial levels of ability.

On a more positive note, the proportion of women earning advanced degrees in graduate and professional programs has accelerated in the last decade. In 1980 one-third of the doctorates awarded were earned by women, as compared to one-sixth in 1972. Women earned one-fourth of

all professional degrees awarded in 1980, as compared to one-sixteenth in 1972 (National Advisory Council on Women's Educational Programs, 1981). Despite this progress it is apparent that women are underrepresented in the academic arena and are not fully utilizing their equally high levels of intellectual and creative potential.

In summary, there are clearly empirically established differences between the sexes. The nature and causes of the differences are not so clear, but they have had negative consequences for women in their educational, economic, and career attainment. Socialization for gender role has been reviewed as an important contributor to the development of gender-related differences. Masculinity and femininity are now viewed as independent dimensions of personality such that an individual can be high in either or both types of traits. This study examines two traits which correspond to stereotypically masculine and femininine aspects of personality, respectively achievement and affiliation motivation . Research findings on the two traits is reviewed next, beginning with the achievement literature.

Achievement Research

Early Research on Achievement

Research on achievement motivation has a rich and productive history beginning with McClelland's work in the

1950's (McClelland, Atkinson, Clark, & Lowell, 1953). McClelland defined achievement motivation as a concern for reaching a standard of excellence. This orientation is considered to be acquired in childhood when the individual is taught to enjoy achievement activities. The individual internalizes the desire to reach standards of excellence and the motive becomes a part of the personality, or a trait. The trait is latent until it becomes aroused by environmental cues. Motivation is determined by an interaction between personal cues and environmental cues. The personal cues consist of the individual's dispositional motive (need for achievement [nAch]) as well as cognitive factors such as expectancies of success and incentive value of the behavior. Environmental cues consist of social supports and rewards for the behavior. A form of the equation developed by Atkinson for assessing the motive is:

$$TOT\ T_a = (T_s - T_f) + M_{ext}$$

The total tendency to achieve (TOT T_a) is a function of the need to achieve or the tendency to succeed (T_s), the need or tendency to avoid failure (T_f), and extrinsic motivations (M_{ext}), such as the need for affiliation, money, power, etc. Individual differences in achievement behavior are supposedly due to differences in the strength of particular tendencies such as T_s, T_f, and extrinsic motivations, M_{ext}.

Achievement motivation theory was based on Murray's (1938) system of needs which specifies that motives are

unconscious. Therefore it was believed that projective tests were the appropriate means to assess the motive. Accordingly, McClelland et al. (1953) developed an assessment procedure using the Thematic Apperception Test. Subjects were shown four cards and asked specific questions about the event pictured on the card. Early studies involved giving the test in neutral and aroused conditions, and relating the nAch score to performance on other tasks. In the aroused condition subjects were given instructions which emphasized the competitive nature of the task, in an effort to engage the latent achievement motive.

At this point divergence between the results for males and females became apparent. Males' need for achievement (nAch) scores increased from the neutral to the aroused condition, but females' did not. However, with regard to performance, a relationship for both males and females was observed between nAch scores and performance on timed achievement tasks such as unscrambling words or arithmetic problems. This suggests that there was validity of the motive for both sexes, but females' motive was not engaged in the same way as males' motive.

Explanations for Sex Differences

The discrepancies between the results on male and female subjects have been treated in a variety of ways. Some researchers essentially chose to ignore the

discrepancies and proceed with collecting data on male subjects, since females did not fit the model. In the early literature very little mention was made of the results with women. In Atkinson's 1966 edition not a single paper used women as the main subject pool. Some researchers postulated that women must be deficient in achievement motivation, since they did not show arousal of achievement ambition in experimental settings.

Recently there has been a burgeoning interest in sex differences and sex roles, and women's achievement motivation has been examined in a new light. Major reviews in the last 10 years all mention the issue of sex differences (Deaux, 1985; Mednick & Weissman, 1975; Spence & Helmreich, 1978; Spenner & Featherman, 1978).

Explanations for the observed differences in men's and women's achievement needs can be classified as either intrapsychic or situational. Evidence bearing on both types of explanation will be examined next. Four major explanations which are based on an intrapsychic cause are as follows:

1. Women are already at their peak level of achievement motivation in the neutral condition. Therefore experimental arousal procedures do not produce a change in that level.

2. Women and men respond differently according to the sex of the cue card character.

3. Women are motivated to achieve by social approval and need for affiliation. The experimental procedures failed to engage their motivation.

4. Women have a fear of success which inhibits them from full expression of achievement striving.

The following section will discuss research relating to each explanation.

1. Ceiling effects. It was observed that women's nAch level was equal in both the relaxed and aroused conditions, and also their scores in the neutral condition were higher than men's scores in the aroused condition (Veroff, 1950). One possible explanation of these results was that women are hypersensitive to achievement cues in the environment. Therefore the neutral condition for them is like an arousal condition. Since they perform at peak level in the neutral condition they are unable to make any further increase in the arousal condition. Experimenters (Veroff, Wilcox, & Atkinson, 1953) tried to make the neutral condition as relaxed and unarousing as possible, and still noted no increase in nAch scores between the two conditions. Other experimenters also confirmed the finding that women had much higher nAch scores in the neutral condition than men (Field, 1951; French & Lesser, 1964; Lesser, Krawitz, & Packard, 1963).

2. Gender of cue character. Early validation studies showed that female-cued cards elicited less achievement

imagery for both sexes than male-cued cards (Veroff, 1950; Veroff, Wilcox, & Atkinson, 1953). For both men and women nAch motivation scores did not increase under arousal to female-cued pictures (Veroff, Wilcox, & Atkinson, 1953). These findings seemed to indicate that neither sex viewed achievement as part of women's role and therefore were unable to imagine females in achievement situations.

Further research sought to clarify whether in fact women were unable to identify with the cue character and did not project their achievement motivation onto the female cue characters, or whether they were deficient in achievement motivation and had none to project. Lesser, Krawitz, and Packard (1963) looked at whether the response to female-cued cards was moderated by the achievement orientations of the women. They took two groups of female high- and low-achievers, and measured their response to male and female cued cards under neutral and arousal conditions. They found that high-achievers increased their nAch scores to female pictures only, while low-achievers increased to male pictures only. High-achievers had higher nAch scores than low-achievers. The authors suggest that only high-achievers saw achievement as relevant to the feminine role. Therefore they identified with females in achievement situations while low-achievers did not. However this fails to explain why the high-achievers did not increase nAch to male pictures. Another problem is that there was a lot of variation in

achievement situations depicted. For example, female cue characters were shown in homemaking situations more often than non-domestic achievement ones.

3. Affiliative needs. The interest of women in social activity was interpreted for many years as an indication that women were motivated mainly by need for affiliation (nAff) and social approval. However, reviews of empirical data have concluded that women actually are expressing their achievement needs through social striving rather than through intellectual pursuits.

Stein and Bailey (1973) point out that the imagery and themes which girls express in social situations is achievement imagery according to the scoring criteria McClelland and Atkinson used in their measures of achievement motivation in males. They conclude that women's striving for social approval is the feminine counterpart to male achievement striving in situations which stress intelligence. In other words, women possess similar needs for achievement as men, but express them through different avenues as a function of gender.

Ratcliff (1980) reviews the following findings: Atkinson and Reitman (1958) did a study of males with different combinations of high and low nAch and nAff. They found that high levels of nAff decreased the relationship between nAch and performance, due to the multiplicity of incentives increasing subjects' total motivation level past

the optimal level for performance. This finding could suggest that if women are primarily affiliation oriented, their need for affiliation may obstruct their achievement behavior.

The relationship between affiliation and achievement-oriented behavior was further elaborated by Atkinson and O'Connor (1966). They showed that strong affiliation motivation enhanced the level of performance at an achievement task when the experimental situation implied social approval for excellence. In people for whom affiliation is an important need, incentives such as social approval or affection could counteract the effects of low or inhibited achievement motivation.

It is important to specify here that only a moderate level of nAff be elicited, since extreme levels of arousal have been shown to inhibit performance due to anxiety (Atkinson & Litwin, 1960). A situation implying social disapproval for excellence might elicit such extreme levels of affiliation motivation. Ratcliff (1980) postulated that this captures the bind in which women find themselves, both in experiments and in their actual lives. By either overt or covert messages women may be told that they risk losing social approval for outstanding achievement, or can be guaranteed social approval for low achievement, particularly in competition against another person.

As mentioned earlier, affiliative needs at a more moderate level may promote achievement behavior when the major incentive is social approval. Hoffman (1972) suggests that this explains the superior achievement of females relative to males in elementary school, and the drastic reversal in high school and college. When the affiliation incentives change it may affect the total motivational level of females for achievement. A closer look at the affiliation motive in females is important in determining the meaning and operation of achievement motivation for them. This forms the central focus of this study.

4. Fear of success. Horner (1968) extended achievement theory by postulating a motive to avoid success, or fear of success (FOS). The idea was that women were motivated to achieve but were inhibited by fear aroused by the anticipation of negative consequences of success. This, by the way, is not the same as a wish or need to fail. Like all motives, FOS was seen as a stable personality characteristic learned in early childhood. Horner developed a fantasy measure of the motive which required subjects to write a story to the following same-sex cue:

"After first term finals, Anne (John) finds herself (himself) at the top of her (his) medical school class."

Horner found that 62% of the female subjects and 10% of the male subjects wrote stories concerning the negative consequences of Anne's or John's success. She noted that

women with FOS performed an achievement task better when working alone than when in mixed-sex competitive settings thus giving some behavioral validation to the motive. However as research in this area has accumulated the explanatory power of Horner's theory has diminished.

Hoffman reanalyzed Horner's data in 1972 and found a much higher frequency of FOS in males - 54% rather than 11.3%. However she did note sex differences in the themes which subjects expressed. The modal theme of women's stories was affiliative loss - the fear of losing the affection of friends, lovers, husbands. Men more often questioned the value of success, writing stories which depicted the uselessness and folly of achievement pursuits.

Subsequent researchers have also found women to be higher in FOS but never to as great an extent as Horner in her original study (Tresemer, 1976, 1977). The incidence of FOS in men has been noted to be on the rise, which may reflect a greater willingness on the part of men to reveal negative affect.

It is important to note the contributions made by Horner before discussing the problems with FOS theory and methodology. First, she made an important distinction between competition against a standard of excellence and competition against other people. People with FOS are presumed to have trouble with the latter but not the former. As women tend to be more attentive to interpersonal concerns

within a situation than males this is an important distinction for the study of women's motivation.

Second, Horner made a link between female socialization and FOS. She claimed that FOS results from sex role training, through which women develop awareness of societal restrictions on their achievement and possible consequences of violating such restrictions. This is important not only because it recognizes societal impact on personality development, but also because it implies that societal standards are internalized and thus come to have motivational significance.

Third, Horner made a valuable contribution with her suggestion of relationships between motives. FOS theory makes sense out of the studies linking affiliative arousal and achievement behavior by showing how a perceived threat to affiliative goals inhibits achievement performance.

Monahan, Kuhn, and Shover (1974) found high FOS in women. However both men and women told FOS stories for successful women but not for men. They suggest that this supports a learned social role rather than motivational explanation for the concept. A similar explanation was given by Stein and Bailey (1973), who proposed that women were simply expressing their knowledge of stereotypical norms for women rather than their personal achievement aspirations.

Other intrapsychic explanations for sex differences in achievement include self-attributions and locus of control. These will be reviewed in the recent research section as they involve cognitive rather than motivational viewpoints. Also they were studied using different measures than the TAT technique.

The impact of social-situational factors on women's expression of their achievement drive is likely to be great. As noted in the introductory section, personality traits are not expressed in a vacuum but are modified in interaction with environmental influences. Women face numerous social barriers including discrimination, lack of role models, and role conflict or overload which make it difficult for them to demonstrate equal achievement to men. Canavan-Gumpert, Garner, and Gumpert (1977) suggest that barriers operate on at least two levels. "At the more overt level are the long-established and formally institutionalized rules and regulations of educational or occupational organizations that stem from entrenched traditions of discrimination and that effectively serve to exclude women from opportunities. Or barriers may exist at the more subtle covert level in daily interpersonal relations with persons who are carriers of culturally inspired 'sexist' practices." (p. 129) Women have fewer female role models available to provide examples and inspiration for achievement behavior. In addition, women experience difficulty meeting the demands of multiple

roles due to finite amounts of time, energy, or other resources. Expectations and requirements for the roles of woman, mother, and professional achiever are sometimes at odds. Women may experience conflicts integrating the goals of succeeding with relationships e.g. with men and succeeding professionally. Some women may simply choose not to violate "social norms" when the costs and stress level are considered too high.

Weaknesses of Early Achievement Research

There are at least three areas of weakness in the early approaches to the study of achievement motivation. Problems lie in the methods for measuring achievement, narrow definiton of what constitutes achievement, and the treatment of achievement as a unitary construct.

Many researchers have criticized projective measures of achievement such as the TAT for their lack of reliability and validity (Clarke, 1973; Entwisle, 1972). Entwisle (1972) concludes that the mean value of reliability for fantasy-based need achievement measures is around .30. There is a disturbing failure to find correlations between measures supposed to assess the same motive (Entwisle, 1972, p. 385). Entwisle (1972) also contends that the predictive validity of fantasy-based achievement measures is poor, and there are few positive relationships between need achievement and school performance or other criterial

variables. In Murray's original system, needs were postulated to be unconscious and therefore best measured by a projective instrument. However other researchers have begun to develop objective measures of needs which will be discussed later.

A second weakness lies in the definition of achievement which usually connotes status or success in academic and vocational realms. These areas have historically been male-dominated and women have been underrepresented in positions of status and success. Research may be ignoring areas beside academic and vocational attainment where women are in fact expressing achievement motivation equal to that of men. There is an implicit assumption in the Atkinson model that achievement motivation is motivation to compete successfully with other persons. Canavan-Gumpert et al. (1977) note that "the motivation to achieve, to accomplish, or to do productive work comes from a large number of sources and not only from the desire to compete successfully with others" (p. 125).

A third weakness related to the previous one is the treatment of achievement motivation as a unitary construct. As early as 1968, Solomon suggested that it might be necessary to abandon the notion of a single global motive in favor of many relatively independent motives specific to particular areas of competition/achievement (Solomon, 1968). The complicated theoretical equation for deriving an

achievement score reveals that there are numerous components to the motive. It is possible that not all of these components have been specified, and that different patterns on component scores may account for observed sex differences.

In summary, early research on achievement using the TAT measure found that the motive was valid for both females and males, but females did not respond in the same fashion as males to arousal conditions. A variety of intrapsychic and situational explanations for sex differences in achievement motivation were reviewed. Criticisms of early research approaches include the low reliability and validity of TAT measures, the use of an achievement definition which may not apply equally to females and males, and the need to separate out some of the components which make up the achievement motive. Recent research approaches which address some of these weaknesses will be reviewed next.

Recent Research on Achievement

Recent research on achievement can be grouped into several different areas. Some investigators are developing new techniques to measure achievement behavior while remaining within a motivational framework. An example of this is the work of Spence and Helmreich (1983) which addresses all three of the weaknesses delineated above.

defined an array of component motives that are grouped together as achievement motivation. They argue against the view of achievement motivation as a unitary construct defined by a narrow range of activity. Other researchers have focused away from motivational constructs to the cognitive processes that are involved in achievement motivation (Eccles, 1983). This research has been concerned with the role of expectancies, incentive values, and causal attributions in achievement behavior. Finally some researchers have attempted to delineate different styles of achievement. Achieving styles refers to the means that individuals use in the pursuit of their achievement goals. Research on styles usually involves looking at the interrelationships of multiple factors such as domains of achievement, cognitive variables, and locus of evaluative standards (Lipman-Blumen, Leavitt, Patterson, Bies, Handley-Isaksen, 1980; Travis, Burnett-Doering, & Reid, 1982; Veroff, 1978). Discussion of each of these research areas follows.

