SEX ROLE IDENTITY AND ACHIEVEMENT MOTIVATION IN WOMEN

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INTRODUCTION

The Motive to Achieve, or the need for Achievement, (n Ach), is defined by McClelland, Atkinson, Clark and Lowell (1953), as a need, desire or disposition to strive for success at situations in which a standard of excellence is thought to apply.

Support for the theory of Achievement Motivation and the validity of the measure of the Motive, the n Achievement Test, has been provided consistently in studies of male subjects. In contrast, studies of women have been riddled with anomalous results. As a result, the validity of the measure when applied to women and the generalizability of the theory of Achievement Motivation have been seriously questioned.

The most consistent sex-related area of confusion in Achievement Motivation research involves attempts to experimentally increase Achievement Motivation from 'neutral' to 'intellectual arousal' conditions. Neutral conditions are designed to elicit normal motivation level. Arousal conditions are intended to strengthen Achievement Motivation by using instructions stressing quality of performance and competition with a standard of excellence. Unlike men, women have not consistently demonstrated the expected increase in n Ach scores from neutral to intellectual arousal conditions. This inter-sex difference has not yet been satisfactorily analyzed or explained.

Attempts to resolve the problem of n Ach arousal in women have varied in approach from methodological to theoretical. The findings of these studies did not resolve the problem. However, they did draw attention to differences in achievement roles adopted by men and women. Moreover, the importance of women's acceptance or non-acceptance of achievement as sex-

role appropriate emerged as a factor to be considered in sorting out patterns in women's n Ach scores. Furthermore, the sex of the stimulus cue figure was isolated as an important variable in determining such acceptance.

The considerable influence of sex-role orientation and perception of Achievement Motivation as male or female appropriate in patterns of n Ach scores has been clearly demonstrated with women having a 'traditional' sex-role identity. However, results obtained with women with less traditional sex-role orientation have been inconclusive. Anomalies in findings may be partially due to the use of single bipolar scales in the measurement of sex-role orientation. Such scales conceptualize 'masculine' and 'feminine' traits as occupying opposite ends of the same continuum, a conceptualization which lacks empirical support.

The purpose of this study is to introduce a theoretically more developed approach to the differentiation of women's sex-role orientation in an attempt to resolve sex related problems in Achievement Motivation. A framework for such a further differentiation is provided by the theory of Androgyny, a theory which goes beyond sex-role stereotypes.

The study is organized into three chapters. The first chapter presents a history of the problem and reviews the literature relevant to the proposed solution. The second chapter describes and discusses the empirical investigation. The results are presented and discussed in the third chapter. Finally, the study is summarized and suggestions for future research are presented.

CHAPTER I

REVIEW OF THE LITERATURE

This chapter presents a discussion of both the theory of the Motive to Achieve and the theory of psychological androgyny. The Motive to Achieve (n Ach) is first introduced. Then, the unresolved inconsistencies in findings on the arousal of the Motive in women are described and some of the explanations that have been put forth in attempts to resolve these inconsistencies are presented. Next, studies which deal with the relationship of sex-role orientation and the Achievement Motive in women are reviewed and the importance of sex-role identity in investigations of achievement in women is demonstrated.

A brief description of the evolution of a theory of psychological androgyny, a theory of sexual identity which goes beyond sex-role stereotypes, follows. The operalization of the concepts of masculinity, femininity and androgyny is discussed within the framework of this review. A review of existing empirical studies based on such a conceptualization of androgyny is next presented.

The chapter ends with a brief summary of the theories of the Achievement Motive and androgyny and the statement of the problem and hypotheses of the current study.

The Achievement Motive

In 1953, McClelland, Atkinson, Clark and Lowell presented a theoretical framework for examining Achievement Motivation. Within this

model, the Achievement Motive, or the need for Achievement (n Ach), is generally associated with a relatively stable or enduring personality disposition to strive for success. Atkinson defines the Achievement Motive as a "capacity to experience pride in accomplishment". n Ach has also been defined as "the need, desire or disposition to strive for success at a task in which a standard of excellence is thought to apply" (McClelland, Atkinson, Clark and Lowell, 1953). McClelland and Winter (1969, p.10), refer to the Motive to Achieve as the "urge to improve".

More precisely n Ach is defined in terms of affect in connection with evaluated performance. That is, the mere perception of performance in terms of standards of excellence is not in itself a motive. Rather the standard makes the production of affect possible. It is the concern of the individual that his/her <u>own</u> performance meet a standard which defines the motive.

The Achievement Motive, therefore, has been posited as a general human concern with meeting standards of excellence. It is further posited that one person is comparable with another in terms of the degree to which each has this concern. Although the direction of the concern may vary from scientific or artistic effort to business or social concerns, until recently, research on n Ach has focused on situations emphasizing intelligence and leadership abilities.

The Motive to Achieve, like all motives, is considered to be a stable and latent personality trait. It is not directly observable. The motive must be activated by situational cues to be made observable. McClelland, Atkinson, Clark and Lowell (1953) posited that if the testing situation for a set of subjects remained roughly constant, the relative strength of

n Ach in different individuals could be determined.

Accordingly, McClelland et al (1953) devised an instrument, the n Achievement Test, which provides a quantitative value of the Achievement Motive in an individual within a controlled situation.

McClelland's n Ach Test is a modified version of Murray's (1938) Thematic Apperception Test (TAT). The process of apperception is described as going beyond the recognition of objects and events, to a full interpretation based on one's life experience. The TAT Test consists of a set of pictures, each of which is used by a subject as a starting point of a story. The stories are analyzed like dreams. They are scored for Achievement imagery, that is, for a display of concern with competing successfully with a standard of excellence.

It has been stated that it is the affect in connection with evaluation which defines the Achievement Motive. Accordingly, a system for scoring stories was developed which emphasizes the detection of signs of an individual's involvement in competing with a standard of excellence. For example, an indication of personal concern over success would be directly stated affect (happy to pass) or desire (wants to become a doctor).

The scoring procedure developed requires that first a story as a whole be judged as showing some concern with achievement. If it does not, the story is scored -1. If the story is concerned with task completion rather than competition with a standard of excellence, a score of 0 is assigned. On the other hand, if achievement imagery is evidenced, the story is scored +1 and ten subcategories of achievement imagery are scored as well. These are: stated need for Achievement; instrumental activity; successful anticipatory goal state; unsuccessful anticipatory

goal state; personal obstacle; environmental obstacle; positive affective state; negative affective state; nurturant press; achievement thema. Each of these categories allows for a score of +1. Thus the range of scores possible for a particular story is -1 to +11.

The achievement categories listed above are further described in Appendix B. However, a perusal of the subcategory titles themselves indicates that the scoring procedure focuses on affect in connection with evaluation and is thus consistent with McClelland et al's theoretical conception of what constitutes a motive.

Since the publication in 1953 of The Achievement Motive (McClelland, Atkinson, Clark and Lowell), a great deal of experimental research has been conducted centering on the Motive to Achieve. This body of research contributed to the evolution of the current theory of Achievement Motivation and at the same time often yielded support for the construct validity of the TAT measure of n Ach. The validation of the measure, however, has been supported almost solely in research on male subjects.

Two forms of validation are considered below. First, the method used for the discovery of scoring categories is itself a kind of validation. This method involves the TAT n Ach being administered under 'relaxed' 'neutral' and 'arousal' conditions.

A relaxed condition is described as one in which the intent is to weaken the Achievement Motive. Achievement related cues in the instructions given prior to testing are held to a minimum and a light joking atmosphere is maintained.

A neutral condition, as described by McClelland et al. (1953) and by Atkinson (1958), is one in which no attempt is made either to weaken or

strengthen the Achievement Motive. The objective is to elicit the normal motivation level of the subject in an everyday setting.

In contrast, under the arousal condition an attempt is made to strengthen, that is, arouse the Achievement Motive. The intellectual arousal condition, generally used in research in Achievement Motivation, involves the administration of a verbal test prior to the TAT. The instructions for this test emphasize and encourage quality of performance and competition with a standard of excellence.

The large majority of studies on n Ach arousal to date have concentrated on differences in scores from neutral to arousal conditions.

It has been demonstrated that the n Ach scores of men in response to experimental achievement arousal conditions which stress intelligence and leadership ability are higher than their scores under neutral conditions. (e.g. Veroff, Wilcox and Atkinson, 1953; Alper and Greenberger, 1967). This is interpreted as a validation of the measure since, one of the expectations we would have of the Achievement Motive would be that it would increase in situations where quality of performance and competition with a standard of excellence are important.

The second form of validation is provided by the demonstration of expected relationships between scores on the measure and other kinds of data.

For example, men high in n Ach have been shown to select work partners of high ability (French, 1956). Better performance and longer persistence is displayed by high n Ach males on tasks in which the outcome depends on ability rather than chance and in which knowledge of results will be made known and evaluated in terms of some standard of

excellence (Atkinson and Feather, 1966). Significant relationships have also been described between men's n Ach scores and problem solving effectiveness (French, 1958; French and Thomas, 1958), learning (e.g., Hurley, 1957; Johnson, 1955), and academic performance (Pierce and Bowman, 1960; Ricciuti and Sadacca, 1955). Many other predictable n Ach score-other score relationships have been found to be significant in men. (Lowell, 1952; Atkinson, 1953; reported in McClelland et al, 1953).

In contrast, results obtained with women have been inconsistent in studies pertaining to both these areas of validation (Wilcox, 1951; Veroff, 1950; deCharms, Morrison, Reitman and McClelland, 1955). Accordingly, the validity of the measure when applied to women and the generalizability of Achievement Motivation theory have been seriously questioned. Atkinson (1958, p.77), has pointed out that "perhaps the most persistent unresolved problem on n Ach concerns the observed sex differences." Since it is in helping to resolve the sex-related problems in n Ach findings that the present study hopes to make a contribution, the next section presents the empirical findings on sex differences in n Ach and reviews the theoretical positions that have been put forward to explain these differences.

n Ach Arousal

The most persistent area of confusion involving differences in results on samples of men and women, is the apparent failure of female subjects to show the expected increase in thematic apperceptive n Ach imagery when exposed to experimental achievement arousal conditions stressing "intelligence and leadership" (Veroff, et al., 1953; Wilcox, 1951; Alper and Greenberger, 1967). The scores of women under neutral

conditions, however, have been shown to be as high and sometimes higher than those of men (Veroff, 1950).

Early attempts to resolve the inconsistencies in findings on women failed. (Field, 1951; McClelland, 1953). Accordingly, the large volume of research on Achievement Motivation that has been reported over the last twenty years refers almost exclusively to male subjects.

However, two approaches to explaining sex differences in n Ach have recently emerged. The first posits that motives such as need for Affiliation and Fear of Success have a higher position in women's hierarchy of motives than the Motive to Achieve. The second suggests that while women have a need to Achieve, areas of achievement other than the intellectual are more relevant to them and that the generalizability of the motive as it was initially conceived has been wrongly ignored.

The efficacy of the two approaches in resolving the problem of sex-related anomolies in n Ach findings is discussed below.

Horner (1969), in an attempt to clarify the apparent inapplicability of the theory of Achievement Motivation to women, suggested the existence of an intervening motive predominantly influencial in female achievement behavior. She shifted the focus away from the Motive to Achieve to a motive which she calls the Motive to Avoid Success.

Horner argued that test or achievement related anxiety in an intellectual arousal situation may be related in women not only to fear of failure (Atkinson and Feather, 1966), but to the negative consequences which success may bring. Since intense intellectual striving is viewed as "competitively aggressive behavior" (Mead, 1949), or as "masculine" (Bakan, 1966), intellectual achievement might result in an unconscious

loss of femininity (Freud, 1933), and consequently social rejection.

Horner demonstrated in several studies (e.g. 1969, 1970), that the Motive to Avoid Success dominated the TAT stories of female subjects when given the verbal cue "After first term finals, Ann finds herself at the top of her medical school class." Content analysis did reveal that avoidance themas included fear of rejection and being considered unfeminine. For example, in a study in 1970, 65 per cent of women told avoidance of success stories.