The criticisms of the definition and measurement of achievement employed in earlier research are being addressed in current research efforts of Janet Spence and colleagues (1983). They suggest that the definition of achievement be broadened to include any type of performance that may be evaluated by the individual or by others according to its excellence and that may occur in a wide variety of settings.

"Achievement is task-oriented behavior that allows the individual's performance to be evaluated according to some internally or externally imposed criterion, that involves the individual in competing with others, or that otherwise involves some standard of excellence." (p.12) This definition not only includes school and work performance, but also achievement-oriented behavior in avocational and extracurricular contexts. Women were previously believed to be lacking in achievement needs because they did not achieve in work and school areas as men did. Stein and Bailey (1973) advanced the hypothesis that women direct their achievement strivings towards areas that are consistent with traditional sex roles, e.g. raising a family or doing volunteer caretaking work. Under Spence's definition women's activities in the home, family, and in unpaid labor postions are viewed as satisfying achievement needs. Thus this definition encompasses more of the activities to which women typically devote their time. Furthermore, the individual's performance can be evaluated by his or her own standards, or by external sources. Thus achievement strivings can be expressed in activities that are personally gratifying whether or not they are recognized or rewarded by society at large.

Broadening the notion of achievement from a unitary to a multidimensional construct might shed some light on sex differences. One factor in achievement differences could be

that women and men emphasize different motives in their achievement orientation. Spence and her colleagues (1983) have developed an objective instrument called the Work and Family Orientation Questionaire (WOFO) which taps three different motives. The motives are mastery, or the preference for challenging tasks and for meeting internal standards of excellence; work, or the desire to work hard; and competitiveness, or enjoyment of interpersonal competition. Their findings indicate that in fact the structure of achievement motives is similar for both sexes. However they note that in unselected groups, sex differences in the strength of these motives appear. Women tend to score higher on work and men higher on mastery and competitiveness.

The concept of achievement as a unitary construct has also been criticized by Douglas Jackson along Ahmed and Heapy (1976). They used five different measures to assess six distinct dimensions of achievement. The dimensions were Status with Experts, Acquisitiveness, Achievement via Independence, Status with Peers, Competitiveness, and Concern for Excellence. They obtained substantial evidence of the heteromethod convergent and discriminant validity for the six facets of achievement, both at correlational and factor analytic levels. They conclude that achievement should more accurately be viewed as a multi-dimensional

construct. Unfortunately no information on sex comparisons was provided.

Some recent models of achievement behavior focus on the role of cognitive rather than motivational factors. Eccles and her associates (1983) have developed a model which suggests that performance variables in achievement such as task choice and persistence are influenced by individuals' expectancies or subjective probabilities of success and the value they place on attaining success. Expectancies and values, in turn, are determined by a multitude of variables such as goals and self-concepts, perceptions of others' expectations, interpretations of reasons for past performance (causal attributions), locus of control, cultural stereotypes, and perception of task difficulty and task value. In applying the model to academic behavior Eccles (1983) found empirical confirmation that cognitive factors have implications for actual achievement behavior. She highlights the importance of subjective task value as a critical predictor of female and male choices in (academic) achievement domains.

The components in Eccles' model are too numerous to review individually here. Further attention will be given to causal attributions and locus of control as examples of cognitive variables influencing achievement behaviors. Causal attributions in achievement situations have a rich research history beginning with the work of Weiner, Frieze,

Kukla, Rest, and Rosenbaum in 1971. They developed a 2 X 2 model of attributions, which are the explanations that people give for different outcomes to a task. These explanations can be either internally or externally based and stable or unstable in duration. The four explanations for an outcome are ability (internal, stable); effort (internal, unstable); task difficulty (external, stable); or luck (external, unstable). The research method typically involves asking an individual to state which of these explanations applies for an outcome of either success or failure.

Locus of control is closely related to attribution theory (Crandall & Crandall, 1965). Locus of control refers to the belief that one is responsible for or in control of outcomes. This has important ramifications for the effort that an individual is willing to invest in achievement behavior. Dweck (1975) has integrated this concept with Seligman's work (1975) to formulate a concept of academic learned helplessness. This describes students who feel they have no control over their failures. Both of these constructs are similar to internal versus external attributional patterns. Empirical evidence has demonstrated that locus of control and learned helplessness play a mediating role in achievement behavior. Findings on sex differences have not been consistent (Parsons, 1981).

Researchers have noted sex differences in patterns of causal attributions. Women take less personal credit or responsibility for their achievements than do men (Deaux, 1976; Deaux & Emswiller, 1974; Frieze, 1975; O'Leary, 1977; Weiner, 1972, 1974). Males commonly attribute success to a stable internal factor (ability) and failure to an external unstable factor (bad luck), whereas the pattern is reversed in females. Females more often attribute success to external causes (good luck) and failure to internal causes (lack of ability) (Bar-tal & Frieze, 1976; Deaux, 1976; McHugh, Frieze, & Hanusa, 1982). This has been labelled a self-defensive bias in males and a self-derogatory bias in female achievement attributions (Deaux, 1976). A self-defensive bias manifests by attributing failures to external causes and successes to internal causes. A self-derogatory bias leads to the opposite pattern, whereby positive feedback for success is excluded from one's self-concept. These results have been linked to expectancies for success (Zuckerman, 1979) and consequent achievement behavior. It is proposed that if women attribute their success to the vacillating fortunes of luck, and their failure to their own inadequacy or poor effort, then they will have lower expectations for success and less motivation to go after success (see Eccles, 1983, p. 88).

The evidence for sex differences in causal attribution is now being called into question. An issue of Sex Roles

has been devoted to reviewing the evidence. Topics included effect-size analysis, explanations positing individual rather than sex differences, and meta-analysis of previous studies. Using an effect-size analysis, Sohn (1982) reports that empirical evidence does not support the often cited idea that the sexes differ consequentially in their use of any of the four main types of achievement self-attributions, nor in their use of internal vs external attributions. He also notes a weak relationship between attributions and achievement behavior. In other words, speculation about the consequences of attribution patterns (especially of females) for actual achievement may not hold much weight.

Other researchers also provide evidence to counter earlier claims of sex differences. Levine, Gillman, and Reis (1982) propose that these sex differences are in fact rooted in individual differences which vary between females and males on the whole. These individual factors then play a mediating role between sex and patterns of attribution. In looking at a number of individual factors (self-esteem, performance expectancies, achievement motivation, fear of success, attitudes toward women, and androgyny), they found that achievement motivation was the most consistently successful predictor of these sex differences. In other words, the supposed sex differences in attributions may reflect individual differences in motivation which reflect socialization and are therefore linked to gender.

Meta-analytic review of 21 studies on sex differences in success-failure attributions also indicates that none of the present models are empirically well supported (Frieze, Whitley, Hanusa, & McHugh, 1982). This study found only two consistent sex differences: Men are more likely to attribute success or failure to ability when informational attributional wording is used; and men are less likely to attribute successes and failures to luck. Many of the studies that they surveyed did not find strong sex differences and those which did appear often contradicted one another. It seems that sex differences in causal attributions are not as clear and may not be as consequential as previously believed.

McHugh, Frieze, and Hanusa (1982) offer some suggestions for future research to clarify this area: "(1) the study of achievement behavior in multiple contexts, (2) attention to which tasks or domains are selected or preferred by participants, and (3) consideration of the individual's definition of both the task and the outcome." (p. 476). They suggest a focus on naturally occurring achievement behaviors and cognitions rather than experimentally-manipulated situations.

In line with one of these suggestions some research investigators are allowing subjects to define what constitutes a success or failure experience. Travis, Burnett-Doering, and Reid (1982) asked subjects to define

their own achievement domain which was then classified as a mastery, personal, or interpersonal domain. This yielded information about what achievement domains are most salient for females and males. By this method subjects also were expected to recall experiences in which they were "ego-involved", rather than having an event designated by the researcher which had no personal relevance for them. Using this research approach, Travis et al. found that sex per se was not a clear determinant of causal attributions for success or failure. Achievement domain and conceptual orientation (referring to emphasis on the process or the impact/outcome) affected causal attributions in a complex fashion. It does appear more useful and informative to study achievement patterns within personal life situations than in contrived laboratory exercises.

Conceptual orientation was introduced by Veroff as part of his taxonomy of achievement motivation types. He found that women placed more emphasis on the process of achieving, e.g. building their competence. Men focused more on having an impact with their competence. Elaborating further on sex differences in achievement types, Veroff (1977) suggests that men and women may differ in their relative concerns over autonomous and social achievement. After examining empirical data from a variety of sources Veroff concludes that women place more emphasis on achievement for its own sake (autonomous achievement), and men place more emphasis

on competition and social comparison concerns (social achievement). These results appear to be parallel to those of Spence where women emphasize work and men emphasize mastery and competition.

Other research on achieving styles makes a similar distinction between social and task orientations. Styles of achieving are characteristic ways in which individuals approach achievement situations (Lipman-Blumen, Leavitt, Patterson, Bies, Handley-Isaksen, 1980, p. 135). Lipman-Blumen et al. have developed a model delineating two major domains of achieving styles: direct and relational. They define these as follows. "A direct achieving style is used by individuals who confront the achievement task directly, using their own efforts of mind and body to accomplish their goal. Individuals who use direct styles of achieving act as agents on their own behalf, encountering the task without recourse to intermediaries. Relational achievers, in contrast, seek success through the medium of relationships. Individuals who utilize relational achieving styles establish, contribute to, depend on, or manipulate relationships to get what they want." (p. 148) Relationships could also be ends in themselves from this perspective. Within each of these two major domains, they distinguish several subtypes that may characterize achievement-related behavior.

Lipman-Blumen et al. have developed the Achieving Styles Inventory (ASI), which uses a self-descriptive sentence format to measure the nine different achieving styles. Of interest to the present research is the consistent finding that in older and more traditional populations sharp sex differences occur. Men score higher on the direct scales and women higher on the relational ones. However they note that these differences are reversed in engineering and MBA students. They attribute this to the impact of feminist thinking on younger women who are now entering professional and graduate schools in increasing numbers. Another perspective is that the reversal would be especially evident in male-dominated fields, e.g. engineering and MBA school, for women who have the ambition to enter these fields.

Lipman-Blumen et al. highlight two strengths of their research approach. The first is that achieving styles provides a process perspective on the ways people go after what they want. They feel that this bypasses "some of the conceptual and methodological traps surrounding the motivation concept" (p. 163), and comes closer to directly observable behaviors. The second strength is the new emphasis on the concept of relational achieving, which was previously neglected in favor of studying the behavior of single individuals. The idea of relational achieving is similar to an earlier notion that women may satisfy their

achievement needs vicariously through the successes of their husbands and children (Lesser, Krawitz, & Packard, 1963). While in the past societal proscriptions may have limited women to vicarious achievement, Lipman-Blumen et al.'s findings suggest that women today are more able to utilize direct achieving styles.

Analysis of the multiple components of achievement motivation, focus on cognitive elements of task value and choice in academic and career settings, and concern with process all represent improvements on previous strategies in achievement research. This work promises to yield new understanding of achievement motivation and its complex interaction with gender. The next section presents a review of the literature on affiliation motivation.

Affiliation Research

The class of needs which Murray (1938) labelled affiliation has to do with affection between people. Individuals who are high in need for affiliation (nAff) are described by such adjectives as warm, friendly, companionable, cooperative, good-willed (Jackson, 1974). Affiliation is expressed in behavior as a need to form friendships, to cooperate, talk, join, and live with others, and to love.

Previous Research on Affiliation

A method similar to that developed for the achievement motive was used to arouse and assess affiliation needs using TAT cards (Atkinson, Heyns, & Veroff, 1954; Heyns, Veroff, & Atkinson, 1958; Shipley & Veroff, 1952). Early studies found that nAff was aroused in both men and women by placing them in situations where they were concerned about acceptance by their same-sex peers, at least when same-sex picture cues are used (Atkinson, Heyns, & Veroff, 1954; Morrison, 1954; Rosenfeld & Franklin, 1966; Shipley & Veroff, 1952). Conditions for arousal of the motive included giving subjects feedback about how well they were liked by peers, asking them to rate classmates on social acceptability, or an a priori condition of having been rejected by a fraternity (for men). The conclusion from this approach was that the measure of affiliation was equally valid for women and men (Stewart & Chester, 1982).

Behavioral correlates of affiliation also were noted to be similar in studies involving men and women. Stewart and Chester (1982) summarize the following studies: McAdams (1979) found that both men and women high in nAff tended to remain physically closer to others, to laugh more, and to engage in more reciprocal dialogue in interpersonal exercises than individuals with weaker affiliative needs. Byrne (1961) observed that subjects high in nAff became more anxious than subjects with low nAff when peers were rating

how likeable they were. In studies analyzing men and women separately, both sexes were more likely to avoid making potentially divisive comments to others working on the same group task (Exline, 1962). Both sexes also preferred to stay with the same group they had worked with before on a task (Exline, 1960).

Other studies done involving only female or male subjects demonstrated expected relationships between affiliation motivation and behavior (see Stewart & Chester, 1982, p.192 for review). The evidence (at least among college students) supports the definition of affiliation as a concern with establishing and maintaining interpersonal relationships.

Interaction with Achievement Motivation

The present study is concerned with the interrelationship of affiliation and achievement. Affiliation motivation appears to be consistently related to performance on achievement tasks. Studies on men suggest that people high in affiliation need are more likely to achieve than those low in the motive only when the required behavior satisfies affiliative goals (Atkinson & Raphelson, 1956; deCharms, 1957; French, 1955). Similar findings are obtained when female subjects are also included. While overall academic achievement is not related to nAffiliation for males or females (Sundheim, 1962), affiliative motive

did predict better grades among male and female psychology majors in classrooms high in affiliative cues (McKeachie, Lin, Milholland, & Isaacson, 1966). This finding was replicated in math classes for males but not for females. It may well be that females' well-documented math anxiety has a stronger influence on their response than the level of affiliative cues in those classrooms.

French (1956) did a study where she varied level of achievement and affiliation motives, plus situational press to determine how an individual would choose a work partner (summarized in Denmark, Tangri, & McCandless, 1978). Airmen in groups of four were manipulated so that three members of the group were made to like each other and disliked the fourth member, who was the experimental confederate. However only the fourth member was able to solve a concept-formation task. When asked to choose a partner for an additional task, subjects higher in nAch than nAff chose the successful fourth member significantly more often. Subjects higher in nAff chose a partner who was liked but had not been successful. This study used only men, but the implication drawn is that (any) individual high in nAff might sacrifice nAch to affiliative concerns. This has particular ramifications for women who are noted to be higher in nAff. Further study is needed on the issue of whether women perceive gratification of affiliation and

achievement needs as mutually exclusive activities regardless of the situation.

Studies of the effect of nAff on performance in competitive situations are not clear-cut. Karabenick (1977) found that women with high scores for negative affiliation imagery (fear of separation and rejection) did less well in competitive situations than when alone, but this was not true for men. However the confederate subject against whom the men and women competed on the competitve task was always male which could have biased the results. Possibly men with strong fears of rejection would also inhibit their performance if they were competing with a woman. Rapaport (1977) found that women high in both nAff and nAch performed better in competition with same-sex peers than with opposite-sex peers. It may be considered more socially appropriate for women to compete among themselves but not against men because it violates sex-role norms.

In summary, the research suggests that need for affiliation affects performance similarly for men and women. "...men and women with a high need for affiliation are motivated to perform better if they are not afraid of disappointing others, and if by doing well they can achieve positive affiliative goals (pleasing others, maintaining a relationship,etc.)." (Stewart & Chester, 1982, p.195) However this conclusion implicitly points to the conflict mentioned above. What does a highly affiliative individual

do in an achievement situation which may jeopardize their affiliative concerns? Perhaps the answer depends on which component of the affiliation motive is predominant. Negative affiliation imagery emphasizes fear of separation and rejection, whereas positive affiliation imagery emphasizes desires for maintaining relationships and positive affect regarding relationships (Karabenick, 1977). It seems that an individual fearful of rejection would be more likely to compromise achievement on a task, whereas an individual with positive affiliation attitudes would be confident and attracted towards interpersonal situations and success.

There is some evidence that affiliative needs may enhance achievement behavior rather than being detrimental. For example, a study of female musicians found that women with strong affiliative needs were more likely to be positive about their ability to perform in front of an audience (Mueller, 1975). Gallimore et al. (1974) observed that Hawaiian students who are especially affiliation motivated are more likely to orient to teachers and to be able to relate effectively. Thus individuals motivated to secure affiliation rewards might develop more skillful interpersonal behavior which could be applied to a variety of situations, including achievement. This is consistent with evidence from small group research on U.S. college students. Sorrentino (1973) found that high nAff scores are

under some conditions related to performance effectiveness in task-oriented situations. Thus it can be stated that high need for affiliation is not inherently in conflict with need for achievement, but can in fact enhance achievement performance.

Stewart and Chester (1982) conclude their review of affiliation with the following statements: "In general, affiliation motivation appears to be a valid measure for both men and women. It is aroused in similar ways and expressed in fantasy by similar imagery. For both sexes, the motive appears to be related to behavior that is meant to establish and maintain relationships, particularly among one's peers. Those sex differences in behavioral correlates that have been found appear to be more a function of differing peer group norms than of gender differences." (p.196) It should be noted that it remains to be conclusively determined whether there exist sex differences in the strength of the motive.

Weaknesses of Affiliation Research

It is readily apparent in reviewing the literature the nAff has been much less studied than nAch. One plausible explanation is that a large majority of the researchers and also the subjects have been male. Affiliation is a more feminine characteristic. With the upsurge of interest in the psychology of women in the last decade and the

application of feminist thinking in psychology there has been an increased focus on the experience of women (e.g. Alper, 1974; Sarason & Smith, 1971) and the ways that earlier research has failed to adequately study the concerns of women (Wallston & Grady, 1985). For example, women have been assessed for achievement motivation on tasks that are more stereotypically masculine tasks (Entwisle, 1977).

Problems with the research on affiliation are similar to the problems with research on achievement. Weaknesses involve methodological issues in its measurement and conceptual issues in the definition of affiliation. Like achievement, affiliation was studied using a projective measure. The reliability and validity problems with measurement using a projective instrument have been noted above.

Like achievement, affiliation involves more than a unitary construct. Denmark et al. (1978) suggest that affiliation may often be confounded with two related needs, need for nurturance and need for succorance. On the Personality Research Form which was developed arround Murray's system of needs, nurturance is defined by the following adjectives: sympathetic, paternal/maternal, helpful, benevolent, encouraging, caring, and comforting (Jackson, 1974). Succorance is defined as trusting, dependent, entreating, seeking help, advice, support, and protection. Along with affiliation, nurturance and

succorance convey stereotypical qualities of femininity. Overlap between the concepts could affect perceived gender differences. Part of this study will investigate gender differences in the components of affiliative orientation as well as the components of achievement orientation.

Statement of Research Issues

Theorizing on women's achievement behavior usually involves a link with affiliative concerns. Thus it is important to look closely at the empirical findings on the relationship between achievement and affiliation. While some researchers suggest that need for achievement and need for affiliation are negatively correlated (Heckhausen, 1967), high need for achievement in women has been positively correlated with high need for affiliation (Sutherland & Veroff, 1985). In other words, when women do possess a strong orientation towards success they also bring or retain a strong concern for interpersonal connection. This suggests that in women achievement and affiliation can be integrated, contrary to earlier conjecture that these needs result in conflict. Perhaps it is true that some women experience a high degree of conflict, and these women would be less likely to demonstrate high achievement. Alternatively, they might tailor their achievement endeavors to be consistent with affiliative needs.

In men, on the other hand, achievement and affiliation are two areas which are kept separate. For example, Veroff (1982) makes the following interpretations of data from a 1976 national interview study of motives: "...highly achievement-oriented men see marriage as tangential to their general orientation to work. ... They see their relationship to their spouse as an alliance of a couple working together on an agreed upon separation of work for the man and more interpersonal aspects for the woman." (p.118)

It seems likely that achievement and affiliation hold different meanings for women and men, and that the instruments designed to measure these traits may be tapping different things for each sex. The male model of achievement behavior developed by McClelland and colleagues has not been found to be as predictive of achievement behavior in women as it has in men. Inconsistent results have been obtained in trying to apply this model to female achievement behavior (Entwistle, 1972; Klinger, 1966), mainly because females were already at a ceiling level and did not increase their achievement scores in response to experimental arousal procedures.

Problem Areas Addressed in Present Study

One idea which the present study will explore is that ambiguous results in the literature are linked with differences in the psychological meaning or salience which a

given activity may hold for men and women. For example, when a man chairs a board meeting he may feel successful if a plan which he supports is enacted. A woman on the other hand may feel successful if she feels that everyone participated and a decision was reached in a collaborative fashion. Broad measures of achievement motivation obscure the meanings unique to each gender which are a part of their experience of a given activity. In particular, this study is concerned with the interaction of interpersonal concerns and achievement behavior. Women have traditionally been viewed as prone to sacrifice their achievement needs for interpersonal concerns (Hoffman, 1972). Another explanation hypothesized in this study is that women integrate these two areas in a way that men do not.

Another problem to be studied involves the potential limitations of tests and measures. Validity is of course always limited by the reliabilities of the constructs involved (Nunnally, 1978). Sex differences in reliability could lead to differences in construct relations. If, for example, measures of achievement are more reliable for men than women, observed differences in the relationship between achievement and any other construct such as affiliation could be a function of the differences in reliability.

Investigation of sex differences in reliability on achievement scales is important because the scales were developed on a male model of achievement. High scorers are

described in terms of adjectives such as driving, ambitious, competitive (PRF) and "works hard; likes long hours; puts work and accomplishment before many other things" (DPQ). Such measures are more comprehensive of the experience of men in our society. Likewise, affiliation scales were developed around what is viewed as the focus of attention for women. They capture more of what are considered sterotypically feminine qualities. Defining adjectives are loyal, warm, gentle, cooperative, hospitable (PRF) and "takes pleasure in, and values, close interpersonal ties; is warm and affectionate; turns to others for comfort and help" (DPQ). It is possible that the scales inherently pull for a traditionally masculine role on the achievement scales and a traditionally feminine role on the affiliation scales. One consequence, for example, might be that lower scores for women on achievement scales do not indicate less need for achievement but rather that women direct their achievement efforts into different specific areas than those tapped by the scales. The possibility that women have different domains of achievement has been suggested in previous research (Stein & Bailey, 1973).

The PRF manual does not indicate that scale reliabilities were determined separately by sex in the normative population. For the DPQ normative studies established equivalence of reliability (r=.85) for men and women in the sample population. However the normative

population in both cases was a heterogeneous sample of college students. The present population has the distinctive characteristic of being a high aspiring population. It is therefore of interest to determine whether in a high aspiring population the equivalence of reliability is preserved. Internal consistency reliabilities for achievement and affiliation will be examined for each sex to determine whether the measures might have different reliability, and thus validity, for each sex. Many other measures have shown differences in reliability by gender (Dew & Galassi, 1983; Grant, 1982; McFarland & Anderson, 1980; Robertshaw, 1983).

The research on submotives in achievement orientation (Spence, 1983; Veroff, 1977) suggests that women and men may differ in their concerns with different aspects of achievement (e.g. work, mastery, or competition). One way to separate out different facets of complex motivations such as achievement and affiliation is to look at their relationships to other motives. The PRF and DPQ provide a convenient means to do this with the other scales that they produce. For this study eight additional scales will be selected to provide more information on gender differences in achievement and affiliation orientation.

Specific Research Questions

Based on the above considerations six research questions will be addressed.

1. First, the relationship between affiliation and achievement for women and men will be examined. It is hypothesized that these two traits are more positively linked in women than men. Mean levels of achievement and affiliation will be compared between sexes as well.

2. Convergent validity of affiliation across measures will be examined. The prediction is that affiliation as measured by PRF Affiliation and DPQ Social Closeness scales will show stronger convergent validity for women than for men. The reasoning is that affiliation as defined on the measures is more congruent with a feminine gender role. For men, affiliation may be more situationally determined, rather than trait-determined or dispositionally determined.

3. Convergent validity of achievement across measures will be examined. The prediction is that achievement as measured by PRF and DPQ Achievement scales will show stronger convergent validity for men than for women. The reasoning is that achievement as defined on the measures is more congruent with a masculine gender role. For women, achievement may be more situationally determined, rather than trait-determined or dispositionally determined.

4. Investigation will be made of internal consistency

reliabilities for men and women on:

a) achievement scales

b) affiliation scales

As stated earlier, the validity of the constructs is limited by reliability. It is predicted that women will have greater reliability than men on affiliation measures, but there will be no difference on achievement measures. The reasoning is, again, that affiliation is congruent with feminine gender role but in the present sample, achievement has been demonstrated to be a self-congruent trait for both sexes.

5. and 6. Investigation will be made of the interrelationships among variables relating to achievement and affiliation. The following scales are of interest:

PRF	DPQ
Achievement	Achievement
Affiliation	Social Closeness
Dominance	Social Potency
Social Recognition	Control
Endurance	
Autonomy	
Exhibition	
Nurturance	

5. The hypothesis is that for men achievement needs are more closely linked with needs for status, approval, and attention (Social Recognition, Exhibition) and for careful

and cautious planning (Control). Achievement is a high priority for them and is linked to determination, perseverance, and investment (Endurance). A higher correlation would be predicted between their achievement scales and the scales noted in parentheses than for women.

For women, achievement needs are expected to be linked with freedom from stereotypical notions of femininity (Autonomy) and a self-image which incorporates power, leadership, and ability to influence and persuade others (Dominance, Social Potency). These traits are perhaps not directed towards competition with others, nor striving for status and power over them. Rather they are a reflection of autonomous goals and individualistic pursuit to "be all that one can be". A higher correlation is predicted between Achievement and Autonomy, Dominance, and Social Potency scales for women than men.

6. Affiliation is considered to be an area of high investment and priority for women more than for men. Thus affiliation in women is hypothesized to be more strongly linked to investment of hard work (Endurance) and careful planning and reflection (Control). In men, however, affiliation is hypothesized to be an arena for influence and power (Dominance, Social Potency) and again attention-seeking (Exhibition). There may be a pattern in which women work to develop relationships, whereas men seek to make relationships work for them, i.e. to provide them with

sought-after authority and admiration. It may be that for women relatedness is a goal, whereas for men it is a means to an end. In effect, affiliation could be used by men as another achievement arena. In this study it is predicted that women will have higher correlations between Affiliation and Control, and Endurance. Men are expected to have higher correlations between Affiliation and Dominance, Exhibition, and Social Potency.

It is postulated that Nurturance is a need closely related to Affiliation regardless of gender. Therefore it is predicted that women and men will both show significantly positive correlations between Nurturance and affiliation scales.

CHAPTER II

METHOD

Subjects

Subjects (n women=66, n men=65) were high-aspiring undergraduate students at the University of Tennessee-Knoxville. High-aspiring was defined by participation in an honors program, which requires meeting certain criteria concerning grade-point average and ACT scores (see Table 1).

Subjects were recruited from a heterogeneous collection of honors groups. College Scholars, Chemistry, Physics, and Psychology Honors students were solicited to participate. The College Scholars program is an undergraduate major at the University of Tennessee which allows selected students the freedom to design an individualized course of study. Chemistry, Physics, and Psychology students were drawn from the Honors curriculum in their respective departments.

Table 1 presents the requirements for admission to each of the honors groups. ACT and SAT requirements and other criteria for eligibility were somewhat diverse across the four groups. However all subjects were demonstrating a fundamental motivation and investment in intellectual development and academic success by their enrollment in honors curriculum. This satisfied the requirement of this

Table 1 Requirements for Admission to Undergraduate Honors Groups

Honors Groups	ACT	SAT	Criteria for Eligibility
College Scholars	(not applicable)		letters of reference, written application, and interview
Chemistry	29 Comp. or	1200 Total	1 year high school chemistry
Physics	28 Comp. or	1600 Math or sum of 1150 Total	1/2 year trigonometry Must maintain 3.2 GPA
Psychology	25 Comp. or	1020 Total	3.2 high school GPA

study for high-aspiring individuals. This study was not concerned with a particular cut-off for intellectual ability per se, but rather the demonstration of motivation to achieve and succeed beyond minimal standards, i.e. not simply pursuing the regular minimum curriculum.

There were 131 subjects in the present study. The composition of the subject groups is presented in Table 2. The subjects ranged in age from 17 to 51. The average age for the total sample was 20 years, with or without one extreme age of 51. Academic status of the participants ranged from freshman to senior.

The data for this study were gathered over a five year period. Sixteen College Scholars were tested during the 1983-1984 academic year. The remaining College Scholars

Table 2 Subjects Grouped by Major and Sex

	Major			
Sex	Col. Scholar	Chem./Physics	Psychology	Total
Female	34	11	21	66
Male	35	20	10	65
Total	69	31	31	131
% of Total	52.7	23.7	23.7	100

plus Chemistry/Physics Honors students were tested over the next three academic years: 1984-1985, 26 subjects; 1985-1986, 27 subjects; 1986-1987, 31 subjects. The 31 Psychology Honors students were tested during the 1987-1988 academic year. Participation rate (ratio of the number participating to the number solicited) averaged over the five-year data collection period was 60%.

Procedure

Research Group Data Collection

Data on College Scholars and Chemistry/Physics Honors students were collected as part of an ongoing research group project on academically successful students. The subjects' voluntary participation in the study was solicited by a letter and follow-up call explaining the research interests

and data collection procedures. An optional feedback session for discussion of their test results was offered.

A battery of psychological assessment procedures was administered to each subject by a member of the research team. All team members were graduate students in clinical psychology who had training in the administration of each instrument. In the first session, demographic information was collected and the following tests were administered: Jackson Personality Research Form (PRF), Tellegen Differential Personality Questionnaire (DPQ), Van Lennep Four Picture Test, and the Cornell Index. Subjects would take either the PRF or DPQ in counterbalanced order, write a story to the Van Lennep Four Picture Test, and then take the test not taken first (PRF or DPQ). The Cornell Index was completed last. The second session included administration of the Rorschach Inkblot Test, and an audiotaped interview.

Psychology Honors Data Collection

The investigator recruited Psychology Honors students by visiting their class in the Fall quarter, 1987. Students were told briefly about the project, and that their participation would require two hours for completing the two personality inventories. Incentives were offered in the form of feedback on their two personality profiles, and class credit. The tests were administered mainly in two group sessions, although a few students were tested

individually. Demographic information was collected at the beginning of the testing session, then the PRF and DPQ were administered in counterbalanced order. Feedback was provided in one group session with an explanation of the meaning of the test scales and how to read the profiles.

Instruments

The two personality inventories employed in this study were the Jackson Personality Research Form (PRF) (Jackson, 1974) and the Tellegen Differential Personality Questionnaire (DPQ) (Tellegen, 1982). The PRF (Form A) is a 300 item, true-false, self-report inventory which was developed using constructs from Murray's personality theory. It yields scores on fourteen personality traits and one validity scale. A longer form of the PRF (Form AA; 440 items) yields twenty trait scores and two validity scores. The PRF reflects many technical advances in test construction, including computerized item analysis and selection procedures.

Jackson began by writing explicit, detailed descriptions of 20 personality constructs. Next a pool of more than 100 test items was generated for each construct. From these, 20 per scale were selected on the basis of high biserial correlation with total scale score, low correlations with other trait scales, and other statistical checks. Multimethod factor analyses on the data from 202

college students (Jackson, 1974, pp.25-26) corroborated the grouping of items into the 20 scales. Empirical validation of the PRF scores was obtained through comparison against pooled peer ratings and self-ratings. This sequential procedure utilized by Jackson insures that validity is built into the test at each step in its development (Jackson, 1973).