Since the publication of Horner's study, a considerable number of conceptual analyses and empirical investigations have focused on the Motive to Avoid Success. While it is beyond the scope of this study to review these individual studies, two conclusions emanating from them must be noted. First, the validity of the Motive to Avoid Success has not been adequately demonstrated (Tresemer, 1973). Second, to the extent that the Motive to Avoid Success exists, it has been shown to be present in males as well as in females (Hoffman, 1974), and thus, may not be an adequate explanation for sex specific findings on the arousal of n Ach. However, Horner's work is important in that it draws attention to a woman's perception of the male or female appropriateness of achievement as a variable to be considered.

The need for Affiliation has also been proposed as a gender specific intervening personality factor. Field, (1951), demonstrated that the Achievement Motive scores in women increase under conditions which arouse a concern for social acceptance rather than intelligence and leadership ability. College males and females were given a lengthy talk on the importance of social acceptance by a group in determining ultimate

satisfaction with life. Subjects were then given fabricated social acceptance scores which supposedly reflected their acceptance or rejection by the actual group members. Stories were then written under this 'social arousal condition'. The results indicated that the variation reported in social acceptance scores had no effect on males' n Ach scores. In contrast, women showed significantly higher n Ach being told their social acceptance scores than under the relaxed condition.

The implication of Field's findings was that social acceptance was more central to women than intelligence or leadership. Indeed, this was how McClelland (1953) interpreted Field's results and used this to try to explain the anomolous n Ach results obtained with women.

> In short the data unequivocally support the hypothesis that women's n Achievement is tied up with social acceptability, men's with leadership capacity and intelligence. To put it another way, if you want to arouse n Achievement in women, refer ... to their social acceptability; if you want to arouse n Achievement in men, refer to their leadership capacity and intelligence. (McClelland et al., 1953, p.181).

However, affiliation arousal, at least within Field's framework, did not turn out to be dependable for arousing need for Achievement in women. (Atkinson, 1958, report of Vogel's 1954 findings; Angelini, 1955).

Moreover, Maccoby and Jacklin (1974) point out that the absence of implied competition in the affiliation arousal instructions may have contributed as significantly as the stress on social acceptability to the arousal of n Ach in women.

Furthermore, Stein and Bailey (1973) have pointed out that social skills and personal relations may be important achievement areas for women. They emphasize that whereas women have been shown to demonstrate

increased n Ach scores under 'social skills' or 'traditional women's role' arousal conditions (Field, 1951, French and Lesser, 1964), Achievement imagery, not Affiliation imagery, was demonstrated under those conditions. Accordingly, Stein and Bailey posit that the need to strive for success (the Achievement Motive) is generalizable to areas other than leadership or intellectual oriented.

A study, by Friedrich and Harding (cited in Stein and Bailey, 1973), provides additional support for Stein and Bailey's suggestion of social skills as an important achievement area for women. In addition to scoring the Achievement Motive in the standard way (intellectual need for Achievement), Friedrich and Harding scored imagery concerning women's role activities such as marriage, heterosexual popularity and social leadership in which the goal was attainment of excellence rather than affiliation (Women's Role need for Achievement). There were low positive correlations of Women's Role Achievement Motive with grade average and achievement effort (i.e., amount produced) on a 'social skills' test.

Support for the contention that achievement relevant areas are varied is also found in a study by French and Lesser (1964) which demonstrated that n Ach scores are higher when arousal cues are related to goals achievement-relevant to the subject than when they are not. Moreover, the effect of the achievement relevance of goals on achievement performance was shown to be highly significant.

The findings of the research reviewed above do not demonstrate that the need for social acceptance displaces the Achievement Motive in women.

Rather, they highlight differences in the achievement roles adopted by men and women. The results reveal that social relations are an important area for achievement in women. This interpretation is consistent with McClelland's conceptualization of the Motive to Achieve as the need to strive for success in a variety of situations. Thus, this research demonstrates the existence of areas of achievement other than the intellectual.

However, if one accepts the existence of other achievement areas as an explanation for the inconsistencies in findings on women's n Ach scores, one must accept that intellectual Achievement is female inappropriate. This is a questionable generalization in view of the sizeable group of women who do tell success stories (35% in Horner's original example; 50% at Wellesley College when the medical school reference was omitted). Moreover, the results of a number of studies suggest that intellectual Achievement is appropriate to certain kinds of women.

Angelini (1955, cited in Atkinson, 1958, p.77), did find significant increases in n Ach scores in Brazilian college women under experimental conditions appealing to intelligence and leadership ability. In contrast to Field's findings, the increases in n Ach scores under these conditions were also found to exceed the increase produced by experimental conditions which arouse concern about social acceptance. The discrepancy in American and Brazilian results is explained by Angelini by reference to the limited access for women in Brazil to higher education which results in only highly competitive, intellectually-oriented women entering university.

Lesser, Krawitz and Packard (1963) set out to find an intellectual, competitive and achievement-oriented milieu which would provide American female subjects comparable to the Brazilian women used in Angelini's

study. Hunter High School for girls, noted for these attributes, was chosen. The authors predicted for their adolescent subjects the same increase in n Ach scores under arousal conditions as shown with the Brazilian women.

The girls who were meeting the academic demands of the school were classed as Achievers while those who were not were classed as Under-achievers. These two groups were matched for I.Q. They were then exposed to a standard set of thematic apperceptive pictures depicting males and females. All subjects were tested under both neutral and Achievement-oriented experimental conditions. The Achievers did show an increase in n Ach scores from neutral to arousal conditions as predicted.

Similarly, French and Lesser (1964) predicted that college women in a coed situation whose value orientation is intellectual would show an increase in n Ach under arousal conditions. Their hypothesis was supported as well.

Thus, it becomes apparent that highly competitive women (Angelini, 1955), bright academically achieving female adolescents (Lesser et al., 1963), and intellectually-oriented coeds (French and Lesser, 1964), demonstrate n Ach score shifts under intellectual arousal conditions similar to those demonstrated by men.

This evidence of intra-sex differences in patterns of n Ach scores among women resulted in a shift in focus on the part of those investigators who do not accept intellectual n Ach as male specific to within group rather than across group differences. It should be pointed out, however, that although the studies which concentrated on inter-sex differences failed to adequately resolve the sex-related inconsistencies in n Ach

findings, they did point to the direction which intra-group studies should pursue. By exploring factors such as social acceptance and fear of success, they led to the suggestion that women's acceptance of achievement as sex-role appropriate may be the important variable in sorting out n Ach scores among women.

Sex-Role Orientation and n Ach

In the previous section, a number of approaches which have been suggested as possible explanations for the inconsistencies in findings in n Ach Arousal in women were reviewed. None of these were found to have resolved the problem, but they did lead to an interest in exploring intra-group differences in sex-role orientation among women and the corresponding acceptance or non acceptance of intellectual n Ach as female appropriate by the groups.

In order to explore perceptions of the sex-role appropriateness of n Ach, the relationship between n Ach score strength and the sex of the stimulus cue figure in the TAT must be examined.

The n Achievement Test, as has been mentioned above, is a projective measure. One complication of such an instrument is the assumption that the responses a subject makes to ambiguous stimuli like pictures reflect the subject's own motivations, feelings and behavior. Accordingly, the cues selected generally involve a main character of the same sex and as similar in other respects to the subject as possible.

However, research findings have indicated that both men and women produce fewer achievement themes to female cues (Veroff, 1950; Wilcox, 1951). A study by deCharms, Morrison, Reitman and McClelland (1955) showed that in women, sex-role conflict may be aroused by the use of

female characters in Achievement situations. In this study, college women who held office produced n Ach scores related to performance in response to male characters regardless of the situation or to female characters in non-achievement situations. Pictures of career women did not elicit valid or performance related n Ach scores. Thus the compatibility of the subjects' sex-role values with the picture cue situation was isolated as an important variable to be considered.

Indeed, Murstein (1965) in a review of the findings on the importance of the similarity between the TAT stimulus figure and the subject concluded that physical similarity may be of less importance than the cultural or personal significance of the stimulus for the subject. The importance of subjects sex-role attitudes in the valid measurement of Achievement Motivation is strongly suggested.

A number of more recent studies in Achievement Motivation have pointed to the apparent influence of sex-role orientation on women's perception of intellectual achievement behavior as appropriate.

Alper (1957) found that in Wellesly College, an academic excellence-oriented school, female subjects valuing social acceptance whether tested under neutral or intellectual achievement arousal conditions, scored higher in n Ach in response to male cues than in response to female cues. This result may be interpreted as reflecting a perception that in American culture, achievement and success are accepted as male appropriate. Alper's study also indicated that those subjects who did not value social acceptance expressed more achievement imagery in response to female cues, but only under the neutral condition. This finding may indicate that women who value social acceptance less strongly are less likely to accept

the cultural stereotype of achievement as female inappropriate.

These results are partially in contrast to those of Lesser, Krawitz and Packard (1963) who found a significant increase in the scores of Achievers under the intellectual arousal condition in response to female pictures while a decrease was displayed in response to male pictures. Under the neutral condition the mean scores of pictures of men and women were not significantly different. Underachievers showed an increase in n Ach scores in response to male pictures.

Lesser, et al. interpreted these results in the light of evidence presented by Moss and Kagan (1961) that the production of thematic material is strongly influenced by the subject's conception of what behaviors are appropriate to the social role of the hero in the stimulus cue. Accordingly, it is suggested that the Achievers perceived intellectual achievement-goals as a relevant part of their own female role while Underachievers saw such goals as more relevant to the male role than to their own female role.[1,2]

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1. This interpretation leaves unresolved the question of why a similar increase in n Ach scores was not evidenced by Achievers in response to male cues. The acceptance of achievement as female appropriate does not preclude the acceptance of achievement as male appropriate.

2. Before proceeding, a description of the content of the picture cues used in this study and generally used in studies of n Ach is required for subsequent interpretations of results. Only one female picture depicted an activity which was other than mother, friend or homemaker-oriented. In contrast, one male picture depicted a father-son relationship while the others were specifically intellectual achievement-relevant.

   It is not clear why n Ach scores of Achievers should increase in response to homemaking pictures rather than to male achievement-relevant cues. Perhaps, despite intellectual arousal conditions, the 'social skills' content of the cues aroused n Ach in the Achievers.

A follow-up study done by French and Lesser in 1964 partially supported their interpretation. A specially designed role orientation value measure allowed for the grouping of women as Women's Role-Oriented, Intellectually-Oriented, or both. As predicted, Women's Role-Oriented college women scored higher on n Ach, as measured by French's Insight Test, when responding to statements about women engaged in domestic and social activities while Intellectually-Oriented college women scored higher when the activities involved intellectual pursuits. Women who were high Intellectual-Oriented or high Intellectual-high Women's Role-Oriented (that is, both) did not show the predicted greater n Ach in response to female stimulus cues under the intellectual set. Rather, stimulii involving males drew higher n Ach scores from all value orientation groups. Thus the above experiment failed to resolve the sex-related problems in arousal of n Ach.

French and Lesser allowed for the possibility of a woman being both Women's Role Oriented and Intellectually-Oriented. However, the instructions used required that subjects "answer as you think most girls would answer". French and Lesser's reasoning was that the "most girls here" format would reduce defensiveness. They assumed that there instructions would increase the probability of subjects projecting their own attitudes (French and Lesser, 1964, p.122). It may be that such a format stimulated stereotypic rather than personal value orientation response thereby nullifying any illuminating results which otherwise might have emerged from such a further differentiation.

In order to further explore the role-orientation/n Ach-male-female-appropriateness link, Alper (1973) developed the Wellesly Role-Orientation

Scale (WROS) which consisted of three subscales based on a bipolar continuum conception of a) traits generally agreed to be masculine-feminine; b) role activities acceptable-not acceptable for themselves as women; c) career and/or career oriented, activities considered more appropriate for men than women.

Alper hypothesized differential response of the low and high Traditional Women's Role groups as distinguished by the WROS Scale to male and female stimulus figures based on Lesser et al.'s (1963) findings. Suspecting that the strength of the achievement cues were partially responsible for previous inconsistent findings, the Chem Lab and Machine Shop pictures found by Veroff et al. (1960) in a national survey to be most effective for arousing intellectual Achievement imagery in female and male subjects respectively were employed. Alper found that the male picture did evoke stronger Achievement imagery in high than in low Traditional Feminine Role-Oriented subjects and that within the high scorers the male pictures did tend to be more effective than the female picture. However, contrary to expectation, the female picture neither pulled more Achievement imagery in low scorers than in high nor was it more effective than the male picture for doing so with low scorers. In other words, low scorers saw achievement as both male and female appropriate.