In view of the population of this study, the PRF was considered a suitable instrument because it was standardized with non-pathological populations. Unlike other tests such as the MMPI, the scales measure normal rather than pathological traits. Additionally, the design and validation of the test meet high psychometric standards. For the fourteen trait scales average test-retest reliability exceeds .80. Odd-even and KR-20 reliabilities average over .70. The trait scales were cross-validated by blind behavioral ratings and yielded median correlations of .52. The instrument has received acclaim for its psychometric soundness (Anastasi, 1972).

The DPQ was developed by Auke Tellegen using factor analysis. He selected personality dimensions which have proven to be empirically robust in the research literature rather than following any particular personality theory. The test is a self-report personality inventory consisting of 300 true-false items. It generates 11 primary personality dimension scores, and six validity scores. In

addition there are three "higher order" trait scores which were derived using regression procedures from subsets of the 11 primary traits. Norms were obtained for college students. For the 11 personality scales, internal consistencies ranged between .80 and .92, with a median of .86. Test-retest reliabilities over a one-week interval were determined for 6 of the scales and were all at least .90. This instrument is also very psychometrically sound.

Recent research on these two instruments assessed item overlap between similar scales (Loucks, Glass, & Burstein, 1987, manuscript in preparation). It was found that similar scales had at the most 5% of their items in common. An estimate of the proportion of shared variance attributable to common constructs was obtained by subtracting the percentage of common items from the total percentage of variance shared between the scales. In each pair of scales compared, the proportion of common items was not great enough to account for the proportion of shared variance. Therefore item overlap which exists is not considered cause for concern in the present study.

Scoring Procedures and Reliability

Tests were scored by hand with scoring keys. Raw scale scores were entered into a computer data bank. Data were checked again for errors after being entered. Scoring reliability is considered to be 100%.

Hypotheses in Operational Terms

The specific research questions and predicted outcomes were as follows:

1. The first research question compared the correlations for men and women between Achievement and Affiliation on the PRF, and between Achievement and Social Closeness on the DPQ. It was predicted that women would have higher correlations. Means on all scales were compared between sexes using multivariate analysis of variance.

2. The second research question compared the correlations for men and women between Affiliation (PRF) and Social Closeness (DPQ) scores. It was predicted that women would have higher correlations.

3. The third research question compared the correlations for men and women between Achievement scores on the PRF and DPQ. It was predicted that men would have higher correlations.

4. The fourth research question compared the internal consistency (split-half reliability) for women and men on each of the following scales:

PRF	Achievement
	Affiliation
DPQ	Achievement
	Social Closeness

It was predicted that women would have higher reliability on affiliative scales and men would have higher reliability on achievement scales.

5. and 6. The fifth and sixth research questions required a multicorrelation matrix with selected scales from the PRF and DPQ. Interrelationships with scales which related to needs for achievement and affiliation were tested for differences in the correlations for women and men. The scales of interest were as follows:

5. Relationships with Achievement

PRF	Achievement	DPQ	Achievement
	Autonomy		Control
	Dominance		Social Potency
	Endurance		
	Social Recognition		

It was predicted that women would have higher correlations between Achievement scales and Autonomy, Dominance, and Social Potency. Men were expected to have higher correlations between Achievement scales and Control, Endurance, Exhibition, and Social Recognition.

6. Relationships with Affiliation

PRF	Affiliation	DPQ	Social Closeness
	Dominance		Control
	Endurance		Social Potency
	Exhibition		
	Nurturance		

It was predicted that women would have higher correlations between affiliation scales (Affiliation, Social Closeness) and Control, and Endurance. Men were expected to have higher correlations between affiliation scales and Dominance, Exhibition, and Social Potency. Women and men were expected to show equally strong correlations between affiliation scales and Nurturance.

CHAPTER III

RESULTS

Descriptive And Inferential Statistics

The subjects in this study were first compared against the test norms to determine if this population differed in significant ways from the average college student. Group means for each sex were compared with the means of the normative populations sampled by Jackson (1974) and Tellegen (1982). Figures 1 and 2 depict the standard scores for female and male samples plotted versus the norms. Jackson's population consisted of college students (N=1000) from 30 different American colleges and universities. It was therefore considered appropriate to treat the means as population parameters and employ the z-test. Tellegen's normative population consisted of 500 female and 300 male college students. For comparison with these means the t test was used.

Both the women and men of this study were significantly distinct ($p < .01$) from the same-sex normative population on six out of twelve of the scales studied, with higher scores on Achievement scales, Autonomy, and Endurance and significantly lower scores on Social Recognition. Compared to same-sex norms, men scored significantly lower on Social Closeness, while women scored lower on Affiliation ($p < .05$).

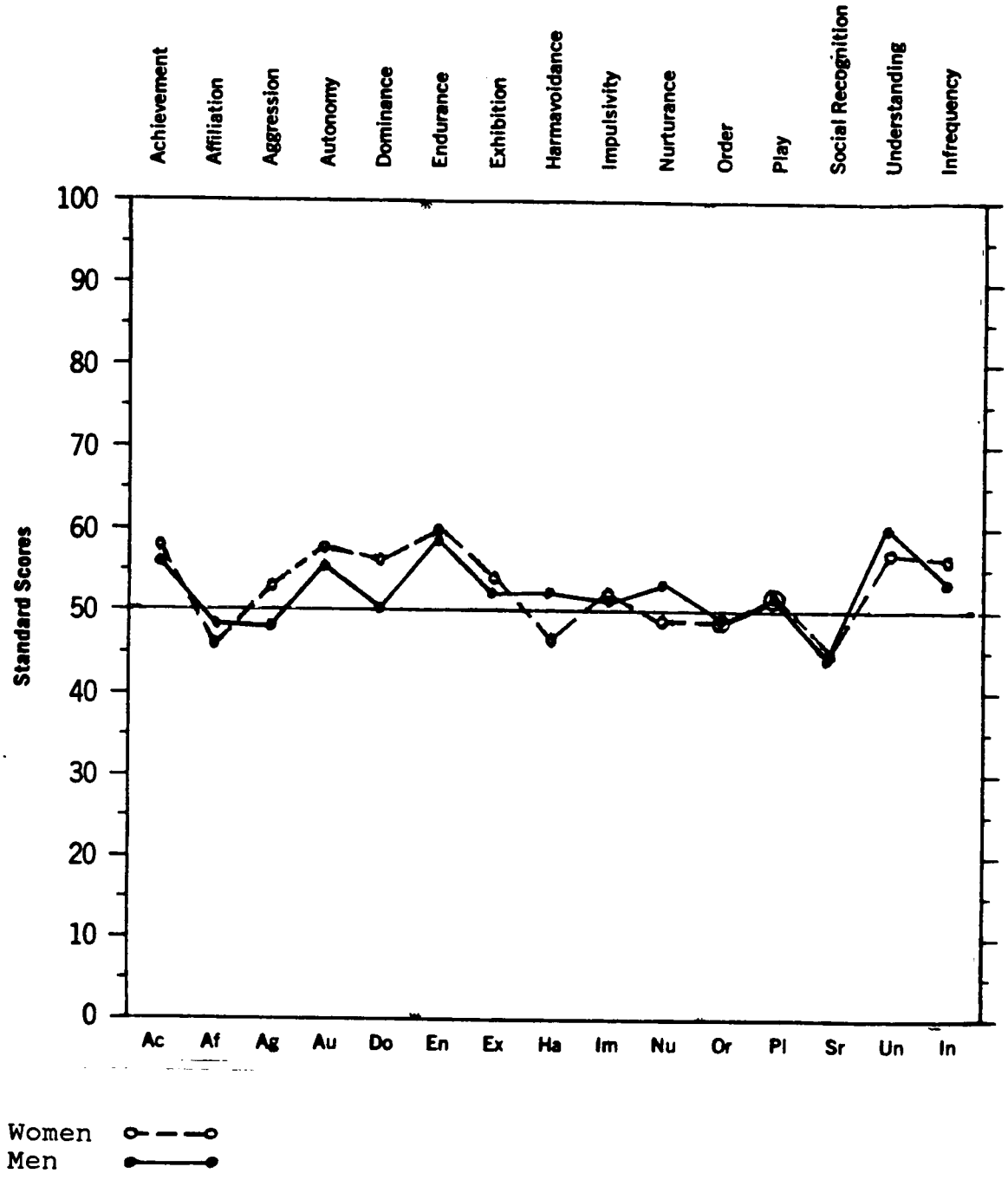

Figure 1. Comparison of standard scores for PRF scales between women and men Honors samples.

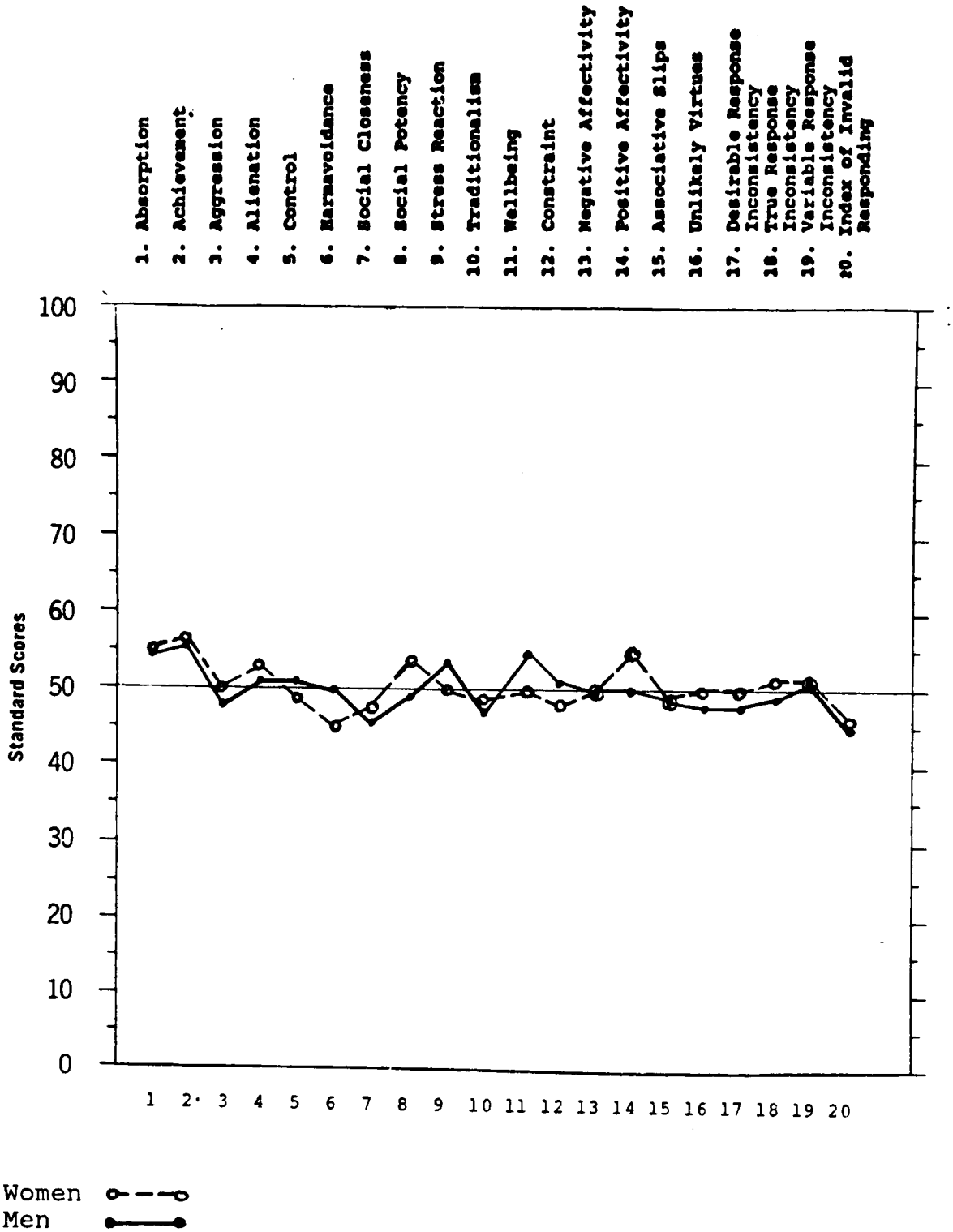

Figure 2. Comparison of standard scores for DPQ scales between women and men Honors samples.

In addition women scored higher than the female norms on three scales, Dominance, Social Potency, and Exhibition ($p < .01$). Male norms were higher than female norms in the present sample; thus the means for the women were at the same level as those of the men. The men did not exceed the male norms on these three scales. As will be noted later, these three scales cluster onto a common factor.

Women were at the 83rd percentile on Achievement and the 32nd percentile on Affiliation compared to PRF norms, and at the 71st percentile on Achievement and the 39th percentile on Social Closeness compared to DPQ norms. Men were at the 76th percentile on Achievement and the 49th percentile on Affiliation for PRF norms, and the 70th percentile on Achievement and the 34th percentile on Social Closeness for DPQ norms. Thus, both women and men were above the norm in achievement needs. Women were below average, whereas men were average or below average in affiliation needs, depending on the measure used.

A multivariate analysis of variance for the 12 combined scale scores was done to determine if the women in the sample differed from the men (see Table 3). Their scores were closely matched on all scales with no significant differences as measured by a Hotelling-Lawley Trace or Wilks' Criterion. As measured by the PRF and DPQ, the women and men of this study were highly similar in personality structure.

Table 3 Means and Standard Deviations For Female and Male Samples on PRF and DPQ Scales

	Women		Men	
Scales	X	S.D.	X	S.D.
Achievement (PRF)	14.6	2.7	14.6	3.0
Affiliation (PRF)	15.2	3.3	14.5	3.8
Autonomy (PRF)	8.9	3.7	9.8	3.2
Dominance (PRF)	11.3	4.2	11.4	4.8
Endurance (PRF)	3.5	3.2	13.3	3.7
Exhibition (PRF)	11.0	4.7	11.3	4.7
Nurturance (PRF)	15.0	3.5	13.5	3.2
Social Recognition (PRF)	9.2	3.9	9.4	4.0
Achievement (DPQ)	14.4	4.5	14.4	4.2
Control (DPQ)	13.9	5.9	14.4	6.0
Social Closeness (DPQ)	14.8	5.2	13.3	5.3
Social Potency (DPQ)	13.5	6.1	13.2	6.7

Note. No significant sex differences on means as determined by Hotelling-Lawley Trace and Wilks' Criterion.

The first hypothesis of the study was that women would show a closer relationship between their achievement and relationship needs than men - their concerns with striving for success would be possibly related to concerns with interpersonal relationships. It was predicted that this would be reflected in stronger correlations between achievement and affiliation scales for female than for male samples. In fact, an opposite relationship was observed. Both sexes had negative correlations between achievement and affiliation scales which were more strongly negative for women. However, only two of four correlations were significant for women (DPQ Social Closeness with PRF and DPQ Achievement; $p < .05$), and none were significant for men. Fisher's z' transformation was used to compare independent correlation coefficients by sex (Cohen & Cohen, 1983, p.54). No significant sex differences were observed between the obtained negative correlations. It appears that while women have a significantly negative relationship between achievement and relationship needs, they do not differ a great deal from men in this respect.

The second and third hypotheses predicted that affiliation would be a more organized trait for women, and achievement would be a more organized trait for men. Affiliation is more congruent with a feminine gender role, and achievement is more congruent with a masculine gender role. The study examined the convergent validity as a

function of correlation between the scales that measured the two traits on the two tests. There were no significant differences between the sexes for correlations between Affiliation (PRF) and Social Closeness (DPQ) scales, nor between the Achievement (PRF and DPQ) scales. The correlations for women and men were significant at the .0001 level. The tests demonstrate strong convergent validity for the two traits, independent of sex of subject.

The fourth hypothesis investigated the possibility of sex bias in the reliability of the measures. Affiliation scales tap stereotypical feminine qualities and achievement scales tap stereotypical masculine qualities. It therefore seemed possible that reliability of the measures might vary according to sex of the subject. Internal consistency (coefficient alpha and split-half reliability) was calculated on each scale (see Table 4). The test authors appear to have done a good job of test construction. There were no significant differences between women and men in alpha coefficients for the twelve scales used in the present study. Reliability coefficients ranged from .62 to .89.

The fifth and sixth hypotheses investigated relationships between achievement and affiliation and related scales on the two measures. There were interesting individual findings of gender differences in the intercorrelations. The correlation matrix is presented in Table 5 with a summary of significant findings in Table 6.

Table 4 Split-half Reliabilities of PRF and DPQ Scales

Scales	Women	Men
Achievement (PRF)	.64	.70
Affiliation (PRF)	.78	.78
Autonomy (PRF)	.74	.62
Dominance (PRF)	.79	.86
Endurance (PRF)	.70	.80
Exhibition (PRF)	.85	.85
Nurturance (PRF)	.78	.73
Social Recognition (PRF)	.80	.81
Achievement (DPQ)	.84	.80
Control (DPQ)	.89	.88
Social Closeness (DPQ)	.86	.88
Social Potency (DPQ)	.88	.89

Table 5 Intercorrelation Matrix for Selected PRF and DPQ Scales Among Honors Students

Scales	Ac	Af	Au	Do	En	Ex	Nu	Sor	Ach	Ctr	Sc	Sp
Achievement (PRF)		-20	23	12	73*	-04	08	-21	72*	12	-27*	15
Affiliation (PRF)	-06		-57*	11	13	08	58*	29*	-21	17	75*	08
Autonomy (PRF)	06	-37*		-24*	08	-25*	-40*	-41*	16	-34*	-67*	-12
Dominance (PRF)	38*	38*	11		07	57*	10	24	03	-02	18	84*
Endurance (PRF)	50*	-11	04	18		-14	29*	-21	57*	26*	-09	-04
Exhibition (PRF)	00	44*	00	47*	-22		02	39*	04	-34*	26*	67*
Nurturance (PRF)	25*	56*	-20	44*	19	23		20	16	12	49*	02
Social Recognition (PRF)	24*	10	-42*	21	-04	28*	-09		-15	-05	45*	27*
Achievement (DPQ)	77*	-04	-06	36*	64*	-13	18	32*		01	-26*	12
Control (DPQ)	19	-18	-22	-04	32*	-26*	-03	09	33*		15	-20
Social Closeness (DPQ)	-13	78*	-46*	24	-25*	39*	40*	20	-10	-19		14
Social Potency (DPQ)	17	48*	-09	73*	-05	62*	43*	32*	14	-07	33**	

Note: The Pearson product-moment intercorrelation matrix for women (n=66) appears above the diagonal; intercorrelations for men (n=65) appear below the diagonal. Decimals omitted.
* $p < .05$

Table 6 Summary of Significant Correlations Between Achievement and Affiliation and Related Scales

Scales	Women	Men
Achievement (PRF, DPQ)	Endurance (PRF, DPQ) -Social Closeness (PRF, DPQ)	Endurance (PRF, DPQ) Dominance (PRF, DPQ) Social Recognition (PRF, DPQ) Control (DPQ) Nurturance (PRF)
Affiliation (PRF) Social Closeness (DPQ)	-Autonomy (PRF, DPQ) Nurturance (PRF, DPQ) Exhibition (DPQ) Social Recognition (PRF, DPQ)	-Autonomy (PRF, DPQ) Nurturance (PRF, DPQ) Exhibition (PRF, DPQ) Dominance (PRF, DPQ) Social Potency (PRF) -Endurance (DPQ)

Note: Correlations with the achievement or affiliation scale(s) noted in parentheses were significant.
$p < .05$ for all correlations listed.

The results of Fisher's z' transformation to compare the correlations between sexes are presented in Table 7 with a summary of significant sex differences, including effect size, in Table 8.

The observed interrelationships suggested that women and men have some areas of similarity and some areas of difference. For both women and men, achievement needs were positively related to Endurance. This result has been replicated elsewhere (Lorr & Knight, 1987). The other significant intercorrelation with achievement for women was a negative relationship with Social Closeness (see p. 74). Men's achievement needs, in contrast to women, were significantly linked to several power-related dimensions: Dominance, Social Recognition, Control; and to Nurturance. Male achievement appears to be an arena to exert power and leadership, to influence and control others, and to receive recognition and status for accomplishments. The results appear to conform to the notion of male gender identity being developed around performance and mastery. Interestingly, male achievement was also related to a need to nurture, perhaps in the traditional sense of the male provider. Going to work may be the way that men see themselves as caring for their family. Nurturance was also significantly related to power needs (Dominance, Social Potency) for men, but not for women. Taking care of others

Table 7 Results of z-Tests for Sex Differences on Intercorrelations of PRF and DPQ Scales Among Honors Students

Scales	Ac	Af	Au	Do	En	Ex	Nu	Sor	Ach	Ctr	Sc	Sp
Achievement (PRF)		-80	97	-155	212*	-22	-98	-256*	-63	-40	-82	-12
Affiliation (PRF)			-145	-162	135	-219*	16	111	-97	198*	-40	-247*
Autonomy (PRF)				-198*	22	-142	-124	07	124	-73	-176	-17
Dominance (PRF)					-63	77	-208*	18	-194	11	-35	163
Endurance (PRF)						46	60	-97	-61	-37	92	06
Exhibition (PRF)							-120	69	96	-49	-82	48
Nurturance (PRF)								163	-12	84	63	-246*
Social Recognition (PRF)									-269*	-78	158	-31
Achievement (DPQ)										-186	-93	-11
Control (DPQ)											192	-74
Social Closeness (DPQ)												-113
Social Potency (DPQ)												

Note: Positive values, women > men; negative values, women < men. Decimals omitted. Fisher's z' transformation is described in Cohen and Cohen, 1983, p.53.
* $p < .05$

Table 8 Summary of z-Tests Indicating Significant Sex Differences on Intercorrelations of PRF and DPQ Scales, and Effect Size

Scales	Correlations Women r	Men r	z Test z	Effect Size q**
Intercorrelations stronger for women:				
Achievement (PRF) - Endurance (PRF)	73*	50*	212*	38
Affiliation (PRF) - Control (DPQ)	17	-18	198*	35
Intercorrelations stronger for men:				
Achievement (PRF) - Social Recog. (PRF)	-21	24*	-256*	46
Achievement (DPQ) - Social Recog. (PRF)	-15	32*	-269*	48
Affiliation (PRF) - Exhibition (PRF)	08	44*	-219*	39
Affiliation (PRF) - Social Potency (DPQ)	08	48*	-247*	40
Autonomy (PRF) - Dominance (PRF)	-24*	11	-198*	36
Nurturance (PRF) - Dominance (PRF)	10	44*	-208*	37
Nurturance (PRF) - Social Potency (DPQ)	02	43*	-246*	44

Note. Decimals omitted. Fisher's z' transformation is described in Cohen and Cohen, 1983, p.53.
** q >.30 = moderate effect size. q >.50 = large effect size (Cohen, 1969).
* $p < .05$

for men appears to be strongly linked with needs to lead and take charge, again in keeping with a stereotypical masculine role.

Comparing achievement intercorrelations between the sexes (Table 8), the following sex differences of moderate effect size (q >.30) were observed. Women significantly differed from men in the relationships between Achievement, Endurance, and Social Recognition. Women had a significantly stronger relationship between Achievement and Endurance, suggesting that achievement is more strongly associated with need for hard work and dedication for women than for men. This may reflect both social barriers as well as internal fears and doubts about achieving. It also suggests that high-aspiring women are willing to commit themselves to work diligently towards their goals. Men had a significantly more positive relationship between Achievement and Social Recognition, while this relationship was negative for women. It appears that status and acclaim may be more important motivating factors in male than female achievement. In addition, there was a moderate effect size for significant sex differences in the relationships between Nurturance and Dominance and Social Potency noted for men.

In the affiliation domain, areas of similarity between the sexes were observed in positive relationships with Nurturance and Exhibition, and negative relationships with Autonomy. Previous investigators have suggested that

nurturance is a related need to affiliation, and may share some conceptual overlap (Denmark, McCandless, & Tangri, 1978). The positive relationship with Exhibition suggests that both sexes associate interpersonal relationships with meeting needs for attention. It might be speculated that these high-aspiring students are accustomed to taking the center of the stage in social settings by virtue of their intelligence, verbal skills, talents, etc. This relationship was significantly stronger for men, reflecting a possible gender emphasis on performance and conquest. The negative relationship with Autonomy suggests that affiliation may involve a more dependent stance towards others, not necessarily in a negative sense. Interdependence may be a more accurate term. Relatedness then is viewed by both sexes as being inversely linked with the independence and self-sufficiency of an autonomous position.

In further significant correlations with affiliation, women showed positive relationships with Social Recognition, whereas men showed positive relationships with Dominance and Social Potency. It appears that affiliation for women is an arena to gain status and approval. For men, affiliation is similar to achievement as an arena for power and influence. In addition, male affiliative needs were negatively related to Endurance, suggesting that the interpersonal domain does not relate to hard work and perseverance for them.

Comparing affiliation intercorrelations between the sexes (Table 8), women had a significantly stronger relationship between Affiliation and Control. Although the correlations with Control were not significant for either sex, they were positive for women and negative for men. This again suggests some difference in the degree of planning, caution, or investment that goes into interpersonal activity. Men had significantly stronger relationships between Affiliation and Exhibition and Social Potency. It appears that men, more than women, use relationships to meet needs to be in charge and gain attention. As suggested earlier, relationships may serve them as a means to an end rather than an end in themselves. They are not so concerned with approval and recognition here as they are with being "top dog" and the focus of attention. The observed sex differences again had a moderate effect size ($q > .30$).

A more global overview of personality structure was developed by conducting rotated orthogonal factor analysis, performed separately by sex. Factor analysis (principal factoring without iteration) yielded a basically similar structure on three factors for each sex and for the whole subject pool (see Table 9). The three factors together accounted for 57.9% of the total variance (61.4%-women; 58.7%-men). For the total subject pool, Factor 1 included the two Achievement scales and Endurance, and could be

Table 9 Orthogonal Factor Analysis of Selected PRF and DPQ Scales Among Honors Students

Women				Men				
	Factor				Factor			
Scales	1	2	3	Scales	1	2	3	(4)
Achievement (PRF)	.91	.07	-.15	Achievement (PRF)	.91	.11	-.01	
Achievement (DPQ)	.72	.07	-.13	Achievement (DPQ)	.74	.23	-.07	
Endurance (PRF)	.85	-.11	.16	Endurance (PRF)	.74	-.07	-.03	
				Control (DPQ)	.39	-.24	-.02	
Dominance (PRF)	.12	.77	.14	Dominance (PRF)	.31	.79	.17	
Social Potency (DPQ)	.10	.95	.02	Social Potency (DPQ)	.06	.78	.27	
Exhibition (PRF)	-.10	.77	.09	Exhibition (PRF)	-.24	.70	.18	
Affiliation (PRF)	-.06	.02	.84	Affiliation (PRF)	-.11	.37	.83	
Social Closeness (DPQ)	-.22	.16	.85	Social Closeness (DPQ)	-.22	.23	.76	
Autonomy (PRF)	.15	-.16	-.73	Autonomy (PRF)	-.04	.25	-.61	
Nurturance (PRF)	.23	-.00	.63	Nurturance (PRF)	.26	.32	.59	
Social Recognition (PRF)	-.23	.34	.38					
Control (DPQ)	.17	-.26	.30					
				Social Recognition (PRF)				.88

termed an Achievement factor. Factor 2 consisted of Social Potency, Exhibition, and Dominance Scales, and might be termed a Power factor. Factor 3 consisted of Affiliation, Social Closeness, and Nurturance scales, and could be called an Affiliation factor. When the factor analysis was performed separately by sex, negative Autonomy also loaded on Factor 3 for both sexes.

The structure of the factors differed between sexes with respect to needs for Control and Social Recognition. Control loaded on the Achievement factor for men with a factor loading of .39. Social Recognition was on a separate fourth factor for men. Among women, Control loaded on the Affiliation factor with a factor loading of .30. In addition, for women Social Recognition also loaded on the Affiliation factor with a factor loading of .38. This reinforces the connection noted above between needs for Control and Social Recognition and affiliation in women and between Control and achievement needs in men. However, this observation must be qualified as the communality of these two variables was small. Communality for Control was .18 for women and .23 for men. Communality for Social Recognition for women was .31. The more important finding was the basic factor structure shared by both sexes as described above.

A discriminant analysis was done to determine if the three factors could accurately predict sex of the subjects.

Table 10 Classification Table for Discriminant Analysis

	Predicted Group	
Actual Group	Male	Female
Male	30 46%	35 54%
Female	27 41%	39 59%

The classification table is presented in Table 10. Classification was accurate for 59% of the cases for females, and for 46% for males. The overall correct classification score was 53%. Discriminant analysis based on these three factors then is not a reliable means for distinguishing between the sexes.[1] It appears that because the women and men of the sample were highly similar in their scale scores, they cannot be accurately discriminated on the basis of factor scores for Achievement, Power, or Affiliation despite significant differences in the interrelationships between the scales that make up the factors.

[1]In light of the possibility that the three factors based on only 12 scales were not sufficiently comprehensive, a second discriminant analysis was conducted when all PRF and DPQ scales were included in a principal component analysis. The second discriminant analysis based on six factors did not greatly increase predictability, with an overall correct classification score of 59% (61%-females, 57% males).

CHAPTER 1V

DISCUSSION

The purpose of this study was to examine the relationship between needs for achievement and affiliation in high-aspiring women and men. This relationship is important because previous research has postulated that women experience conflict between achievement and affiliation needs. Women may then sacrifice or avoid achieving at the level of which they are capable. Other research has noted positive correlations between high needs for achievement and affiliation in women (Romer, 1976; Sutherland, 1980; Veroff, 1983). This study sought to clarify the relationship between the two needs in a population expected to show high need for achievement.

The study also investigated the possibility of sex bias in the two instruments used to measure the two needs. Achievement scales describe stereotypically masculine concerns; affiliation scales describe stereotypically feminine concerns. To check for sex bias in the tests, convergent validity and reliability was measured separately for each sex on specific test scales.

Lastly, the study examined the relationship of achievement and affiliation scales to related scales to

investigate possible gender differences in the psychological implications of these two domains.

Characteristics of the Subjects

Comparison of the subjects against the test norms indicated that this was, as intended, an atypical population. These students from diverse honors groups were, as a whole, hard-working, persevering, aspiring, ambitious, and competitive. They valued qualities of leadership and independence. The label of high-aspiring for this group appears merited.

Rather than being "just another study of sex differences", this study takes on special significance due to the high need for achievement in both female and male subjects. More than the average woman, these women are concerned about issues of achievement and success in their lives. The feminist movement has opened new possibilities for women's attitudes towards their abilities and aspirations for the future. However, internal (as well as external) barriers to realizing these aspirations may exist. This study sought to clarify whether women's traditionally stronger affiliative needs are present in high-aspiring women and whether this could contribute to an internal barrier to pursuit of achievement goals.

Comparison with female norms revealed that in fact the women of this study were relatively less affiliative, and

also more autonomous, dominant, and persevering than the normative values for other women. These qualities may be requisite for pursuing achievement goals. It appears then that these high-aspiring women (and the men also) put less emphasis on relationships in the context of strong achievement needs.

Comparison of group means against the norms on other needs showed that both sexes have less than average investment in gaining recognition through social approval. Their actions are not likely to be governed by concern for reputation and "what other people will think of me". They appear to be characterized by independence and the capacity to pursue personal success in the face of negative social pressures. Again this may be an important requisite for achievement strivings.

Achievement and Affiliation in Honors Students

The data did not provide conclusive results on the relationship between achievement and affiliation needs. The observed negative relationship was significant on two out of four correlations for women only, with no significant differences from men. However, comparison with the norms supports the conclusion that these individuals place more emphasis on achievement needs and less emphasis on affiliative needs. The subjects of this study had relatively stronger achievement needs but their affiliative

needs were lower than those for the average college student. A "chicken-and-egg" dilemma arises as to which came first. Were these students primarily committed to their achievement (presumably academic) pursuits, giving social pursuits a lower priority? Or was lower affiliative drive a forerunner of their investment in solitary study?