In subsequent studies Alper abandoned the McClelland et al. (1953), scoring system in favour of a thema analysis of the type Horner (1968) had used in her study of Fear of Success. Only such an analysis had allowed the striking sex differences in Horner's data to emerge. In Alper's study, using a sample of senior college women, success stories were significantly more often told by low WROS scorers than by high WROS

scorers. Some highs told success stories, but they differed significantly from lows. "Danger" stories appeared at both ends of the WROS continuum with about equal frequency. However, the danger for highs, was either to the person of the achiever or to interpersonal relationships; for lows, the danger was that the project would fail. Task completion and unrelated themas were more typical of highs than lows.

Lows' success stories included four subthemas; hard work pays off; achievement facilitated by competition or rivalry; support by an achieving model; achievement as a cooperative effort.

Highs' success stories were characterized by different subthemas; achievement is instrumental to quantification of a need other than achievement qua achievement, usually affiliation; woman as man's helper; and to achieve, women have to work harder than men.

Using a stimulus involving both a man and a woman, Alper found that highs continued to perceive achievement as female inappropriate while lows did not. Whereas highs tended to attribute the success to the man in the picture, lows attributed the success to either the joint efforts of the two people or to the women in the role of the worker. These findings, however, were not found to be replicable in a subsequent study using a sample of junior college women.

In summary, the studies reviewed in this section clearly demonstrated the importance of sex-role orientation, and of perception of sex-role appropriateness of achievement in predicting patterns of n Ach.

The results, however, are consistent only with respect to women with a traditional sex-role orientation who view achievement as male but not female appropriate. In contrast, results on women with less traditional

sex-role orientations are rife with inconsistencies and anomolies. These women have been shown to view intellectual n Ach as female, male or both appropriate. It is suggested here that a theoretically valid approach to the grouping of women according to sex-role identity is required to finally resolve the problem. It is further suggested here that a framework for such a further differentiation is provided by a recently formulated theory of sexuality, the theory of Androgyny. This theory contends that all people possess both masculine and feminine traits and that the balance between these traits can be used to predict behavior.

The following section describes the evolution of the theory of Androgyny.

Androgyny

The significance of sexuality in human functioning and development has been pointed out by most traditional theoretical approaches to personality, whether psychoanalytic, social learning, cognitive developmental or biogenetic. However, the degree to which the theories allow for biological differences between the sexes being overcome by a culture in which behavior is decreasingly sex stereotyped varies. It is beyond the scope of the current study to review the works of many theorists who deal with sex differences. The perspectives of Freud, Jung, Erikson, Kagan, Bakan and Bem seem most relevant to the current development of the theory of Androgyny. Accordingly, a brief overview of these theorists' contributions to the evolution of the concept of Androgyny is presented below.

Scientists and mystics throughout history have suggested that every human being is the carrier of complementary life energies. These energies

have been given a lot of names, yin and yang, poetic and rational, emotional and intellectual, agency and communion, masculine and feminine. These energies are assumed to exist within everyone regardless of sex.

The term Androgyny in its broadest sense can be defined as the One which contains the Two; namely, the male (andro-) and the female (gyne). The male and female pair of opposites serves as the symbolic expression of the energic power behind all of the other polarities; for example, positive-negative; mind-body; hot-cold; art-science, etc. (Singer, 1976).

In attempting to understand the evolution of Androgyny from a psychological perspective, it is essential to first look to psychoanalytic theory. This approach represents the first full attempt in psychology to conceptualize the development of sex-roles and sex typed behavior. Such development, according to psychoanalytic theory is based primarily on the biological differences between the sexes.

For Freud, anatomy is destiny. However, the presence of both maleness and femaleness in all individuals requires that a man or woman suppress the contrasexual aspect in order that a mature relationship with someone of the opposite sex be achieved.

Bisexuality, the acting out of one's maleness or femaleness is a central concept to Freud's psychosexual theory. Bisexuality is considered a biological universal which necessarily exerts its influence on the psychological "which at bottom is in itself a reflection of biology" (Stoller, 1974, p.343). From Freud's interpersonal perspective, therefore, manifesting one's maleness and femaleness is a form of psychopathology, that is, is a disease to be cured.

Central to the development of sex-role identity according to Freud,

is the resolution of Oedipal conflict. From the theory of penis envy emerged the belief that women are envious of men in general, dissatisfied with their own sex-role, and experience a weaker sex impulse. Moreover, feelings of inadequacy and needs to be passive and masochistic began to be associated with women. Thus, it is from Freud's basic assumption of female inferiority that the feminine sex-role stereotype began to emerge.

Jung, a disciple of Freud, came to basically disagree with Freud's interpretive principle in psychoanalysis. Whereas Freud regards the sexual impulse as the root of behavior, Jung suggested a 'neutral' energy principle which would find its expression through sexuality or intellectual expression, creative artistry, business or professional life (Jung, 1916). Accordingly, although Jung accepts Freud's assumption of the existence of elements of maleness and femaleness in human nature, Jung looks at bi-sexuality as an intrapsychic rather than an interpersonal phenomenon. Jung regards bisexuality as something to understand, not cure. His concern is the interplay between the masculine and feminine components within the individual psyche. Far from being seen as pathological, the fullest human potential of men and women from Jung's view, could be realized only through a process that included the recognition of the contrasexual aspect.

This contrasexual aspect is represented by Jung in his polarized concepts of anima and animus (Jung, 1953). Anima, the Latin word for soul is in the feminine gender. It refers to the feminine element that exists in man and remains, according to Jung, largely unconscious. As a man's normal consciousness is masculine, for the most part his soul, or anima, becomes the container of the unconscious processes that are

consistently taking place in him. Similarly, Jung posits a masculine soul, or animus, for woman as the carrier of her unconscious.

Jung took a step from bisexuality to Androgyny. However, as Singer (1976) points out, both Freud and Jung were the products of a strongly patriarchal masculine oriented society. Accordingly, Jung's polarized notion of anima and animus suggests a separate but unequal view of the sexes as did Freud's. For example, Jung argues that the man's anima helps him produce his creative work. The women's animus, on the other hand, is supposed to inspire the man to produce his creative work.

> "Just as a man brings forth his work as a complete creation of his feminine nature so the inner masculine side of a woman brings forth creative seeds which have the power to fertilize the feminine side of man..." (Jung, 1953, p.342).

Thus it becomes apparent that for Jung, realizing a woman's fullest potential means recognizing and integrating the animus in the totality of her personality in such a way as to fully control and subordinate the manifestations of her animus (independence, assertiveness, ambition, intellectual striving and other 'male appropriate' behaviors).

Several other followers of Freud challenged Freud's dictum, anatomy is destiny, on the grounds that it ignored the importance of socio-cultural factors in sex-role development. Most significantly, Erikson, postulated that anatomy must be considered together with history, and personality in determining an individual's combined destiny.

Erikson postulated a series of eight inter-related psychosocial developmental stages which extend into adulthood. Sex-role identity evolves through these stages. Anatomy is important to this development. However, sex-typed behavior must be viewed within a total configurational

context related to an individual's current stage of psychosocial development. Thus, Erikson (1968) states:

> "Woman, then is not more 'passive' than man simply because her central biological function forces or permits her to be active in a manner tuned to inner bodily processes or because she may be gifted with a certain intimacy and contained intensity of feeling... A woman is pathologically passive only when she becomes too passive within a sphere of efficacy and personal integration" (p.20).

Although the above statement does not suggest female inferiority, a double health standard is implied. In fact, Erikson (1964) makes an anatomical distinction between "inner" (female) and "outer" (male) space. He distinguishes between masculine "fondness for what works and for what man can make, whether it helps to build or to destroy" and a more "ethical" feminine commitment to "resourcefulness in peacekeeping and devotion in healing". However, it must be pointed out that Erikson's emphasis on the necessity for considering the three factors, anatomy, history and personality, allows him to suggest the possibility of transcending sex-role stereotypes.

> "For even as real women harbor a legitimate as well as compensatory masculinity, so real men can partake of motherliness ... if permitted to do so by powerful mores" (Erikson, 1968, pp.285-286).

Thus, Erikson also takes a step toward Androgyny.

The development of sex-typed behaviors has been dealt with by social learning theorists as well. The recent emphasis is on perceptual cognitive and observational processes in sex-role acquisition. Accordingly, prevailing cultural prescriptions and child rearing practices, not gender, are said to determine a child's masculinity and femininity.

The processes of identification, modelling and imitation are crucial to sex-role identity formation.

Kagan (1971) contends that sex-role standards are internalized by men and women during the course of socialization. These standards differ basically for men and women. Accordingly, the hierarchy of motives central to one sex, is often peripheral for the other. The highly masculine or highly feminine sex-typed individual suppresses behavior inappropriate with that sex-role standard in order to maintain a consistent self-identity of 'masculine' or 'feminine'.

Consistent with the anatomically based psychoanalytic theories and based on the social learning approaches to the development of sex-role, tests of masculinity-femininity have long been constructed as bipolar. These measures are assumed to reflect sex-typed socialization patterns acquired through the processes of sex-role internalization and identification as well as differences which are anatomically determined. Accordingly, in these scales, masculinity and femininity are conceived of as end-points of a single bipolar continuum with most male responses falling at the masculine extreme and most female responses at the feminine extreme (e.g. Terman and Miles, 1936; Gough, 1964). Thus validation of most M-F scales has been based on their ability to differentiate between the genders or between homosexuals and heterosexuals.

The assumption of polarization and in some cases, of female inferiority underlying most personality theories, has led to a double standard of mental health. The acceptance of such a double standard has been empirically demonstrated by Broverman, Broverman, Clarkson, Rosenknantz and Vogel (1968). The concepts of experienced therapists of

mental health showed that the healthy male and the healthy adult are described in similar culturally valued traits while the healthy female differs from both, having less socially desirable characteristics.

The present social and political climate has led to the advent of the Women's Movement and the questioning by both men and women of the viability of a double mental health standard. Not surprisingly, the concept of sex-role appropriateness of male and female behavior is being concurrently challenged.

Kagan points out that sex-role values are now being transformed.

> "In the recent past, most women wanted to be reassured of their ability to effect harmonious relations and to participate in recipricol love relations. These motives dominated their behavior with others. Although the same motives exist among men, they have been subordinated to a more pressing desire for power and a dominant position in interaction with others. However, the growing protest among women that these culturally arbitrary sex differences place the female in a subordinate role is producing profound changes in sex-role values ... And many young men agree" (Kagan, 1971, p.25).

Bakan (1966) in The Duality of Human Existence considers the biological, psychological and socio-cultural factors entering into sex-role development and presents an androgynous model of human functioning. The model does not purport equality of the sexes. Rather the necessity for the balance of masculinity and femininity in both men and women is emphasized.

Bakan argues that sexuality can be considered a touchstone for understanding human behavior (1966, p.102). The significance of sexuality in human functioning is attributed to a) the close relationship of sexuality to human existence, that is, human existence is the result of

sexuality; b) the phenomenological bondage of the psychological and the physical in sexuality and c) the influence of sexuality at all stages of human development as evidenced by the great discrepancy between the sexual and reproductive capacities of humans (e.g. overproduction of sperm and ova).

Bakan emphasizes the heuristic value of considering sex differences. He contends that the male and female dichotomy prevails in all cultures and as such plays an important role in the psychological life of all individuals. However, he argues that simple male-female dichotomies based on biology or reproductive capacities, secondary sex characteristics, social 'roles' and presumptive differences in the psychological make-up of the two sexes break down upon close and careful investigation. Evidence of these breakdowns is cited by Bakan. They include the existence of varieties of intersex (hermaphrodite) individuals, the small to extensive range of overlap of distributions of secondary sex characteristics, social role and psychological measures and finally, the great effect of culture on role.

Bakan argues that in order to profitably gain an insight into human nature based on sexuality, one cannot simply assign individuals to the male and female categories. Rather, sexuality should be considered in terms of an abstract set of male and female principles derived from a cautious investigation of what differentiates the aggregate of males from the aggregate of females. Bakan emphasizes the need for caution in the use of such a method as it does not distinguish between biological and cultural determination. He argues that culture may reflect and defer to constitutional changes between the sexes.

Bakan's method of differentiation allows for the possibility of an individual being extremely masculine or 'agentic' at one level and extremely feminine or 'communal' at another. The terms 'agency' and 'communion' are elaborated upon by Bakan in his discussion of sexuality. Agency is described as the positively valued fundamental modality of masculinity. Masculinity is conceived of as a supraordinate trait comprised of subtraits which reflect a sense of agency. Such traits as competitive, ambitious, independent and decisive would be included in the masculine classification. These traits would be manifested in self protection, self assertion, and self expansion. Agency is manifested in the formation of separation. Agency is, therefore, concerned with the organism as an individual.

Communion is described as the positively valued fundamental modality of femininity. Classed under the supraordinate trait of femininity would be such subtraits as expressive, gentle, concerned, considerate, that is, traits reflective of a sense of communion. These traits would be manifested in a sense of being at one with other organisms. Communion, according to Bakan, is descriptive of the individual organism as it exists in some larger organism of which it is a part.

Bakan argues that the fundamental task of all individuals is to "try to mitigate agency with communion" (1966, p.14). The balancing of these two modalities is suggested as prerequisite to mature and healthy functioning.

In other words, both feminine or communal and masculine or agentic traits are involved in an individual's adaptive behavior. Thus Bakan puts forth an androgynous model of human functioning.

Building upon the theoretical propositions of Bakan (1966) and Kagan, Bem (1974) operationalized the concept of Androgyny in the Bem Sex Role Inventory (BSRI). The test differentiates between masculine, feminine and androgynous individuals.

Bem, like Bakan, conceives of an androgynous individual as having a balance of both male and female characteristics and as a result as a highly adaptable person. Moreover, Bem, like Kagan, posits that sex-role inappropriate behavior is suppressed by a sex-typed individual thus restricting his/her adaptability.

Assuming cultural, not biological, determination, Bem centres her theory on the differential adaptability of masculine, feminine and androgynous individuals. Bem argues for the necessity for a shift from considering sex-typed restrictive behavior as the norm to accepting androgynous adaptable behavior as the standard for health. This contention is in keeping with the theoretical position of Bakan.

In 1979, Bem articulated two theoretical assumptions which underly the BSRI.

> (1) Largely as a result of historical accident, the culture has clustered a quite heterogeneous collection of attributes into two mutually exclusive categories, each category considered both more characteristic of and more desirable for one or the other of the two sexes. These cultural expectations and prescriptions are well known by virtually all members of the culture.
>
> (2) Individuals differ from one another in the extent to which they utilize these cultural definitions as idealized standards of femininity and masculinity against which their own personality and behavior are to be evaluated. In particular, the sex-typed individual is highly attuned to these definitions and is motivated to keep her or his behavior consistent with them, a goal

> she or he presumably accomplishes both by selecting behaviors and attributes that enhance the image and also by avoiding behaviors and attributes that violate the image. In contrast, the androgynous individual is less attuned to these cultural definitions of femininity and masculinity and is less likely to regulate her or his behavior in accordance with them. The BSRI is thus based on a theory about both the cognitive processing and the motivational dynamics of sex-typed and androgynous individuals. (1979, p.2)

Following directly from the theory, the BSRI was designed to distinguish between those individuals who cluster the attributes on the BSRI into the two categories designated by culture as more desirable for one or the other of the two sexes and those who do not.

Unlike previous masculinity-femininity scales, the BSRI allows masculinity and femininity to be measured as separate dimensions present in varying degrees in both men and women. The method of assessment, is self-rating. Subjects rate themselves on two series of items, one shown to be culturally associated with masculinity and the other, with femininity.

The original scoring system of the BSRI (1974) defined the Androgyny index essentially as a measure of balance of masculine and feminine characteristics. The measure was obtained by calculating an individual's t-ratio for the difference between his/her standardized scores on the masculinity and femininity scales. Small t-ratios indicated Androgyny while large t-ratios indicated sex-typing.

Bem (1976) subsequently revised her scoring system as a result of findings reported by Spence, Helmreich & Stapp (1975). Spence noted that Bem's conception of balance would include individuals low in

both masculinity and femininity, as well as those high in both, in the androgynous category, since in either case, the difference between the masculinity and femininity scores would be small. Spence, therefore, divided Bem's androgynous category into two groups, high masculine-high feminine and low masculine-low feminine. Spence's findings on self esteem indicated that a low degree of both masculinity and femininity was the least desirable state of affairs and, therefore, would result in the least situationally appropriate behavior. Accordingly, Spence argued that Androgyny be defined as the possession of a high degree of both masculinity and femininity.

In 1976, Bem's replication studies led her to accept Spence's distinction between androgynous individuals and undifferentiated individuals. Accordingly, Bem revised her scoring system (1976) to differentiate between masculine, feminine, androgynous and undifferentiated women. A masculine sex-role identity represents not only the acceptance in oneself of masculine attributes but the simultaneous rejection of feminine attributes. Similarly, a feminine sex-role identity represents not only the acceptance in oneself of feminine attributes but the simultaneous rejection of masculine attributes. An androgynous sex-role identity represents the acceptance in oneself of a large number of both masculine and feminine attributes while an undifferentiated sex-role identity represents the rejection of a large number of masculine and feminine attributes.

Before proceeding, it is important to note that in the process of developing a masculinity-femininity scale based on a dual or androgynous conception of personality, Bem provided data which seriously challenge the validity of the bipolar M-F scales traditionally used.

Bipolarity implies that the masculine traits defining one end-point of the continuum are opposite to the feminine traits at the other and the possession of these traits therefore, should be negatively correlated. However, Bem found 34 per cent of her male and 27 per cent of her female population to possess a balance of both masculine and feminine traits. Similarly, Spence (1974) in constructing the Personality Attributes Questionnaire (PAQ), a second test based on a dual conceptualization of personality, reported a positive correlation between the possession of a high degree of masculinity and a high degree of femininity. In addition to providing reason to question bipolar scales, these findings provide support for Bakan's and Bem's conceptualizations of Androgyny.

The use of the Bem Sex Role Inventory (BSRI) is in keeping with the recent effects of the feminist movement, the sexual revolution, Women's Liberation and the general societal tendency to view sex-role differences less rigidly. Moreover, current research findings provide empirical support for such changes. Only a few studies need be cited here.

Educated males have been shown to accept more traditionally feminine values and behaviors (Sexton, 1969). Aggressiveness and competitiveness have been demonstrated as becoming less valued by men, (Simmons and Wimograd, 1967). Ehrenberg (1960), has suggested that the role of the contemporary male calls for impulse-expressive behaviors and personal attributes not associated with traditional conceptions of masculinity.

Similar changes of sex-related self perception and sex-role orientation are indicated by the findings of recent studies on Achievement Motivation. These studies, dealing with the Motive to Avoid Success and the Motive to Achieve, have shown men to be increasingly less exclusively

interested in being achievers and women to be more willing to accept achievement as female-appropriate (Hoffman, 1974; Horner, 1972). As well, men have been found to show more need for Affiliation, and women, more task orientation (Lunneborg, 1972).

These results could be interpreted as indicative of rapidly merging conceptions of masculinity and femininity. However, Bem (1974) and Spence (1974) found that clear and consistent stereotypes still exist. Thus a more valid interpretation is probably that the acceptability of the degree of males displaying feminine traits and of females displaying masculine traits is changing.

To summarize, then, psychological theories have accepted the underlying assumption of the presence of masculinity and femininity in all individuals. However, behavior has been traditionally construed as having to be gender-appropriate to be healthy. Such an approach necessitated the firm control of the contrasexual aspect of one's nature. Moreover, the feminine side of the male's or female's bipolar nature, has been regarded by some traditional psychologists as inferior.

Jung in rejecting Freud's interpersonal conception of bisexuality in favour of an intrapsychic interpretation took a step in the direction of Androgyny. Erikson, in proposing the possibility of transcending sex-role stereotypes further moved in that direction. Social learning theorists, pointed to the sex-role restrictive nature of sex-typed behavior.

Reflecting the psychoanalytic biologically based conceptualizations of bisexuality and the social learning approaches to sex-role development, masculinity-femininity scales have been developed, until recently, as

bipolar.

Kagan (1971) pointed out that the social and political climate of the last fifty years have led to the need for sex-role appropriate behavior being challenged.

Bakan (1966), by attributing positive value to both the masculine and feminine aspects of individuals and arguing for the necessity for their balance and integration in both men and women in order to achieve individual and social viability, provided a theoretical framework from which predictions about sex-stereotype free behavior could be made.

Building upon the theoretical contentions of Bakan and Kagan, Bem (1974) put forth a theory of the differential adaptability of sex-typed, sex reversed and androgynous individuals. Bem developed a M-F scale, the BSRI, based on a two dimensional conceptualization of masculinity and femininity. The profile of scores obtained by this scale and a similar one developed by Spence (1975) demonstrated the validity of such an approach. Moreover, the concept of Androgyny was operationalized as the possession of a high degree of masculinity and femininity (Spence, 1975; Bem, 1976).

A central element of Bem's theory of Androgyny is that androgynous individuals should display the most situationally appropriate behavior while sex-typed individuals should display sex-role restrictive behavior. A review of the research relevant to this contention is presented below.

Review of Research on Masculinity-Femininity-Androgyny

Research findings support the assumption that a high level of sex-typing may be less desirable than a balance of masculinity and femininity in an individual. For example, high femininity in females has consistently

been correlated with high anxiety, low self esteem and low social acceptance (e.g. Cosentino and Heilbrun, 1964; Gall, 1969; Gray, 1957; Sears, 1970; Webb, 1963). Moreover, greater intellectual development has been quite consistently correlated with cross sex-typing, i.e. with masculinity in girls and with femininity in boys. Boys and girls who are more sex-typed have been found to have lower overall intelligence, lower spatial ability and lower creativity (Maccoby, 1966).

In addition, research based on Bem's concept of Androgyny is now being reported in the psychological literature. For example, an androgynous view of oneself has been found to be related to greater maturity in one's moral judgments (Block, 1973). Spence (1975) found that androgynous individuals are highest in self esteem. Other studies noted that androgynous persons report receiving more honours and rewards, dating more and having a lower incidence of childhood illnesses (Helmrich, Wilkhelm and Stapp, in press; Randoff and Helmrich, 1975, cited in Spence 1975).

Bem (1977) has reported findings in support of her theory. Bem hypothesized that whereas the highly masculine or highly feminine person might inhibit feminine or masculine behaviors respectively, a mixed or androgynous individual should freely and effectively engage in whatever the situation demands regardless of the stereotyped sex-appropriateness of that situation.

Two basic experimental approaches were used. The first tested the hypothesis of the avoidance of cross sex behavior in highly sex-typed people. As anticipated, the results indicated that highly masculine and highly feminine subjects were significantly more stereotyped in their

choices than androgynous or sex-reversed subjects. Furthermore, sex-typed subjects felt significantly greater discomfort if they have no choice but to perform the cross sex activity than androgynous or sex-reversed subjects.

The second approach focused on whether sex-role stereotyping also constricts an individual's ability to function in the domains of agency and communion.

In the agentic domain, an experiment testing behavior under a pressure to conform situation involving the judgment of the funniness of cartoons was designed. In the communal domain, three tests were created. The first involved playfulness or nurturance with a kitten, the second, playfulness or nurturance with a baby and the third, support to a lonely student who asks for nothing but a sympathetic ear.

The overall results of the above experiments indicated that the feminine male does well only in the communal domain while the masculine male does well only in the agentic domain, findings which support the theory of Androgyny.

Masculine women, as predicted, did not shun cross-sex activity and they maintained their independence under pressure to conform. But contrary to Bem's initial hypotheses, they proved to be effective in their ability to relate to the kitten, the baby and the lonely student.

Feminine women, as predicted, did not willingly perform cross-sex behaviors, reported discomfort when required to do so, and yielded to pressure of conformity. Contrary to expectation, however, feminine women did not initiate play with a kitten nor did they distinguish themselves in the nurturance of a human infant. Feminine women did, however, give

the most support to a lonely student seeking a sympathetic ear.

Both men and women who are androgynous willingly performed behaviors that are culturally considered inappropriate to their sex. Moreover, the competence of androgynous individuals crossed both the agentic and communal domains as predicted by Bem's theory of Androgyny.

In summary, androgynous people, or people possessing a high degree of both masculinity and femininity, have been shown to be the best adjusted and best functioning individuals regardless of the sex-role stereotype of the situation in which they find themselves.