This question was addressed in a study by Sedney and Turner (1975). They evaluated the causal ordering of needs for affiliation, achievement, and career-orientation. The postulated orderings were derived from two models. The compensatory model suggests that a failure in affiliative behavior or skill leads to high need to achieve, which then produces high career-orientation. The enrichment model suggests that high need for achievement leads to high career-orientation, which then decreases affiliative pursuits. Their results supported the enrichment model. It seems likely that the realistic constraints on time and energy posed by serious academic endeavor have resulted in attenuated affiliative activity.

It cannot be concluded that the observed relationships between achievement and affiliative needs are fixed and permanent. It is possible that these individuals have established a time-limited hierarchy of needs. During this time of intensive academic training and preparation for a career they may temporarily invest less energy in social or intimate relationships. Longitudinal data are required to

determine whether the hierarchy shifts later. In fact, longitudinal data on medical students has noted shifts in personality needs (Whittemore, Burstein, Loucks, & Schoenfeld, 1985). Between the first and third years of medical school, the students' needs for achievement, endurance, order, and understanding decreased, while needs for play, sentience, impulsivity, and aggression increased (measured on Jackson PRF).

The decreased investment in interpersonal areas could affect women and men differently. In the discussion of Chodorow's work (1978) presented earlier, it was noted that affiliation forms a central part of women's identity. Societal expectations are said to reinforce the notion of women as caretakers, peacemakers, intermediaries. It could then be more stressful for women to sacrifice or compromise their affiliative orientation in the pursuit of success. This does not imply that women are any less capable or motivated to pursue achievement goals (the data indicate otherwise). However the concomitant decrease in interpersonal investment may impact more strongly upon women and could be an additional source of role strain.

Validity and Reliability of the Measures

The measurement of achievement and affiliation needs on the PRF and DPQ was found to be equally valid and reliable for both sexes. Investigation of the convergent validity of

measures of achievement and affiliation yielded no sex differences. Likewise, reliability analysis of all scales used in the present study yielded no sex differences in internal consistency. Psychometric issues of possible sex differences in the validity and reliability of PRF and DPQ scales appear to be satisfactorily resolved. Conceptual issues of bias in the content of scale items will be addressed later.

Interrelationships with Other Scales

The women and men of this study were remarkably similar in their need scores and in factor structure. Discriminant analysis indicated no overall gender differences in the patterns of interrelationship between needs. However, there were interesting individual findings of gender differences in the correlations between scales.

Each of the significant gender differences in correlations noted in Table 8 (p. 81) was found to have a moderate effect size. This supports the premise that the observed differences were in fact a function of gender. Eagly (1987, p. 114-121) points out that the magnitude of sex differences needs to be evaluated on several criteria in addition to effect size, including comparison with other known findings, consideration of the research methodology used, and the utility of the behavior within the culture. To further validate these results, it would be beneficial to

gather confirmatory evidence from a variety of approaches and settings.

There are a variety of possible explanations for the observed differences in interrelationships with achievement and affiliation domains. Four explanations which will be discussed are 1) a "female deficit theory" that women are impoverished in the achievement domain, as it does not relate to much else in their life, 2) a "simplistic male theory" that a large constellation of needs for men can be encompassed by the two general dimensions of achievement and affiliation, whereas women require a more complex model, 3) a "psychological differences theory" that achievement and affiliation may have different psychological significance for women and men, and 4) a "content bias theory" that a conceptual bias exists in the measurement of achievement.

"Female Deficit Theory"

A "female deficit theory" might have been traditionally proposed upon observation of the insignificant relationship for women between important needs for achievement and affiliation and power needs. In the area of achievement, these women have demonstrated areas of strength and skill. Yet they do not connect achievement needs with needs for authority and power. In addition, they presented a negative relationship between needs for achievement and social recognition which was in significant contrast to the men. A

"female deficit theory" would suggest that the women were impoverished in the achievement domain.

These findings could also be interpreted as showing that women have deficient expectations rather than deficient motives. It may be that women anticipate less opportunities for power and authority and less recognition and reward for their accomplishments, and therefore do not connect these areas. Certainly the record of sex discriminatory practices on personal and bureaucratic levels would reinforce these beliefs.

An example of deficit theorizing occurred in the early research on achievement motivation. When it was observed that women did not respond to the experimental protocol and arousal conditions in a similar fashion to men, researchers concluded that they were deficient in achievement motivation. An equally appropriate conclusion might have been that the experimental conditions simply failed to engage women's concerns. An alternative explanation for the greater arousal of male subjects in 1953 might have been that they were made extremely anxious by the experimental task of telling stories about pictures. Possibly they were less able to handle a demand that did not match stereotypical sex-role behavior for males.

Difference is frequently viewed as deficit in our culture. A number of feminist theorists (Miller, 1978; Surrey, 1984; Surrey, Kaplan, & Jordan, 1982) have advocated

an alternative to the view of women's differences as deficits. Kaplan and Surrey (1984) describe a developmental model for women called self-in-relation which highlights the central role of relatedness in the female identity. Rather than associating this with the traditionally negative connotations of weakness and dependency, these writers suggest that women's skills in interpersonal affairs are an asset. They call for a paradigmatic shift to recognize the strengths of a female mode of interrelationship and significant connection with others. For example, in efforts to gain power within organizations, women have developed networking strategies where they build group strength through personal relationships. Women tend to utilize a style of collaboration and cooperation which could revolutionize business and politics if it were widely incorporated.

"Simplistic Male Theory"

A parallel explanation to the view of women as deficient in achievement areas is to view men as having a relatively simplistic motivational space, with motivational space for women being far more complex. The data suggest that a host of needs including power, leadership, status, competition, exhibition, and nurturance all tie in with two general dimensions of achievement and affiliation for men. There appears to be considerable overlap between achievement

and affiliation areas for men, as demonstrated by correlations between Achievement and Nurturance, and between Affiliation and Dominance and Social Potency. Female needs are not summarized or encompassed in the same way by these two dimensions. Thus men may be relatively simplistic in their motivational structure, whereas women may require a more complex model to elucidate their motivational constellations.

"Psychological Differences Theory"

A third possible explanation for the observed results is that achievement and affiliation may have different psychological significance, or be experienced in different constellations of overlapping needs for men and women. The lack of relationship between achievement and power and status and admiration for women could suggest that these needs are not important components of achievement for them. A good illustration is found in Secretary of Transportation Elizabeth Dole's comments on the media portrayal of her and husband Senate Majority Leader Robert Dole as "The Power Couple": "That's not why I put in twelve to fourteen hours a day. It's really to make a difference to people, not to amass power." Speaking of accomplishing her goals, Dole says: "When you reach the end of your life and look over what you've done, hopefully you can see a record where you've [...] done something positive, made use of your life

to serve others. That does involve utilizing power, but I think of it in a very different sense." (Bloch, 1985, pp. 14-16).

Women's achievement needs may be more linked with desires to serve others, or to feel that they have accomplished something which is personally meaningful. This is reminiscent of Gilligan's work (1982) on the different ethical priorities which guide women's decision-making processes. Women operated more from an ethic of care where the well-being of another took first priority in decisions, whereas men operated from an impartial standard of justice.

"Content Bias Theory"

The achievement scales of the PRF and DPQ were developed on a male model of achievement. High scorers are described as "striving, driving, ambitious, competitive" (PRF) and "works hard; likes long hours; puts work and accomplishment before many other things" (DPQ). The scale items may be written in terms that reflect male experience and concerns. The relatively fewer significant intercorrelations with achievement for women could suggest that the scales are not capturing achievement issues that are salient for women. For example, the scale items typically do not present collaborative or communal achievement themes which might be salient for women. The items do present achievement in terms of competition and

mastery, which recent research has shown to be more salient for male achievement (Spence & Helmreich, 1983). This relates again to the "psychological differences theory" (p. 98) that achievement may have different psychological significance for women and men.

The notion of achievement in our society is almost synonymous with competition. However, competition is considered to be more congruent with a male orientation than a female orientation (Deaux, 1977). Women may actually experience competition as somewhat more aversive compared to men, who may find it more enjoyable and more congruent with their expectations of themselves as males. It should be noted that early affiliation research was also based on arousal procedures stressing popularity and peer acceptance or rejection. These are essentially issues of social competition.

Sex-role prohibitions against competition may be reflected in a behavior called the "self-enhancing tendency". Sanford and Donovan in their book Women and Self-Esteem (1984) talk about the individual's self-concept as being made up of a collage of images and beliefs. They have observed that women tend to place their flaws at center and foreground of the collage, so that they constitute the core self-concept. Positive attributes are relegated to a peripheral role in beliefs about themselves. Men, on the other hand, tend to value highly areas in which they do well

and give them a prominent position in their self-concept, thus boosting self-esteem. Women's presentation of themselves with a focus on flaws and weaknesses may reflect a wish not to compete with others, or a willingness to be more candid in their self-disclosure without needing to be superior. They may minimize their needs to admired and respected for accomplishments out of a sense of modesty.

Each of the four explanations has some plausibility with the exception of the "female deficit theory", which has been outmoded as research has sought to understand and explain women's differences rather than dismissing women as deficient. It is apparent that achievement and affiliation are both highly complex domains which probably share in subtle ways some similarities. They may not be such disparate, non-overlapping areas as typically presented. For example, Dominance and Social Potency are clearly interpersonal dimensions relating to the need to control, lead, and influence others. However, they loaded on the same factor as Achievement. Achievement cannot be separated completely from affiliative or interpersonal issues. It has been stated that women may meet their achievement needs through affiliative activity (Stein & Bailey, 1973). It appears equally likely that men may meet affiliative needs through achievement activity. A good example was supplied by a male student who reported that on the "guys' night out" they decided to spend their time together playing pool for

money. Thus the men were meeting their affiliative needs, but in a competitive, achievement-oriented way. Certainly when men seek status, approval, and recognition through their achievement pursuits, this is an interpersonal concern. Achievement cannot be a pure instrumental-mastery task orientation. The motivating effects of praise and acclaim in setting and striving to reach goals are recognized. Men do not operate in a vacuum devoid of emotional influences. Emotional subjectivity in male achievement is demonstrated in the "good ole boy" system where favoritism towards friends strongly influences rewards, hirings, promotions, etc. Affiliation and achievement interact in complex ways for men as well as women.

Limitations of the Study

Limitations of the study encompass the measures, the subjects, and limits on generalization and prediction. Limitations caused by the measures stem from the use of self-report instruments rather than actual behavioral assessment. Some of the observed relationships may reflect the influence of response sets and/or the similarity of item content across measures.

Dated norms may be another problem. Norms for the PRF were obtained between the years 1965-1974. Subjects sampled in this study from 1984-1987 were compared against a

normative population sampled over a decade earlier. Values and attitudes have been changing in the intervening decade. It is more acceptable now for women to express qualities of ambition, competition, striving, leadership, authority, and power. The women of the study were highly similar to the men in their scale scores. While these women were strikingly different from the normative sample, it is not known just how different they are from contemporary peers. It is not clear whether the same degree of similarity in scale scores would be found between women and men in the larger population as well. The assumption of this study is that since the subjects were recruited from more rigorous academic tracks, they are in fact different from the broader population of college students. However, it also seems likely that the normative values have changed in the direction of greater similarity between the sexes.

Limitations due to subjects are created by the fairly small sample size and the geographical uniformity of the subject pool. A sample size of 65 requires a fairly large difference (.3) between correlation coefficients to reach the .05 level of significance. However increasing sample size produces very little decrease in the required difference until sample size reaches 120. Due to the minimal benefits of increasing subject number and the constraints of subject availability, the present sample size was considered satisfactory.

A geographic limitation of the study is that the majority of the subjects were in-state students residing in East Tennessee. A highly traditional Baptist culture is predominant in which stereotypical sex roles are maintained. The findings may be biased by traditional sex-role attitudes and values in women despite their non-traditional behavior, for example, in pursuing Honors Chemistry or Physics curriculum. An informal observation by one Honors adviser was that the academically elite women on campus continue to rank career and graduate education secondary to marriage plans.

A related issue is the assumption that the subjects are in fact high-aspiring. These students may simply be adept at taking tests and making good grades. They may be fulfilling their parents' aspirations rather than their own. It is not known how their high achievement needs will translate into vocational pursuits and preferences in the future. Linkages between motive and behavior remain unclear. The study does not attempt to make predictions about future behavior on the basis of correlational data.

Timing in the life cycle undoubtedly has an influence on the observed needs. These students are at a point in their life cycle where they are very focused on achieving to get their degree, then go on to graduate school or obtain a good job. As noted above with the enrichment hypothesis, their goals result in some compromise of their affiliative

needs. In the future when they have reached the desired goals, the constellation of motives may shift to greater emphasis on affiliative activity. Longitudinal data are needed to clarify these issues.

The high educational level of the sample (college-level) would suggest that gender differences would be minimized, as sex differences tend to decrease as education increases. The fact that some significant sex differences were observed suggests that perhaps even more pronounced differences would be obtained in the general population. Cross-sectional data would be needed to confirm this hypothesis, and to determine whether the observed relationships are unique to highly-educated or high-aspiring samples.

In summary, there may be limits on the generalizability of the results to all women and men, to all college students, or even to all high-aspiring students. Nonetheless the study provides valuable data on the interrelationships of achievement and affiliation and other needs. This study points out some limitations in present abilities to study high-aspiring women. In order to learn more about women who are breaking the barrier to female success in educational attainment, more appropriate models for understanding female experience are needed.

Implications and Summary

In summary, this study has demonstrated that there are areas of gender-commonality in achievement and affiliation needs. Discriminant analysis revealed no overall differences in the patterns of interrelationship between needs for women and men. However, there were interesting gender differences in a number of the individual correlations between scales. The results were discussed from the perspective of four possible explanations.

The findings support what other investigators have begun to suggest (Stewart & Chester, 1982). While women and men may share equally strong needs for achievement and affiliation, these needs are embedded in a rich context of other needs. The pattern of relationships may help to determine when and how the needs are expressed. To understand the enactment of an individual's needs they must be considered in relation to other needs which may modify the aims and value of the behavior, or its psychological significance.

The differences in interrelationships might help to explain the discrepancy in women's and men's attainments in educational and vocational spheres. The findings suggest that men may be more comfortable in being competitive, dominating, and manipulative in pursuing achievement needs. Perhaps as a function of sex-role socialization experiences, women may not be.

In the area of affiliation, men may be more likely than women to use relationships as an arena for achieving power (Stewart & Chester, 1982). This could act as a barrier for men in developing intimacy. Both achievement and affiliative domains were related to male needs to lead, to direct, and to be admired.

The women of the sample, like the men, linked achievement needs with decreased interpersonal focus. However, the women also linked needs for recognition and approval with interpersonal rather than achievement domains. This may put them in a bind of seeking affirmation in the affiliative domain, where they are less active, versus achieving, where they do not expect or seek affirmation.

The findings indicate that a number of needs cluster together for men relating to their achievement and affiliative needs. The "simplistic male theory" stated that male motivational structure may be readily encompassed by these two general dimensions, whereas women require a more complex elaboration of related needs. Women had relatively fewer interconnections with achievement and affiliative needs, other than the ones that they shared in common with men. Their achievement and affiliative needs are apparently distinct from power needs. The "psychological differences theory" suggests that women's reasons for achieving or engaging with others may be based in a different set of motives from men. This does not imply that women are bereft

or impoverished in these domains, contrary to the "female deficit theory". Rather it suggests that the complexity of women's experience may not be captured on these scales. As the early conceptualizations about achievement and affiliation were built around a male model, it is not surprising that a rich interrelated network of needs is observed for men but not for women. The "content bias theory" suggest that some aspects of women's experience may not have been fully explored because instrumentation to measure them is lacking.

The parting conclusion of this study is that the complexity of achievement and affiliative needs in women is not adequately encompassed by present theory and instrumentation. Further research is needed to continue development of models relevant to the experience of women and to clarify some of the theories offered in this discussion. Psychology is past the point of concluding that women are deficient or impoverished in achievement needs because they do not fit as neatly with male models. Hopefully in the next five or ten years new paradigms can be introduced to clarify the issues which are salient for women. At that time perhaps the rich interrelationships for women as well as for men could be more adequately described using terms other than power and competition.