Summary

Before presenting the problem and hypotheses, a recapitulation of the argument followed to this point will be presented.

The Motive to Achieve, or the need for Achievement (n Ach), as defined by McClelland, Atkinson, Clark and Lowell was first presented. The Motive to Achieve was described as the need, desire or disposition to strive for success at a task in which a standard of excellence is thought to apply. Attention was drawn to the implication in the definition of the generalizability of the motive to all individuals and to all relevant situations.

The provision of a quantitative value of the Motive to Achieve in an individual by the n Achievement Test devised by McClelland et al. was noted.

Two ways in which the validity of the measure and the motive have been consistently demonstrated in samples of men were presented. First, the demonstration of the expected increase in n Ach scores in men in response to the experimental achievement arousal condition which stresses intelligence and leadership ability from their scores under the neutral

condition designed to elicit normal motivation level was described. Second, a review of the expected relationships found between scores on the measure and other kinds of data such as problem solving effectiveness, task persistence and academic performance was presented. It was noted that these studies illustrate both the predictive power and theoretical validity of the n Ach concept.

The paucity of similar studies demonstrating n Ach arousal in women was contrasted to the results obtained with men. It was pointed out that due to this paucity the validity of the measure when applied to women and the generalizability of the theory of Achievement Motivation have been seriously questioned.

Two substantial approaches to explaining sex differences in n Ach which have been advanced were described. The first contends that motives such as the need for Affiliation and Fear of Success have a higher position in women's hierarchy of motives than the Motive to Achieve. The second suggests that while women have a need to Achieve, areas of achievement other than the intellectual are more relevant to them and that generalizability of the Motive as it was initially conceived has been wrongly ignored. It was demonstrated that the findings of the research associated with these two approaches do not support the suggestion that the Achievement Motive is male specific nor do they demonstrate that the need for social acceptance displaces the Achievement Motive in women. Rather, it was suggested that the research both highlights differences in the achievement roles adopted by men and women and demonstrates the existence of areas of n Ach other than intellectual.

It was argued, however, that the acceptance of the existence of other

achievement areas as an explanation for the inconsistencies in findings on women's n Ach arousal under the intellectual arousal condition necessitates the acceptance of intellectual achievement as female inappropriate. This generalization was deemed questionable in view of research which has found specific groups of women who do demonstrate n Ach score shifts under the intellectual arousal condition similar to those of men.

The failure of inter-sex studies to resolve the problem and the evidence of intra-sex differences in patterns of n Ach scores were noted as reasons for a shift in focus on the part of those investigators who do not accept intellectual n Ach as male specific to within group rather than across group differences. It was noted, however, that the across group studies, by exploring factors such as social acceptance and fear of success, pointed to the importance of women's acceptance of achievement as sex-role appropriate as a variable in sorting out n Ach scores among women.

The study of the relationship of n Ach score strength and sex of the stimulus cue figure was shown to yield an individual's perception of the gender appropriateness of n Ach. Several studies which investigated intra-group differences in sex-role orientation among women and their relationship to the acceptance of achievement motivation as sex-role appropriate were reviewed. These studies clearly demonstrated that sex-role orientation and perception of n Ach as male or female appropriate has considerable influence in patterns of n Ach scores.

Women with traditional sex-role orientations were shown consistently to view achievement striving as male but not female appropriate. Those

with less traditional sex-role orientations appeared to view achievement as either male or female appropriate or both. The inconsistent findings on the latter group of women have left the problem of intellectual n Ach arousal in women largely unresolved.

Accordingly, it was suggested that a theoretically valid approach to the differentiation of women's sex-role orientations was required. A framework for such a further differentiation is provided by the theory of Androgyny articulated by Bem (1979).

This theory posits that the balance of masculine and feminine traits in an individual may be used to predict behavior. Androgyny, the possession of a high degree of masculine and feminine traits signifies behavior that is not delimited or constrained by prevailing sex-role stereotypes about what is or what is not proper for each sex. In contrast, the behavior of sex-typed individuals would be strongly influenced by the sex-role appropriateness of a situation.

Traditionally, scales of masculinity/femininity have been conceived of as bipolar with masculine traits and feminine traits occupying the opposite end of the same continuum. It was suggested here that the use of a scale which takes into account the possession by the two sexes of varying degrees of both masculine and feminine traits, that is, a dual bipolar scale, would allow for a more profitable approach to understanding sex-related differences in Achievement Motivation. Furthermore, the Bem Sex Role Inventory, (BSRI, Bem, 1976) a dual bipolar scale which operationalizes the concept of Androgyny, was found to be appropriate for the present study.

Thus, this paper introduces sex-role identity as an additional variable

to be considered in reference to behavior in achievement-related activities. In addition, the effects of two experimental conditions, arousal and neutral conditions, and sex of the stimulus cue figure, on n Ach arousal are considered. It was decided to limit the present study to the investigation of female subjects. Accordingly, the problem may be stated as follows:

What is the effect of sex-role identity, sex of the stimulus cue figure and neutral and intellectual arousal conditions on n Ach scores in women?

In the following subsection a brief rationale for and statement of the hypotheses will be presented.

Rationale for Hypotheses

Bem has argued that a balance of masculinity and femininity in an individual results in the cross-situational adaptability of that individual. Research has shown that androgynous individuals do, in fact, engage in situationally effective behavior without regard for its stereotype as masculine or feminine. Such behavior has been attributed to the relatively anxiety free 'healthy' nature of the androgynous person.

Bem has stated: "masculine and androgynous subjects should both 'do well' when the situation calls for instrumental behavior", (Bem, 1972, p.10). Thus, it is hypothesized here that androgynous women should display what has been repeatedly referred to as 'masculine' intellectual strivings in a situation designed to elicit such behavior. The anxieties over loss of femininity or social rejection which underly fear of success according to the theory of social role behavior and Horner (1968) should not affect androgynous women. In addition, in Moss and Kagan's (1963)

terms, the thematic content of androgynous women's stories should not be influenced by their conception of the appropriateness of different behaviors to the social role of the hero of the stimulus cue. Rather, androgynous women, that is, women high in both masculine and feminine traits should show an increase in the strength of their Motive to Achieve as measured by McClelland's n Ach Test from neutral to arousal condition.

Masculine women should show an increase in n Ach scores under arousal conditions because the Achievement Motive is in keeping with their agentic orientation.

No differential response to male or female stimulus cue figures is hypothesized for androgynous or masculine women since these women should view achievement as appropriate to either sex.

Feminine women should not display an increase in n Ach scores from neutral to arousal conditions. However, feminine subjects should, as previous studies suggest, score higher in n Ach under both neutral and arousal conditions in response to male pictures rather than female pictures since they would attribute intellectual achievement as male-appropriate.

Because the characteristics of low masculine-low feminine or undifferentiated persons have yet to be fully understood, no predictions with respect to this category of women will be included.

Hypotheses

The following hypotheses are formulated based on the above theoretical rationale. Predictions about the behavior of masculine, feminine and androgynous women are grouped into two areas in which differences should be evidenced. These are a) arousal in n Ach;

b) strength of response to male and female stimulus cue figures.

H1a The Achievement Motivation of androgynous women will increase significantly from the neutral to the arousal condition.

1b There will be no significant difference in the Achievement Motivation strength of androgynous women in response to male and female stimulus cue figures.

H2a The Achievement Motivation of masculine women will increase significantly from the neutral to the arousal condition.

2b There will be no significant difference in the Achievement Motivation strength of masculine women in response to male and female stimulus cue figures.

H3a There will be no significant difference in the strength of Achievement Motivation of feminine women under the neutral and arousal conditions.

3b The Achievement Motivation of feminine women will be significantly stronger in response to male stimulus cue figures than in response to female stimulus cue figures.

CHAPTER 2

EXPERIMENTAL DESIGN

An experiment was carried out in order to determine the effect of sex-role identity and sex of the stimulus cue figure on the strength and arousal of the Achievement Motive in college women. The design of the study is outlined below.

The sample and population are first described. The measuring instruments and experimental procedures are then discussed. Finally, the statistical design and type of analysis used to test the hypotheses are presented.

Population and Sample

The majority of validating studies on the Motive to Achieve have involved male subjects drawn from college populations. In addition, the research described in Chapter I which has sought to explain the anomolous results obtained with female subjects has also concentrated on the college population. College women were the target population of the present investigation so that findings would be comparable to those of previous studies.

A letter was written to chairpersons of a wide range of departments at the University of Ottawa, Carleton University and Algonquin College in Ottawa, Canada, requesting the participation of students in the study. It was felt that the participation of women from diverse subject concentrations would insure that the findings would be based on as representative a sample as possible.

In most cases, permission was granted to approach students at the end of class time to ask for volunteers. The exact nature of the study was not revealed to the prospective participants so as not to influence the findings. Students, however, were told that they would be given a detailed explanation of the investigation immediately following the administration of the tests. If at least 15 students volunteered, a time and date were set for testing.

The Secretarial Skills, Business and Horticulture Departments of Algonquin College and the Teacher Training Department at the University of Ottawa kindly offered class time for the testing of subjects from these areas of study. Medical students were recruited with the aid of first and second year class presidents.

The final sample consisted of 280 female students of Medicine, History, Journalism, Architecture, Education, Secretarial Skills, Business, Nursing and Horticulture. A breakdown of the numbers of students tested from each of these faculties is presented in Table I.

It is important to note that 32 per cent of the subjects were volunteers. The possibility of the type of women who volunteer being more instrumental or agentic, that is, 'masculine' had to be considered. However, the median Masculinity and Femininity scores for this sample were 4.55 and 5.10 respectively, scores which are similar to those reported by Bem (1976) for two separate samples of women. The median scores of those samples were Masculinity 4.57, Femininity 5.01 and Masculinity 4.55, Femininity 5.08.

TABLE I

Number and Percentage of Subjects in Sample by Faculty

Faculty	Number	Percentage of Sample
Nursing	15	5
Secretarial Skills	81	29
Education	61	22
Architecture	5	2
Business	28	10
Arts	26	9
Horticulture	20	7
Journalism	16	6
Medicine	28	10
TOTAL	280	100

The women in this study were at the second to fifth year levels of their program of study. The average age of participants was 21 years and the standard deviation was 3.9 years.

Since it has been suggested that sex-role development has much in common with the more general process of cognitive ego development (Kohlberg, 1966; Block, 1973; Pleck, 1975) it was felt that women from more senior levels of their programs would likely have reached a more mature level of sex-role identity.

To the extent that the women tested represented a wide spectrum of areas of study, the results can be generalized tentatively to college women of the second to the fifth year levels.

Measuring Instruments

In order to adequately test the research hypotheses, measures of the Motive to Achieve and sex-role identity were required. The n Achievement Test and the Bem Sex Role Inventory were selected for this purpose. In the next section these tests are described and their validity and reliability are discussed.

The n Achievement Test

The n Achievement Test was designed specifically to provide a quantitative score of the Motive to Achieve as conceptualized by McClelland, Atkinson, Clark and Lowell (1953). Moreover, this test is the instrument most often used in comparable experiments with men. As such, the n Achievement Test was an obvious choice for the measure to be employed in the present investigation.

As was briefly discussed in the previous chapter, the n Achievement Test is a modified version of Murray's Thematic Apperception Test (TAT).

This test, however, provides a quantitative measure of a single motive, that is, the need for Achievement.

The n Achievement Test requires that subjects respond in the form of written imaginative stories to a set of four or six pictures projected on a screen. The same four leading questions appear on the subject's answer sheets to guide them through the plot of each story. The stories written are analyzed by examiners by a process of content analysis. The instructions and answer sheets appear in the Test Booklet in Appendix A and an explanation of the method of content analysis developed by McClelland, Clark, Atkinson and Lowell (1953) is presented in Appendix B.

Test-Retest Reliability

The n Achievement Test is based on the assumption that n Ach scores are chiefly determined by the controlled orientation of a testing situation and by a stable personality characteristic. Accordingly, absolute scores as well as relative order of individual scores should remain the same in response to different pictures and over time. Research has produced contrary findings. The n Ach measure tended to yield low co-efficients of test-retest reliability.