BIBLIOGRAPHY

BIBLIOGRAPHY

Alper, T. (1974). Achievement motivation in college women: A now you see it now you don't phenomena. American Psychologist, 29, 194-203.

Anastasi, A. (1972). [Review of Jackson's PRF]. In O.K.Buros (Ed.), Seventh Mental Measurement Yearbook Vol.1. (pp. 123-124). Highland Park, NJ: Gryphon Press.

Atkinson, J. (Ed.). (1966). Motives in Fantasy, Action, and Society. Princeton, NJ: Van Nostrand.

Atkinson, J., Heyns, R., & Veroff, J. (1954). The effects of experimental arousal of the affiliation motive on thematic apperception. Journal of Abnormal and Social Psychology, 49, 405-410.

Atkinson, J., & Litwin, G. (1960). Achievement motivation and test anxiety conceived as motive to approach success and motive to avoid failure. Journal of Abnormal and Social Psychology, 60, 52-63.

Atkinson, J., & O'Conner, P. (1966). Neglected factors in studies of achievement-oriented performance: Social approval as an incentive and performance decrement. In J. Atkinson & J. Feather (Eds.), A theory of achievement motivation. NY: John Wiley.

Atkinson, J., & Raphelson, A. (1956). Individual differences in motivation and behavior in particular situations. Journal of Personality, 24, 349-363.

Atkinson, J., & Reitman, W. (1958). Performance as a function of motive strength and expectancy of goal attainment. In J. Atkinson (Ed.), Motives in Fantasy, Action, and Society (pp. 278-287). Princeton, NJ: D. Van Nostrand.

Bakan, D. (1966). The duality of human existence. Chicago: Rand McNally.

Bandura, A. (1977). Social learning theory. Englewood Cliffs, N.J.: Prentice-Hall.

Bandura, A., & Walters, R. (1963). Social Learning and Personality Development. NY: Holt, Rinehart & Winston.

Bar-Tal, D., & Frieze, I. (1976). Attributions for success and failure for actors and observers. Journal of Research in Personality, 10, 256-265.

Bem, S. (1974). The measurement of psychological androgryny. Journal of Consulting and Clinical Psychology, 42, 155-162.

Bem, S. (1981). Gender schema theory: A cognitive account of sex typing. Psychology Review, 88, 354-364.

Bloch, S. (1985). At the wheel in Washington: Elizabeth Hanford Dole. Duke Alumni magazine, 72, 14-16.

Block, J. (1973). Conceptions of sex-roles: some cross-cultural and longitudinal perspectives. American Psychologist, 28, 512-526.

Block, J. (1978). Another look at sex differentiation in the socialization behaviors of mothers and fathers. In J. Sherman & F. Denmark (Eds.), Psychology of Women: Future Directions of Research. NY: Psychological Dimensions.

Broverman, I., Broverman, D., Clarkson, F., Rosencrantz, P., & Vogel, S. (1970). Sex-role stereotypes and clinical judgments of mental health. Journal of Consulting and Clinical Psychology, 34, 1-7.

Byrne, D. (1961). Anxiety and the experimental arousal of affiliation need. Journal of Abnormal and Social Psychology, 63, 660-662.

Canavan-Gumpert, D., Garner, K., & Gumpert, P. (1977). Achievement Motivation and Achievement Conflict in Women. In D. Canavan-Gumpert, K. Garner, & P. Gumpert (Eds.), The Success-Fearing Personality (pp.117-133). Lexington, MA: D.C. Heath & Co.

Carlson, R. (1971). Sex differences in ego functioning. Journal of Consulting and Clinical Psychology, 37, 267-277.

Chafe, W. (1976). Looking backward in order to look forward: Women, work and social values in America. In J. Kreps (Ed.), Women and the American economy: a look to the 1980's. Englewood Cliffs, N.J.: Prentice-Hall.

Chafetz, J. (1974). Masculine/Feminine or Human? Itasca, IL: Peacock.

Chodorow, N. (1978). The Reproduction of Mothering: Psychoanalysis and the Sociology of Gender. Berkeley: University of California Press.

Clarke, D. (1973). Measures of achievement and affiliation motivation. Review of Educational Research, 43, 41-51.

Cohen, J. (1969). Statistical Power Analysis for the Behavioral Sciences. NY: Academic Press.

Cohen, J. & Cohen, P. (1983). Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences. Hillsdale, NJ: Lawrence Erlbaum.

Constantinople, A. (1973). Masculinity-femininity: an exception to the famous dictum? Psychological Bulletin, 80, 389-407.

Crandall, V. (1963). Achievement. In H. Stevenson (Ed.), Child Psychology: The 62nd Yearbook of the National Society for the Study of Education. Part I. Chicago: University of Chicago Press.

Deaux, K. (1976). Sex: A perspective on the attribution process. In J. Harvey, W. Ickes, & R. Kidd (Eds.), New directions in attribution research (Vol. 1). NJ: Lawrence Erlbaum.

Deaux, K. (1985). Sex and gender. Annual Review of Psychology, 36, 49-81.

Deaux, K., & Emswiller, T. (1974). Explanations of successful performance on sex-linked tasks: What is skill for the male is luck for the female. Journal of Personality and Social Psychology, 29, 80-84.

deCharms, R. (1957). Affiliation motivation and productivity in small groups. Journal of Abnormal and Social Psychology, 55, 222-226.

Denmark, F., McCandless, S., & Tangri, S. (1978). Affiliation, Achievement, and Power: A new look. In J. Sherman & F. Denmark (Eds.), The Psychology of Women: Future Directions in Research (pp.395-460). NY: Psychological Dimensions.

Dew, K., & Galassi, J. (1983). Mathematics anxiety: Some basic issues. Journal of Counseling Psychology, 30, 443-446.

Dinnerstein, D. (1976). The Mermaid and the Minotaur. NY: Harper Colophon Books.

Eagly, A. (1987). Sex Differences in Social Behavior: A Social-Role Interpretation. Hillsdale, NJ: Lawrence Erlbaum.

Eccles, J. (1983). Expectancies, Values, and Academic Behaviors. In J. Spence (Ed.), Achievement and Achievement Motives. San Francisco: W.H. Freeman.

Entwisle, D. (1972). To dispel fantasies about fantasy-based measures of achievement motivation. Psychological Bulletin, 77, 377-391.

Erikson, E. (1964). Inner and outer space: reflections on womanhood. Daedalus, 93, 1-25.

Exline, R. (1960). Effects of sex, norms, and affiliation motivation upon accuracy of perception of interpersonal preference. Journal of Personality, 28, 397-412.

Exline, R. (1962). Need affiliation and initial communication behavior in problem-solving groups characterized by low interpersonal visibility. Psychological Reports, 10, 79-89.

Fast, I. (1979). Developments in gender identity: gender differentiation in girls. International Journal of Psycho-Analysis, 60, 443-453.

Field, W. (1951). The effects of thematic apperception upon certain experimentally aroused needs. Unpublished doctoral dissertation, University of Maryland.

French, E. (1955). Some correlates of achievement motivation. Journal of Experimental Psychology, 50, 232-236.

French, E. (1956). Motivation as a variable in work partner selection. Journal of Abnormal and Social Psychology, 53, 96-99.

French, E., & Lesser, G. (1964). Some characteristics of the achievement motive in women. Journal of Abnormal and Social Psychology, 68, 119-128.

Frieze, I. (1975). Women's expectations for and causal attributions of success and failure. In Mednick, M., Tangri,, S., & Hoffman, L. (Eds.), Women: Social Psychological Perspectives on Achievement. NY: Holt, Rinehart & Winston.

Frieze, I., Whitley, B., Hanusa, B., & McHugh, M. (1982). Assessing the theoretical models for sex differences in causal attributions for success and failure. Sex Roles, 8, 333-343.

Gallimore, R. (1981). Affiliation, Social Context, Industriousness, and Achievement. In R.H. Munroe, R.L. Munroe, & B. Whiting (Eds.), Handbook of Cross-Cultural Human Development (pp. 689-716). NY: Garland.

Gilligan, C. (1982). In a different voice. Cambridge, MA: Harvard University Press.

Grant, D. (1982). Sex, reading ability, and visual half-field test-retest reliability. Perceptual & Motor Skills, 54 (1), 49-50.

Gutman, D. (1965). Women and the conception of ego strength. Merrill-Palmer Quarterly, 11, 229-240.

Heckhausen, H. (1967). The Anatomy of Achievement Motivation. NY: Academic Press.

Heilbrun, A. (1981). Human sex-role behavior. NY: Pergamon Press.

Heyns, R., Veroff, J., & Atkinson, J. (1958). A scoring manual for the affiliation motive. In J. Atkinson (Ed.), Motives in fantasy, action, and society. Princeton, N.J.: D. Van Nostrand Co.

Hoffman, L. (1972). Early childhood experiences and women's achievement motive. Journal of Social Issues, 28, 129-155.

Hoffman, L. (1977). Fear of success in 1965 and 1974: A follow-up study. Journal of Consulting and Clinical Psychology, 45, 310-321.

Horner, M. (1968). Sex differences in achievement motivation and performance in competitive and non-competitive situations. Unpublished doctoral dissertation, University of Michigan, Ann Arbor, MI.

Jackson, D. (1970). A sequential system for personality scale development. In C. Spielberger (Ed.), Current Topics in Clinical and Community Psychology, 2, 61-96. NY: Academic.

Jackson, D. (1974). Personality Research Form: Manual. Goshen, NY: Research Psychologists Press, Inc.

Jackson, D., Ahmed, S., & Heapy, N. (1976). Is achievement a unitary construct? Journal of Research in Personality, 10, 1-21.

Kagan, J., & Moss, H. (1962). Birth to Maturity. NY: Wiley.

Kaplan, A., & Surrey, J. (1984). The relational self in women: developmental theory and public policy. In L. Walker (Ed.), Women and Mental Health Policy (pp. 79-94). Beverly Hills: Sage.

Karabenick, S. (1977). Fear of success, achievement and affiliation dispositions, and the performance of men and women under individual and competitive conditions. Journal of Personality, 45, 117-149.

Klinger, E. (1966). Fantasy need achievement as a motivational construct. Psychological Bulletin, 66, 291-308.

Kohlberg, L. (1966). A cognitive-developmental analysis of children's sex-role concepts and attitudes. In E. Maccoby (Ed.), The development of sex differences. Stanford, CA: Stanford University Press.

Kohn, M. (1969). Class and Conformity. NY: Dorsey.

Kreps, J., & Leaper, R. (1976). Home work, market work and the allocation of time. In J. Kreps (Ed.), Women and the American economy: a look to the 1980's. Englewood Cliffs, N.J.: Prentice-Hall.

Lesser, G., Krawitz, R., & Packard, R. (1963). Experimental arousal of achievement motivation in adolescent girls. Journal of abnormal and social psychology, 66, 59-66.

Levine, R., & Gillman, M. (1982). Individual differences or sex differences in achievement attributions? Sex Roles, 8, 455-465.

Lipman-Blumen, J., Leavitt, H., Patterson, K., Bies, R., & Handley-Isaksen, A. (1980). A Model of Direct and Relational Achieving Styles. In L. Fyans (Ed.), Achievement motivation: Recent trends in theory and research (pp. 135-168). NY: Plenum.

Loucks, S., Glass, S., & Burstein, A. (1987). A comparison of the DPQ and the PRF: a construct validation study. Manuscript submitted for publication.

Lubinski, D., Tellegen, A., & Butcher, J. (1983). Masculinity, femininity, and androgyny viewed and assessed as distinct concepts. Journal of Personality and Social Psychology, 44, 428-39.

McAdams, D. (1979). Validation of a thematic coding system for the intimacy motive. Unpublished doctoral dissertation, Harvard University.

McClelland, D., Atkinson, J., Clark, R., & Lowell, E. (1953). The achievement motive. NY: Appleton-Century-Crofts.

McFarland, K., & Anderson, J. (1980). Factor stability of the Edinburgh Handedness Inventory as a function of test-retest performance, age and sex. British Journal of Psychology, 71 (1), 135-142.

McHugh, M., Frieze, I., & Hanusa, B. (1982). Attributions and sex differences in achievement: problems and new perspectives. Sex Roles, 8, 467-479.

McKeachie, W., Lin, Y., Milholland, J., & Isaacson, R. (1966). Student affiliation motives, teacher warmth, and academic achievement. Journal of Personality and Social Psychology, 4, 457-461.

Magnusson, D., & Endler, N. (Eds.).(1977). Personality at the crossroads: Current issues in interactional psychology. Hillsdale, N.J.: Lawrence Erlbaum.

Mednick, M., & Weissman, H. (1975). The psychology of women-Selected topics. Annual Review of Psychology, 26, 1-18.

Mischel, W. (1968). Personality and assessment. NY: John Wiley & Sons.

Mischel, W. (1977). On the future of personality measurement. American Psychologist, 32, 246-254.

Monahan, L., Kuhn, D., & Shover, P. (1974). Intrapsychic versus cultural explanations of the "fear of success" motive. Journal of Personality and Social Psychology, 29, 60-64.

Morrison, H. (1954). The validity and behavioral manifestations of female need for achievement. Unpublished master's thesis, Wesleyan University.

Moss, H. (1967). Sex, age and state as determinants of mother-infant interaction. Merrill-Palmer Quarterly, 13, 19-36.

Mueller, S. (1975). Motivation and reactions to the work role among female performers and music teachers. Unpublished doctoral dissertation, University of Michigan, Ann Arbor.

Murray, H. (1938). Explorations in personality. Cambridge, MA: Harvard University Press.

National Advisory Council on Women's Educational Programs (1981). Washington, D.C.

Nunnally, J. (1978). Psychometric theory. NY: McGraw-Hill.

O'Leary, V. (1977). Toward Understanding Women. Monterey, CA: Brooks/Cole.

Paludi, M., & Fankell-Hauser, J. (1986). An idiographic approach to the study of women's achievement striving. Psychology of Women Quarterly, 10, 89-100.

Rapaport, I. (1977). An investigation of the interactive effects of need achievement and need affiliation and task cues as an interpretation of Horner's motive to avoid success construct. Unpublished doctoral dissertation, Ohio University.

Ratliff, E. (1980). A follow-up study on achievement-related motivation and behavior. Unpublished doctoral dissertation, University of Michigan, Ann Arbor, MI.

Robertshaw, D. (1983). Sex and ethnic differences in aptitude indicator measurement models (Doctoral dissertation, Virginia Polytechnic Institute). Dissertation Abstracts International, 43, 3298A.

Romer, N. (1974). Sex differences in the development of achievement-related motives, sex role identity, and performance. Unpublished doctoral dissertation, University of Michigan.

Rosenfeld, H., & Franklin, S. (1966). Arousal of need for affiliation in women. Journal of Personality and Social Psychology, 3, 245-248.

Sarason, I. & Smith, R. (1971). Personality. Annual Review of Psychology, 22, 393-446.

Schrank, H., & Riley, J. (1976). Women in work organizations. In J. Kreps (Ed.), Women and the American economy: a look to the 1980's. Englewood Cliffs, N.J.: Prentice-Hall.

Sherman, J. (1978). Sex-Related Cognitive Differences. Springfield, IL: Charles C. Thomas.

Shipley, T., & Veroff, J. (1952). A projective measure of need for affiliation. Journal of Experimental Psychology, 43, 349-356.

Sohn, D. (1982). Sex differences in achievement self-attributions: an effect-size analysis. Sex Roles, 8, 345-357.

Solomon, D. (1968). Psychosocial deprivation and achievement dispositions. In Perspective on human deprivation. Bethesda, MD: National Institute of Child Health and Human Development.

Sorrentino, R. (1973). An extension of theory of achievement motivation to the study of emergent leadership. Journal of Personality and Social Psychology, 26, 356-368.

Spence, J. (Ed.). (1983). Achievement and Achievement Motives. San Francisco: W.H. Freeman.

Spence, J., Deaux, K., & Helmreich, R. (1985). Sex roles in contemporary American society. In G. Lindzey & E. Aronson (Eds.), Handbook of Social Psychology: Vol. II. NY: Random House.

Spence, J., & Helmreich, R. (1978). Masculinity & Femininity: Their psychological dimensions, correlates, and antecedents. Austin: University of Texas Press.

Spence, J., & Helmreich, R. (1983). Achievement-related motives and behaviors. In J. Spence (Ed.), Achievement and Achievement Motives. San Francisco: W.H. Freeman.

Spence, J., Helmreich, R., and Stapp, J. (1974). The Personal Attributes Questionnaire: a measure of sex-role stereotypes and masculinity-femininity. JSAS Catalog of selected documents in Psychology, 4, 43.

Spenner, K., & Featherman, D. (1978). Achievement ambitions. Annual Review of Sociology, 4, 373-420.

Stein, A., & Bailey, M. (1973). The socialization of achievement motivation in females. Psychological Bulletin, 80, 345-366.

Stewart, A., & Chester, N. (1982). Sex differences in human social motives: Achievement, affiliation, and power. In A. Stewart (Ed.), Motivation and Society (pp. 172-218). San Francisco: Jossey Bass.

Sundheim, B. (1962). The relationships among n achievement, n affiliation, sex-role concepts, academic grades, and curricular choice. Unpublished doctoral dissertation, Columbia University, New York.

Surrey, J. (1984). The "self-in-relation": A theory of women's development. Work in Progress Papers (84-02). Wellesley, MA: Stone Center.

Surrey, J., Kaplan, A., & Jordan, J. (1982). Women and empathy. Work in Progress Papers (82-02). Wellesley, MA: Stone Center.

Sutherland (Ratliff), E. (1980). A follow-up study on achievement-related motivation and behavior. Unpublished doctoral dissertation, University of Michigan.

Sutherland, E. & Veroff, J. (1985). Achievement motivation and sex roles. In V. O'Leary, R. Unger, & B. Wallston (Eds.), Women, Gender, and Social Psychology (pp. 101-129). Hillsdale, NJ: Lawrence Erlbaum Associates.

Taylor, M., & Hall, J. (1982). Psychological androgyny: Theories, methods, and conclusions. Psychological Bulletin, 92, 347-66.

Tellegen, A. (Ed.). (1982). Brief manual for the differential personality questionnaire. (Available from Auke Tellegen, University of Minnesota).

Terman, L. & Oden, M. (1947). The Gifted Child Grows Up. Stanford: Stanford University Press.

Touhey, J. (1974). Effects of additional women professionals on ratings of occupational prestige and desirability. Journal of Personality and Social Psychology, 29, 86-89.

Travis, C., Burnett-Doering, J., & Reid, P. (1982). The impact of sex, achievement domain, and conceptual orientation on causal attributions. Sex Roles, 8, 443-454.

Tresemer, D. (1976). The cumulative record of research on "fear of success". Sex Roles, 2, 217-236.

Tresemer, D. (1977). Fear of success. NY: Plenum Press.

Tresemer, D., and Pleck, J. (1974). Sex-role boundaries and resistance to sex-role change. Women's Studies, 2, 61-78.

U.S. Bureau of the Census. (1986). Statistical Abstract of the U.S.: 1987 (107th Ed.). Washington, DC.

U.S. Bureau of Labor Statistics. (1985). Handbook of Labor Statistics. Washington, DC: U.S. Department of Labor.

Veroff, J. (1950). A projective measure of achievement motivation in adolescent males and females. Unpublished honors thesis, Wesleyan University.

Veroff, J. (1969). Social comparison and the development of achievement motivation. In C. Smith (Ed.), Achievement-related motives in children. NY: Russell Sage.

Veroff, J. (1977). Process vs. impact in men's and women's achievement motivation. Psychology of Women Quarterly, 1, 283-293.

Veroff, J. (1982). Assertive motivation: Achievement vs. power. In A. Stewart (Ed.), Motivation and society. San Francisco: Jossey-Bass.

Veroff, J., Wilcox, S., & Atkinson, J. (1953). The achievement motive in high school and college age women. Journal of Abnormal and Social Psychology, 48, 108-119.

Wallston, B. & Grady, K. (1985). Integrating the feminist critique and the crisis in social psychology: another look at research methods. In V. O'Leary, R. Unger, & B. Wallston (Eds.), Women, Gender, and Social Psychology (pp. 7-35). Hillsdale, NJ: Lawrence Erlbaum Associates.

Weiner, B. (1972). Theories of motivation: From mechanism to cognition. Chicago: Markham.

Weiner, B. (1974). Achievement motivation and attribution theory. Morristown, NJ: General Learning Press.

Weiner, B., Frieze, I., Kukla, A., Reed, L., Rest, S., & Rosenbaum, R. (1971). Perceiving the causes of success and failure. NY: General Learning Press.

Weitzman, L., Eifler, D., Hokada, E., & Ross, C. (1972). Sex-role socialization in picture books for preschool children. American Journal of Sociology, 77, 1125-1149.

Whittimore, P., Burstein, A., Loucks, S., & Schoenfeld, L. (1985). A longitudinal study of personality changes in medical students. Journal of Medical Education, 60, 404-405.

Witkin, H. (1974). Social conformity and psychological differentiation. International Journal of Psychology, 9, 583-591.

Zuckerman, M. (1979). Attribution of success and failure revisited, or: The motivational bias is alive and well in attribution theory. Journal of Personality, 47, 245-287.

APPENDIX

Table 11 PRF Intercorrelations for Female (n=66) and Male (n=65) Honors Students

	PRF Scales														
PRF Scales	Ac	Af	Ag	Au	Do	En	Ex	Hav	Im	Nu	Or	Pl	Sor	Un	In
Achievement		-20*	01	23	12	73**	-04	08	-22	08	12	-55**	-21	48**	-12
Affiliation	-06		23	-57**	11	13	08	14	-07	58**	13	32**	29*	-30*	-05
Aggression	-12	-06		-02	51**	-23	41**	-09	26*	-26*	-03	05	29*	-09	-10
Autonomy	06	-37**	19		-24*	08	-25*	-20	13	-40**	-37**	-12	-41**	24	17
Dominance	38**	38**	32**	12		07	57**	24*	06	10	09	-04	24	-32**	-05
Endurance	50**	-11	-24	04	19		-14	05	-38**	29*	23	-36**	-21	27*	-11
Exhibition	00	44**	25*	00	47**	-22		-19	42**	02	02	28*	39**	-22	-14
Harmavoidance	15	-11	-09	-27*	-03	08	-16		-45**	02	21	-11	08	-23	10
Impulsivity	-32**	23	28*	18	08	-40**	38**	-46**		-01	-37**	42**	18	-02	14
Nurturance	26*	56**	-22	-20	44**	19	23	-08	06		13	14	20	-02	-11
Order	28*	01	-04	-20	19	25*	-08	32**	-55**	23		-05	03	-05	-41
Play	-41**	36**	32*	02	16	-29*	57**	-39**	40**	02	-23**		33**	-42**	03
Social Recognition	24	10	18	-42**	21	-04	28*	21	-14	-09	19	-04		-25*	-11
Understanding	44**	-06	-17	12	17	39**	-01	16	-30*	12	27*	-38**	06		-07
Infrequency	-12	-16	27*	22	06	-10	98	09	19	-16	-20	01	-06	00	

Note. Intercorrelations for women appear above the diagonal; intercorrelations for men appear below the diagonal. Decimals omitted.
*p <.05. **p <.01.

Table 12 PRF-DPQ Intercorrelations for Female Honors Students (n=66)

	DPQ Scales																		
PRF Scales	Abs	Ach	Agr	Aln	Ctr	Hv	Sc	Sp	Sr	Trd	Wb	Cst	Na	Pa	ASLP	UNVT	DRIN	TRIN	VRIN	INVAL
Achievement	14	72**	-09	-22	12	08	-27*	15	-04	02	05	20	-01	38**	03	25*	06	-13	09	20
Affiliation	-15	-21	-26*	02	17	28*	75**	08	-24	45**	62**	39**	-29*	36**	-06	09	24*	45**	-10	-08
Aggression	02	-07	76**	34**	-19	-20	-05	46**	45**	-10	-32**	-30*	62**	01	23	-32**	-21	-18	33**	30*
Autonomy	44**	16	-03	01	-34**	-21	-67**	-12	04	-47**	-16	-46**	19	-12	13	14	17	-24*	-08	-02
Dominance	-10	03	40**	34**	-02	22	18	84**	04	19	12	10	34**	43**	12	02	04	-02	06	12
Endurance	12	57**	-30*	-19	26*	10	-09	-04	-30*	24	30*	38**	-21	38**	00	33**	26*	01	-10	01
Exhibition	10	04	46**	31*	-34**	-07	26*	67**	05	-03	10	-27*	32**	43**	26*	-07	-09	10	28*	29
Harmavoidance	-33**	02	-13	-06	45**	76**	12	17	07	17	04	61**	-11	03	-22	06	02	15	-14	-15
Impulsivity	27*	-11	28*	17	-81**	-27*	01	18	22	-25*	03	-70**	30*	13	33**	-12	-17	-03	12	22
Nurturance	14	16	-39**	-02	12	04	49**	02	-20	47**	43**	36**	-18	43**	03	22	15	33**	-36**	-22
Order	-12	14	-06	-12	52**	06	20	06	-24*	25*	20	42**	-22	19	-16	14	20	-11	-12	-12
Play	03	-31*	11	27*	-32**	-09	30*	05	-06	14	25*	-19	09	09	08	-07	01	25*	00	-01
Social Recognition	04	-15	25*	29*	-05	14	45**	27*	14	18	04	08	20	23	-03	-16	-20	17	20	12
Understanding	31*	32**	-13	-26*	00	-23	-22	-25*	07	-30*	-15	-16	-06	-04	-09	17	-03	-18	03	08
Infrequency	-10	-06	-02	-14	-18	14	-09	-04	09	03	-02	-05	00	-06	15	-02	-14	20	-05	06

*p <.05. **p <.01.

Table 13 PRF-DPQ Intercorrelations for Male Honors Students (n=65)

	DPQ Scales																		
PRF Scales	Abs	Ach	Agr	Aln	Ctr	Hv	Sc	Sp	Sr	Trd	Wb	Cst	Na	Pa	ASLP	UNVT	DRIN	TRIN	VRIN	INVAL
Achievement	19	77**	-22	08	19	-02	-13	17	-04	15	10	26*	05	37**	11	28*	05	11	-06	10
Affiliation	26*	-04	-08	-18	-18	03	78**	48**	-35**	-04	58**	-15	-28*	62**	-11	04	29*	15	-01	-13
Aggression	-08	-13	79**	31*	-23	-28*	08	20	36**	-05	-19	-28*	50**	04	19	-05	-29*	-02	08	11
Autonomy	-12	-06	14	12	-22	-37**	-46**	-09	-08	-38**	-08	-38**	09	-17	00	14	08	01	-01	06
Dominance	25*	36*	21	04	-04	-11	24	73**	-29*	07	43	-08	02	73**	09	26*	23	07	04	09
Endurance	21	64**	-18	03	32**	17	-25*	-05	-17	20	-04	36**	-04	17	-04	32**	22	10	-26*	-03
Exhibition	29*	-13	24	-01	-26*	-17	39**	62**	-17	-23	47**	-38**	-01	56**	10	-02	06	-04	06	-02
Harmavoidance	-23	24	-19	-01	38**	71**	07	05	09	19	-14	57**	-12	-07	-01	-03	-15	03	-04	-22
Impulsivity	10	-39**	34**	05	-82**	-44**	26*	15	08	-31*	21	-75**	19	22	06	-29*	-02	-03	10	01
Nurturance	32**	18	-18	00	-03	07	40**	43**	-42**	18	53**	05	-17	58**	00	30*	43**	30*	-06	04
Order	-03	29*	-21	-14	54**	26*	-02	21	03	32**	-05	52**	-09	09	20	15	-08	08	05	19
Play	16	-33**	48**	-01	-34**	-40**	24	37**	-10	-15	28*	-50**	10	25	00	-02	07	08	-01	-11
Social Recognition	12	32**	13	08	09	10	20	32**	33**	-03	-06	17	24	29	00	-06	-22	-10	07	-01
Understanding	22	32**	-20	16	15	17	-08	-06	03	-11	-04	18	04	10	-13	08	-06	-13	06	12
Infrequency	-06	-11	10	16	-34**	00	01	-05	09	-24	-07	-23	10	-06	04	-02	-08	-16	08	11

*p <.05. **p <.01.

Table 14 DPQ Intercorrelations for Female (n=66) and Male (n=65) Honors Students

	DPQ Scales																		
DPQ Scales	Abs	Ach	Agr	Aln	Ctr	Hv	Sc	Sp	Sr	Trd	Wb	Cst	Na	Pa	ASLP	UNVT	DRIN	TRIN	VRIN	INVAL
Absorption		21	00	-24	28*	-32**	-22	05	00	-23	09	-34**	40**	35**	13	17	-04	-01	-21	-12
Achievement	15		-16	-13	01	01	-26*	12	-06	08	03	22	04	51**	02	29*	03	-10	00	12
Aggression	-01	-16		38**	-19	-22	-12	40**	45**	-14	-34**	-36**	69**	-09	17	-32**	-27*	-02	37**	32**
Alienation	16	06	36**		-20	-08	04	34**	23	01	-10	-08	70**	16	19	-03	-12	01	32**	32**
Control	-02	33	-27*	-08		31*	15	-20	-17	22	-04	77**	-32*	-16	-31*	05	21	17	-20	-29*
Harmavoidance	-14	16	-28*	-10	48**		19	17	-01	13	21	61**	-22	17	-15	04	07	22	-03	-05
Social Closeness	09	-10	-06	-07	-19	24		14	-17	26*	38**	26*	-28*	29*	-01	02	08	28*	-01	02
Social Potency	24	14	22	-05	-07	-06	33**		06	16	22	-03	40	62**	20	-08	-04	-01	19	18
Stress Reaction	02	-07	26	33**	-11	-11	-12	-23		-19	-57**	-17	67**	-29*	10	-29*	-40**	05	38**	36**
Traditionalism	14	22	02	06	41**	11	-08	08	-08		50**	63**	-05	42**	-19	06	07	35**	-08	-09
Wellbeing	32**	01	-08	-23	-18	-06	35**	46**	-68**	04		26*	-34**	69**	05	25*	39**	33**	-28*	-16
Constraint	-12	44**	-38**	08	85**	63**	-05	-12	01	56**	-23		-26*	22	-31*	18	18	32**	-14	-17
Negative Affectivity	35**	01	58**	73**	-17	-34**	-22	00	71**	16	-39**	-04		09	20	-17	-33**	00	34**	34**
Positive Affectivity	53**	37**	02	00	-19	-09	47**	72**	-35**	14	74**	-07	00		13	28*	14	15	-04	08
Associative Slips ASLP	15	03	16	10	05	-11	-09	02	02	14	14	02	19	14		-08	-05	-10	26*	47**
Unlikely Virtues UNVT	-07	26*	-05	12	16	05	-06	25*	-44**	13	26*	14	-16	25*	-02		38**	02	-21	10
Desirable Response Inconsistency DRIN	10	08	-15	03	-04	-03	11	21	-45**	00	38**	-05	-22	26*	-08	47**		11	-27*	-16
True Response Inconsistency TRIN	-03	16	12	07	00	18	02	16	-23	12	16	-11	-03	16	13	33**	36**		-13	-07
Variable Response Inconsistency VRIN	-02	-09	08	02	-08	-09	-04	01	06	-06	-06	-08	12	-05	06	-35**	-29*	03		87**
Invalidity	09	05	06	18	00	-16	-20	-03	00	06	03	-02	18	02	34**	13	-08	11	59**	

Note. Intercorrelations for women appear above the diagonal; intercorrelations for men appear below the diagonal. Decimals omitted.
* $p < .05$. ** $p < .01$

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