Lowell (1950) did a test-retest study with a one week interval using two sets of pictures considered to be roughly equivalent (Atkinson, 1958). The two sets of scores obtained were found to have a product-moment correlation of 0.22, a non-significant result. However, the two sets of scores did agree to the extent of 72.5 per cent in grouping subjects above or below the median. Thus absolute scores and relative rankings of individuals were not preserved. However, the crude positions of the individuals defined as simply above or below the median were maintained.

The lack of stability of individual scores found by Lowell, suggests that the TAT n Ach be used for the establishment of high and low n Ach groups rather than for individual diagnoses. Other studies on Achievement Motivation have supported this contention.

Birney (1959) reported that the intercorrelations for a single set of subjects tested in August, 1955, October, 1956, February, 1957 and April, 1957, ranged from +0.03 to +0.56. Only two of these findings were significant.

Morgan (1953) reported a coefficient of 0.64 over a five week period. Haber and Albert (1958) found test-retest coefficients of 0.36 for pictures which elicited a few n Ach stories and 0.59 for pictures which elicited a relatively large number of such stories.

Kagan and Moss (1959) have studied the stability of Achievement Motive scores on three testings over a period of six years. All of the three correlations are positive and two of them are significant.

Explanations of the generally low test-retest reliability focus on the likelihood of genuine personality changes occurring over long intervals and of changes in mood or immediate situational influences over short intervals, (e.g., Anastasi, 1971; Rosenzweig, 1951). However, the weight of evidence does show a small positive relationship over periods as long as six years. As Brown (1965) points out:

> This is a rather remarkable outcome. The measure is a twenty minute sample of the contents of consciousness, a tiny spinal tap from the lifetime span. It is remarkable that an assay of so small a quantity of material should yield results having any stability at all. (p.434).

In summary, McClelland's system for measuring the Motive to Achieve has received little support for making precise predictions about an

individual's n Ach. However, the measuring instrument has found support for making group comparisons. In the present study, groups will be compared so that the use of McClelland's n Achievement Test seems appropriate.

Scoring Reliability

The test-retest reliability of McClelland's n Ach Test was discussed in the previous subsection. Scoring reliability judged by many critics to be more important than test-retest reliability in work involving projective techniques (Anastasi, 1971; Birney, 1968; Murstein, 1963; Rosenzweig, 1951) will now be examined.

The necessity for judges to agree on the scoring of fantasy content is emphasized by Atkinson (1958). The interscorer reliability coefficient is a correlation indicating the degree of agreement between a new and an established scorer. In a review of 14 studies employing McClelland's scoring system, Feld and Smith (1958) reported interscorer reliabilities ranging from 0.66 to 0.96 and score-rescore reliabilities of 0.88 to 0.95.

Murstein (1963) points out what a remarkable accomplishment the high scoring reliability of McClelland's measure of n Ach is for a projective instrument.

> McClelland's scoring system is a remarkable accomplishment for a projective instrument. It is attributed to the clarity of direction and numerous examples of scoring which have been published, as well as to the admonition to score only overt responses without inference beyond that which is written in the story. (p.35)

Validity

The previous subsection reported that the results of test-retest reliability studies of the n Achievement Test support the use of the instrument for group comparisons while the scoring reliability has been

shown to be remarkably high for a projective measure. The question of whether the n Ach Test actually measures the need for Achievement, that is, whether the test is valid, remains to be answered.

Brown (1965) points out that the nature of a personality disposition is such that no single criterion for a measure of the motive exists. Accordingly, the n Ach Test gains construct validity whenever scores on the measure relate to scores on other measures of behavior in a manner consistent with our conception of the Achievement Motive. For example, individuals with a strong Achievement Motive should do better work than individuals of comparable ability with a weak Motive.

As has been reported in the first chapter, a great deal of experimental research has been conducted on the Motive to Achieve which has yielded support of the construct validity of the measure.

These studies related differences in strength of Achievement Motive to such behaviors as performance (Lowell, 1952), persistence (Atkinson and Feather, 1966), problem solving effectiveness (French, 1958; French and Thomas, 1958), learning (e.g. Hurley, 1957; Johnson, 1955) and recall (Atkinson, 1953). The connections between Achievement Motive strength and many other theoretically related variables have been explored (e.g. Atkinson, 1954; French, 1956; Atkinson and Reitman, 1958). Thus the construct validity of the n Achievement Test is fairly well established, but almost exclusively on male subjects.

In summary, the n Achievement Test has been found unsuitable for making precise predictions about the standing of individuals on n Ach. However, the stability of the measure for purposes of group comparisons is fairly well established.

The Bem Sex-Role Inventory

In order to adequately test the hypotheses of this study relative to differential achievement needs of androgynous, sex-typed and sex-reversed individuals, a measure which was designed to differentiate between these three groups was needed. The BSRI is such a measure.

The Bem Sex-Role Inventory (BSRI, Bem, 1974) was built on the assumption that sex-typed individuals will behave in accordance with a culturally determined sex-role while androgynous individuals will engage freely in both 'masculine' and 'feminine' behaviors. The purpose of the BSRI is to distinguish between sex-typed and androgynous individuals. As such, the measure allows for the possibility of an individual being balanced in both masculinity and femininity or being distinctly one or the other.

To eliminate the inverse relationship between masculinity and femininity assumed in traditional sex-role scales (e.g. M-F Scale of California Psychological Inventory, Gough, 1964), the BSRI includes a separate Masculinity and Femininity Scale. Each of these scales consists of 20 personality characteristics.

Moreover, a Social Desirability Scale, consisting of an additional 20 sex-role neutral items, provides a neutral context for the Masculinity and Femininity Scales.

The method of item selection for each of these scales was based on the assumption that sex-typed individuals are highly attuned to and conform to the cultural definitions of sex appropriate behavior. Accordingly, items for the BSRI were selected not on the basis of sex differences in self report as most previous masculinity-femininity inventories have

done, but on the basis of the ratings of samples of male and female students who judged the culturally defined desirability of the various attributes for each of the two sexes.

Four hundred personality characteristics were included in the initial pool of items. Of these, 200 were deemed by Bem and several students to be both positive in value and masculine or feminine in tone. An additional 200 'neutral' characteristics, half of which were considered positive in value and half negative, were included in the pool to insure that the inventory would not simply be tapping a general tendency to endorse socially desirable traits.

These characteristics were rated for desirability for either man or woman on a scale of 1-7 by four independent samples of judges, two of which were male and two female. No judge was asked to rate both.

A personality characteristic was defined as masculine or feminine and thus eligible for the Masculinity or Femininity Scales of the BSRI if it was judged to be significantly more desirable in American society for one sex than the other by all four samples of judges.

A personality characteristic qualified as neutral and thus eligible for the Social Desirability Scale if it was independently judged by both males and females to be no more desirable for one sex than the other and if male and female judges did not differ significantly in their overall desirability judgment of that trait.

Scoring

When writing the BSRI, subjects rate themselves on a scale of one (never or almost never true) to seven (always or almost always true) on 20 masculine, 20 feminine and 20 neutral personality traits, which are

interspersed in the one test sheet. The instructions and BSRI test are presented in the Test Booklet in Appendix A.

The masculinity and femininity scores of a subject are the mean self rating for all endorsed masculine and feminine items respectively. Both can range from 1-7. The two scores are independently calculated.

It has been stated in Chapter I that the initial scoring procedure devised by Bem in 1974 set forth a definition of Androgyny based upon the t-ratio between an individual's endorsement of feminine and masculine attributes with small t-ratios indicating Androgyny and large t-ratios (significant differences) indicating sex-typing. This scoring system emanated directly from a theory which posited the existence of three sex-role groups, sex-typed, sex-reversed and androgynous.

This procedure rated persons scoring high on both the Masculinity and Femininity Scales and persons scoring low on both these scales as androgynous since both groups displayed small t-ratios. Spence (1975) pointed out that this procedure was possibly obscuring critical differences between the high-high and low-low groups. Empirical findings (Spence, 1975; Bem, 1976) on self esteem did indicate the adviseability of the further differentiation of the groups. Accordingly, Bem (1976) revised her scoring system to differentiate between androgynous and undifferentiated individuals.

The procedure now employed divides subjects on the basis of a median split on both the masculine and feminine dimensions. Thus four distinct groups of individuals are differentiated, sex-typed or high-low, sex-reversed or low-high, androgynous or high-high and undifferentiated or low-low. The system may be schematically represented as follows:

FIGURE I

Schema for Scoring BSRI

Femininity Score	Masculinity Score: Above Median	Masculinity Score: Below Median
Above Median	Androgynous	Feminine
Below Median	Masculine	Undifferentiated

Reliability

The internal consistency of the BSRI was estimated by Bem (1974) by computing the alpha coefficient separately for the Masculinity and Femininity Scales. The coefficients of reliability were 0.86 for masculinity and 0.80 for femininity.

Test-retest reliability reported over a four week interval yielded masculinity, femininity and androgyny product moment correlations of 0.90, 0.90 and 0.93, respectively. Although based on the three groups differentiated by the original scoring system (1974) these results demonstrate the stability of individual scores over time.

Validity

The previous subsection reported that the BSRI has a high degree of test-retest reliability and is internally consistent. The validity of the measure will now be examined. Does the BSRI discriminate between those individuals who restrict their behavior in accordance with sex stereotypes and those who do not?

Several studies demonstrating the construct validity of the BSRI

have been described in Chapter I. These will be briefly summarized below.

Sex-typed subjects have been shown to be significantly more likely than androgynous or cross sex-typed subjects to prefer sex-appropriate activity and to resist sex-inappropriate activity, even when such choices cost them money. Moreover, sex-typed individuals report greater psychological discomfort and more negative feelings among themselves when actually engaging in cross sex behavior (Bem and Lenney, 1976).

A series of studies on instrumental and expressive functioning provides additional support for the validity of the BSRI. These studies demonstrated that only androgynous individuals consistently displayed high levels of behavior in both the agentic and communal domains, while non-androgynous individuals were frequently low in one of the two domains (Bem, 1975; Bem, Martyra, and Watson, 1976).

Thus, the BSRI does differentiate between persons who restrict their behavior in accordance with cultural definitions of desirable behavior for men and women and those who do not. It may, therefore, be said that the construct validity of the test has been demonstrated.

Collection of the Data

The procedure followed in the administration of the present study is discussed in this section under the following headings: "Division of the Sample", "Neutral and Arousal Conditions", "General Administrative Procedures" and "Scoring of Data".

Division of the Sample

Research studies on n Ach have followed one of two procedures. The first procedure requires that the same subjects be tested under both the

neutral and arousal conditions at a one week interval (e.g. Lowell, 1950). The second technique involves the random halving of a sample with each half being assigned to one or the other condition (e.g. Veroff, 1950; Wilcox, 1951). The latter procedure was followed in the present study for a number of reasons. First, it was more likely that college students would agree to participate in a single one hour testing session than in two such sessions at a one week interval. Also such a procedure eliminates the possibility of test-retest interference and the need to use different sets of pictures for neutral and arousal conditions.

Since the present sample was drawn from nine different faculties, participants from each subject group were randomly assigned to either the neutral or arousal condition in order to maximize the equivalence of the final two groups being compared.

The Neutral and Arousal Conditions

As has been previously stated, no attempt is made in the neutral condition to strengthen or weaken the Motive to Achieve. The condition is designed to elicit normal Achievement Motivation level in an everyday school setting. Accordingly, at the beginning of the testing session, subjects were informed that some new tests were being developed for which norms had to be established. The serious cooperation of all participants was requested so that the results would be meaningful. The subjects were not told what psychological capacities the tests would measure.

After this attempt to gain the cooperation of the students, the n Achievement Test was administered followed by the BSRI.

In contrast to the neutral condition, the arousal condition is designed to strengthen the Motive to Achieve. This is usually done in two ways.

First, the general instructions preceding the tests emphasize and encourage quality of performance and competition with a standard of excellence. Second, a verbal test is administered prior to the n Achievement Test.

In the present study, subjects were informed that they were going to write a series of tests which were also being given to women from various other universities and community colleges. Subjects were told that their results would be compared to those of the other groups tested.

Subjects were then told that vocabulary has been found to be the best single index of intelligence and that the first test they were going to write measured facility with words, which is one aspect of vocabulary. The importance of doing well was emphasized.

Students were then instructed in how to do an adapted version of Lowell's Scrambled Words Test (1952). This test consists of 200 different four letter words taken from the first 1000 most frequently used words in the Thorndike Lorge Word List (Thorndike and Lorge, 1944). The letters in each word were systematically rearranged and the scrambled words reproduced 20 to a page.

The instructions emphasized working quickly and following instructions precisely. Subjects were allowed two minutes to complete a page and were required to turn the page promptly when told to do so.

It should be noted that the Scrambled Words Test did not serve as a criterion measure in this study. The sole purpose for its use was to arouse the Achievement Motive of subjects. The Scrambled Words Test was chosen since it had been used in previous research on n Achievement and had been found to be effective in significantly arousing Achievement

Motivation in both men and some women (e.g. Lowell, 1952; French and Lesser, 1964). A copy of the test and its instructions is included in the Test Booklet in Appendix A.

Upon completion of the Scrambled Words Test, subjects were given the same instructions for the n Achievement Test as had been given under neutral conditions. Moreover, the identical procedure for the administration of the n Achievement Test and BSRI were followed under both conditions. The general administrative procedures used under both the neutral and arousal conditions are described in the next section.

General Administrative Procedures

To preclude possible interactive effects between the gender of the subjects and the gender of the experimenter, all subjects were tested by female experimentators. The author supervised the arousal condition while one of three other women of similar age and marital status supervised the neutral condition.

Test Booklets were distributed and subjects were asked to fill in their name, age, faculty and the date in the space provided on the cover sheet.

Each Test Booklet contained written instructions for the tests included. These instructions had been prerecorded on tape as well. In addition, the tape included the more general instructions used to help create the neutral or arousal condition. The rationale underlying prerecording was to keep the voice, intonation and language used in the instructions constant for all participants tested under either condition.

The n Achievement Test was the first test written by subjects under the neutral condition but followed the Scrambled Words Test under the

arousal condition as explained above. The test instructions (adapted from Veroff, 1950) were played while students followed the printed instructions in their booklets.

The room was darkened for 20 seconds while the first picture was projected on a screen. Subjects were then instructed to begin writing their stories using the four questions on the answer sheet as a guide. Four minutes were allotted to a story. After each minute subjects were instructed to go on to the next question. Thirty seconds before the end of the time allowed for the story, subjects were told that it was time to finish. Fifteen seconds more than the time allotted was allowed to enable students to complete their stories. The same procedure was followed for the three remaining pictures.

The four pictures used in this study included two depicting male stimulus cue figures and two depicting female stimulus cue figures. Pictures depicting both sexes were necessary in order to adequately test the research hypotheses predicting differential responses to the male and female stimulus cue figures.

Of the two male pictures chosen for this study, one depicts two men (inventors) in a shop working on a machine while the other shows a boy in a checked shirt with an open book in front of him. These are two of the pictures which have been repeatedly employed by McClelland and his coworkers (1953) for the measurement of n Ach in a variety of studies. Moreover, these pictures were recommended by Atkinson (1958) for use in research on Achievement Motivation.

One of the two female pictures used in this study depicts a group of men and women in an office where the central figure is a women at

desk. The second stimulus cue depicts two women in a laboratory. These pictures were chosen because of their intellectual achievement content and the proven ability of the latter picture to pull strong n Ach in women (Veroff, Atkinson, Feld and Burin, 1960; Alper, 1971).

The order of the presentation of pictures has been shown repeatedly to have no significant effect on n Ach scores (Veroff, 1950; Lesser, Krawitz and Packard, 1963; Alper and Greenberger, 1967). Accordingly, the same sequence of pictures was used for all subjects: first, two men in a machine shop, then, the woman at a desk in an office, then the boy at the desk and finally, the two women in the laboratory.

After completing the n Achievement Test, subjects were asked to rate themselves on the BSRI in the manner described in the instructions. The standard 20 minute period was allowed for the completion of this test.

The BSRI appeared last in the test booklets of subjects tested under both the neutral and arousal conditions so that the sex-role identity content of the test would not influence the fantasy content of the subjects' stories.

The administration of the testing was carried out without incident.

Scoring the Data

The stories of all subjects were scored without knowledge of the subject's BSRI score, testing condition and personal data.

All the stories were scored by the author whose scoring reliability with the training materials scored by experts (Atkinson, 1958) had been established at the .95 level. A second scorer, who had acquired the requisite level of skills through work with the practice materials, scored the stories of sixty subjects randomly selected from the sample.

The interscorer reliability between the experimenter and the second scorer was 0.87.

The BSRI was scored in accordance with the procedures outlined in the scoring manual (Bem, 1976).

Since the Masculinity and Femininity Scales of the BSRI are separate, two mean scores for each subject were calculated, one for each scale. A distribution of the individual means for each scale was then used to calculate the group medians for the masculine and feminine dimensions. The medians for the Masculinity and Femininity Scales were 4.551 and 5.097 respectively.

The hypotheses of this study pertain to three of the four sex-role identity groups differentiated by the BSRI. These are the masculine women (above 4.55, below 5.10), the feminine women (above 5.09, below 4.55), and the androgynous women (above 5.09, above 4.55). The scores of undifferentiated women, that is, subjects who scored below the median on both the Masculinity and Femininity Scales, were not investigated since too little is known at present about such individuals to make predictions about their behavior.

On the basis of the median split, the androgynous group consisted of 75 subjects, the masculine group of 61 subjects and the feminine group of 66 subjects. Thus the scores of 202 of the original 280 subjects were used in the statistical analysis of the data. One hundred and three of the 202 subjects were tested under the neutral condition and the remaining 99 subjects under the arousal condition. The subjects' raw scores on the n Achievement Test relative to the male and female stimulus cue figures are presented according to sex-role group under the neutral and arousal

conditions in Appendix C.

Statistical Design

The present investigation focuses on the effects of testing condition, sex of the stimulus cue figure, and sex-role identity as determined by BSRI on the n Ach scores of women as derived from the n Achievement Test.

The independent variables are condition (A), sex-role identity (B) and sex of the stimulus cue figure (C). Factor (A) has two levels, the neutral (A_1) and arousal (A_2) conditions. Factor (B), sex-role identity has androgynous (B_1), feminine (B_2), and masculine (B_3) groups differentiated within it. Factor (C), sex of the stimulus cue figure consists of two levels, female (C_1) and male (C_2). Figure II schematically presents the experimental design.

FIGURE II

Experimental Design

	A_1			A_2		
	B_1	B_2	B_3	B_1	B_2	B_3
C_1	n=41	n=31	n=31	n=34	n=35	n=30
C_2	n=41	n=31	n=31	n=34	n=35	n=30

The hypotheses of the present study did not predict simple main effects or overall interactions between factors. Rather, only six of the possible K(K-1)/2 (i.e. 66) pairwise contrasts of the design were of

interest. Accordingly, the Dunn multiple comparison procedure was used to make all planned contrasts (Kirk, 1968; Keith, 1972).

In discussing such procedures, Kirk (1968, p.73) states:

> It is not necessary to perform an overall test of significance prior to carrying out planned orthogonal t tests. An overall test using an F ratio simply answers the question, "Did anything happen in the experiment?" If an experimenter has a specific set of orthogonal comparisons for which statistical hypotheses have been advanced, he is not interested in answering the general question, "Did anything happen in the experiment?" Rather, his interest is in answering a limited number of specific questions from the data.

This procedure, based on student's t distribution consists of splitting up the level of significance (α) among the set of six planned comparisons. That is, the probability of a type I error occurring in any of the six contrasts is still less than 0.05.

In order to explore interesting comparisons suggested by an inspection of the data, the Dunn procedure was again employed. The necessary adjustment in values for the added number of contrasts was made.

The results of the investigation described here are presented in the next chapter.

CHAPTER 3

PRESENTATION AND DISCUSSION OF RESULTS

This chapter presents and discusses the results of the empirical investigation that is described in the previous chapter. The chapter is organized under the following subheadings: "Descriptive Data", "Results of the Dunn Test", "Results of Post Hoc Procedures", "Predicted Results" and "Contrary Findings".

Descriptive Data

In order to provide a context within which to consider the descriptive data and the subsequent results of their analysis, the hypotheses of the present investigation are reiterated below.

Two sets of hypotheses were put forth. The first set centres on the arousal of n Ach. The three hypotheses are:

$H1_a$ The n Ach scores of androgynous women will increase significantly from the neutral to the arousal condition.

$H2_a$ The n Ach scores of masculine women will increase significantly from the neutral to the arousal condition.

$H3_a$ There will be no significant difference in the n Ach scores of feminine women from the neutral to the arousal condition.

The second set of hypotheses predicts differential response by the three sex-role groups to male and female stimulus cue figures. These are:

$H1_b$ There will be no significant difference in the n Ach scores of androgynous women in response to male and female stimulus cue figures.

$H2_b$ There will be no significant difference in the n Ach scores of

masculine women in response to male and female stimulus cue figures.

$H3_b$ The n Ach scores of feminine women will be significantly higher in response to male than in response to female stimulus cue figures.

Table II presents the overall results, that is, the means and standard deviations of n Ach scores by condition, sex-role group and sex of the stimulus cue figure.

Table III presents the means and standard deviations relevant to the first set of hypotheses on n Ach arousal. It may be noted that the direction of the results for androgynous and feminine women is that predicted by the corresponding hypotheses, Hl_a and $H3_a$. The n Ach scores of masculine women, however, show a drop under the arousal condition, contrary to prediction ($H2_a$).

Table IV presents the means and standard deviations relevant to the second set of hypotheses on differential responses of the three sex-role groups to the sex of the stimulus cue figure. Again, it may be noted that the results are in the directions predicted by hypotheses 1b, 2b and 3b.

The Dunn Test was performed to ascertain whether these findings meet the criteria for statistical significance. The results of that analysis are presented next.

Results of the Dunn Test

In order to determine the effect of the arousal condition on the n Ach scores of masculine, feminine and androgynous women, the Dunn procedure (Kirk, 1968; Keith, 1972) was employed. The following formula was used to establish confidence intervals for each comparison:

TABLE II

Means and Standard Deviations of n Ach Scores by Condition, Sex-Role Group and Sex of the Stimulus Cue Figure

	NEUTRAL			AROUSAL		
	Androgynous	Feminine	Masculine	Androgynous	Feminine	Masculine
Female	n=41	n=31	n=31	n=34	n=35	n=30
Picture	m= 3.29	m= 3.64	m= 4.77	m= 4.35	m= 3.80	m= 3.90
	SD= 3.61	SD= 3.24	SD= 3.28	SD= 3.23	SD= 3.93	SD= 3.17
Male	n=41	n=31	n=31	n=34	n=35	n=30
Picture	m= 3.85	m= 5.10	m= 4.58	m= 4.62	m= 4.23	m= 3.97
	SD= 3.30	SD= 3.47	SD= 4.27	SD= 3.29	SD= 4.02	SD= 3.20

TABLE III

Means and Standard Deviations of n Ach Scores by Condition, and Sex-Role Group

	Neutral	Arousal
Androgynous	n=41	n=34
	m= 3.57	m= 4.49
	SD= 3.46	SD= 3.26
Masculine	n=31	n=30
	m= 4.67	m= 3.94
	SD= 3.74	SD= 3.18
Feminine	n=31	n=35
	m= 4.37	m= 4.01
	SD= 3.36	SD= 3.97

TABLE IV

Means and Standard Deviations of n Ach Scores by Sex of the Stimulus Cue Figure and Sex-Role Group

	Female Picture	Male Picture
Androgynous	m=3.82	m=4.23
	SD=3.42	SD=3.30
Masculine	m=4.33	m=4.28
	SD=3.78	SD=3.19
Feminine	m=3.73	m=4.67
	SD=3.58	SD=3.74

$$\left[(C_j(\overline{X}_j) + C_{j'}(\overline{X}_{j'}) + \ldots + C_{j''}(\overline{X}_{j''}) \right] \pm t', D\alpha/2; C, v \sqrt{MS_{error}\left[\frac{(C_j)^2}{n_j} + \frac{(C_{j'})^2}{n_{j'}} + \ldots + \frac{(C_{j''})^2}{j_{j''}} \right]}$$

This formula is explained in Kirk (1968, pp. 79-81). If the interval established does not span zero the differences are significant. The results of the mean difference contrasts are presented in Table V.

With respect to androgynous women, the n Ach scores did increase from neutral to arousal condition. However, the increase was not found to be statistically significant. Thus, experimental hypothesis 1a was not supported by the present results.

The n Ach scores of masculine women were not found to be significantly higher under the arousal condition contrary to prediction 2a. The drop in scores evidenced under this condition was not found to be significant either.

With respect to feminine women, no significant difference was found between their n Ach scores in the neutral and arousal conditions. Thus, hypothesis 3a was confirmed.

In order to determine the statistical significance of the second set of hypotheses, the above formula was once again used. The results of the mean difference contrasts are presented in Table VI.

No significant difference was found in the n Ach scores of androgynous women to male and female pictures. Thus, hypothesis 1b was confirmed.

TABLE V

Estimates of Contrasts of Means for Neutral and Arousal Conditions by Sex-Role Group

	Contrast $\hat{\psi} = \left(\frac{\bar{X}_j + \bar{X}_{j'}}{2} - \frac{\bar{X}_{j''} + \bar{X}_{j'''}}{2}\right)$	$d = {}_{t',D\alpha/2;Cv}\sqrt{MS_{Error}\left[\frac{(C_j)^2}{n_j} + \frac{(C_{j'})^2}{n_{j'}}\right]}$	$\hat{\psi} \pm d$ Confidence Interval	
			Lower Limit	Upper Limit
Androgynous Women	+0.912	1.762	+2.674	-0.850
Masculine Women	-0.735	1.953	+1.218	-2.688
Feminine Women	-0.357	1.874	+2.517	-2.231

Note: 1. For all contrasts ${}_{t',D\alpha/2} = 2.67$

$C = 6$

$v = 196$

$MS_{Error} = 8.096$

$C_j;C_{j'} = 1;-1$

$\alpha = 0.05$

2. The means and sample sizes used are from Table II

TABLE VI

Estimates of Contrasts of Means for Male and Female Stimulus Cue Figures by Sex-Role Groups

Contrast $\hat{\psi} = \left(\frac{\bar{X}_j + \bar{X}_{j'}}{2} - \frac{\bar{X}_{j''} + \bar{X}_{j'''}}{2}\right)$	$\hat{\psi}$	$d = {}_{t'}D\alpha/2;Cv \sqrt{MS_{Error}\left[\frac{(C_j)^2}{n_j} + \frac{(C_{j'})^2}{n_{j'}}\right]}$	$\hat{\psi} \pm d$ Confidence Interval	
			Lower Limit	Upper Limit
Androgynous Women	+0.413	1.280	1.69	-0.87
Masculine Women	-0.063	1.423	-1.486	+1.36
Feminine Women	+0.94	1.370	-0.43	+2.31

Note: 1. For all contrasts ${}_{t'}D\alpha/2 = 2.67$

$C = 6$

$v = 196$

$MS_{Error} = 17.304$

$C_j;C_{j'} = 0.5;+0.5$

$\alpha = 0.05$.

2. The means and sample sizes used are from Table II

TABLE VII

Estimate of Contrast of Mean Scores for Male and Female Stimulus Cue Figures of Feminine Women Under Neutral Condition

Contrast $\hat{\psi} = \left(\bar{X}_j - \bar{X}_{j'}\right)$	$d = {}_{t'}D\alpha/2;Cv \sqrt{MS_{Error}\left[\frac{(C_j)^2}{n_j} + \frac{(C_{j'})^2}{n_{j'}}\right]}$	$\hat{\psi} \pm d$ Confidence Interval	
		Lower Limit	Upper Limit
Feminine Women +1.45	1.42	2.87	0.03*

Note: 1. For all contrasts ${}_{t'}D\alpha/2 = 2.77$

$C = 8$

$v = 196$

$MS_{Error} = 17.304$

$C_j;C_{j'} = 0.5;0.5$

$\alpha = .05$

2. The means and sample sizes used are from Table II

3. * significant $P < 0.05$

TABLE VIII

Estimate of Contrast of Mean Score of Androgynous and Masculine Women under Neutral Condition

Contrast $\hat{\psi} = \left(\frac{\bar{X}_j + \bar{X}_{j'}}{2} - \frac{\bar{X}_{j''} + \bar{X}_{j'''}}{2} \right)$	$d = t', D\alpha/2;Cv \sqrt{MS_{Error} \left[\frac{(C_j)^2}{n_j} + \frac{(C_{j'})^2}{n_{j'}} \right]}$	$\hat{\psi} \pm d$ Confidence Interval	
		Lower Limit	Upper Limit
Masculine-Androgynous Women 1.104	1.82	2.924	-0.71

Note: 1. For all contrasts $t', D\alpha/2 = 2.77$

$C = 8$

$v = 196$

$MS_{Error} = 8.096$

$C_j;C_{j'} = +1;-1$

$\alpha = 0.05$

2. The means and sample sizes used are from Table II

Similarly, hypothesis 2b relating to masculine women was supported.

The difference in scores of feminine women to male and female pictures ($H3_b$) was not found to be significant at the 0.05 level. The lower limit of the interval, however, is close enough to 0 to indicate that the results approach significance given that the use of simultaneous contrasts is a statistically conservative procedure.

The results of post hoc procedures are presented in the following subsection.

Results of Post Hoc Procedures

A further inspection of the data reveals two interesting differences. First, the difference in n Ach scores of feminine women in response to male and female pictures is greater under the neutral condition than under the arousal condition. Second, the scores of masculine women are considerably higher than those of androgynous women under the neutral condition. A test of the significance of these findings would be theoretically interesting.

The arousal condition subjects individuals to cues which put the subjects themselves in an agentic situation. Accordingly, the possibility of intervening variables in an anxiety provoking situation obscuring results must be considered. In contrast, in the neutral condition, subjects' n Ach scores should reflect both their sex-role orientation and their level of Achievement Motivation. Thus, a test of the significance of differences under the neutral condition in the n Ach scores of feminine women to male and female pictures and in the strength of n Ach of androgynous and masculine women is meaningful.

Since two contrasts are being added to the initial six made in the

analysis of the data, the value of $_{t'}D\alpha/2$ for 8 contrasts was used (2.77).

The results of the two post hoc contrasts are presented in Tables VII and VIII. The n Ach scores of feminine women in response to male pictures are significantly higher than those in response to female pictures under the neutral condition as predicted ($P<0.05$). The n Ach scores of masculine women are not significantly higher than those of androgynous women under the neutral condition. The interval is such however, that it indicates that this result approaches significance.

In the following subsections, the predicted and contrary findings of the present investigation and of the post hoc analysis will be discussed.

Predicted Results

Four of the six hypotheses of the present study were supported. These are briefly discussed relative to androgynous, masculine and feminine women.

The n Ach scores of androgynous women were not significantly different in response to male and female pictures as predicted ($H1_b$). Thus Bem's assumption of the sex-role stereotype-free nature of androgynous individuals was supported.

Similarly no significant difference was found in the n Ach scores of masculine women in response to male and female stimulus cue figures ($H2_b$). This finding supports the contention that masculine women view agentic achievement strivings as appropriate to women, as well as to men.

As was the case in the majority of studies of n Ach in women reported in the past, the present study found that the response of feminine women to male pictures was stronger than to female pictures ($H3_b$). This finding approached significance when the difference between the combined scores of women under both conditions relative to male and female pictures was

calculated. (Table VI). A post hoc analysis revealed that this hypothesis was supported at the 0.05 level of significance when scores under only the neutral condition were compared. These findings indicate that feminine women do view achievement as male but not female appropriate.

Furthermore, the lack of significant arousal of n Ach scores of feminine women ($H3_a$) provides support for Bem's contention that feminine women do not respond instrumentally in agentic situations.

Contrary Findings

Two central hypotheses ($H1_a$ and $H2_a$) of the present study were found to be statistically insignificant. These related to the arousal of n Ach scores of androgynous and masculine women.

In an attempt to explain the insignificant findings, the methodology, the tests and the theories used in this study are reexamined below.

The methodology was as rigorous as that reported in similar studies in the past which have demonstrated significant findings on n Ach arousal. The sample was larger and more representative of the college population than that of the majority of studies reported.

Moreover, the standard test administration procedures were used for the n Achievement Test. The female stimulus cue figures needed to test the specific hypotheses of the present study were chosen with care for their intellectual achievement content and their ability to pull strong n Ach. The male stimulus cue figures were those recommended for use in studies of n Ach. Furthermore, the interscorer reliability of story raters was high. Finally, the BSRI was administered following the identical procedure specified by Bem. Thus, it seems unlikely that the results reflect any weakness in the sampling and testing procedures employed.

The n Achievement Test and the BSRI have both been shown to have construct validity. It has been previously pointed out, however, that the validity of the n Achievement Test with respect to women remains questionnable in view of the paucity of studies which show expected findings.

Accordingly, the nature of the n Achievement Test was reexamined. This together with a reassessment of the constructs underlying Bem's theory upon which the hypotheses of the present study were based led to several speculative explanations for the results of this study.

The findings on the n Ach arousal of androgynous and masculine women will be discussed separately.

Findings on Androgynous Women

The n Ach scores of androgynous women did not show the predicted significant increase from the neutral to the arousal condition ($H1_a$). This finding is contrary to the prediction based on Bem's theory and thus requires explanation.

Bem argues that the behavior of androgynous people is situation specific. That is, androgynous individuals are highly responsive to the situation in which they find themselves. Accordingly, Bem predicts that androgynous women will behave in an expressive manner in a situation that calls for communal behavior and will behave instrumentally in a situation that calls for agentic behavior. The arousal condition was designed by McClelland and his coworkers (1953) to elicit agentic behavior, that is, achievement strivings. However, androgynous women were not significantly aroused in this agentic situation. Why? The answer may lie both in the nature of the TAT and the nature of androgyny.

The n Achievement Test allows four minutes for a subject to write a story in response to pictures of men and women in achievement oriented situations. The subjects are told that stories are scored for creative imagination. In fact, the stories are analyzed for preoccupation with success. That is, the more exclusively preoccupied a story is with the need for Achievement, the higher the score for that story.

The n Achievement Test seems to be based on a conceptualization of human personality analagous to that underlying simple bipolar M-F scales. That is, having a strong Motive to Achieve is considered an either/or proposition. If an individual does not show preoccupation with success in his story, he/she is considered to have a weak Motive to Achieve. The possibility that an individual may simultaneously have both a strong desire to succeed and a strong concern for the social consequences that success may bring (e.g. n Affiliation) is not taken into account in the scoring. However, the instructions and the nature of the pictures used in the n Achievement Test are conducive to the expression of both the agentic and communal concerns of a balanced individual.

Androgynous women are balanced individuals. They are not preoccupied with exclusively agentic or communal concerns. Although Bem emphasizes in most of her writing that the behavior of androgynous individuals is highly situation specific, she does point out that such individuals should have the capacity to blend the complementary agentic and communal modalities into a single act. Thus, Bem argues that an androgynous individual would be able, 'for example, 'not only to fire an employee if the circumstances warrant it, but to do so with sensitivity for the human emotion that such an act inevitably produces'. (Bem, Martyna, Watson,

1976, p. 1016). Moreover, this contention is in keeping with that of Bakan (1966) that the mitigation of agency and communion within an individual will result in healthy appropriate behavior.

Thus, a possible explanation for the lack of statistically significant arousal of n Ach scores in androgynous women is that their mitigated agency and communion may be reflected in their TAT stories. For example, stories written in the present study in response to the picture of the two women in the laboratory often included the need for Achievement, the desire to find a cure. In addition, however, the stories also expressed concern for the consequences of the discovery, that is, the effect of saving a life on the family of the victim. Similarly, concern over the inventors' success was expressed because of starving children at home or family problems due to lack of funds. This balanced orientation of androgynous women may also explain their lower scores relative to those of masculine women in the neutral condition (Table VIII). Masculine women are preoccupied with agentic concerns.

In summary, results reflect both a possible weakness in the TAT and a possible weakness in the theoretical constructs underlying Bem's theory. The n Achievement Test scoring system assumes that exclusivity or preoccupation is an indication of absolute strength of n Ach. This results in the score of androgynous or balanced individuals being deceptively low.

Moreover, Bem's emphasis on the situation specific nature of the behavior of androgynous persons resulting in the appropriate agentic or communal behavior called for by a situation may have to be refined. Androgynous people may behave 'androgynously' regardless of the agentic or communal nature of a situation.

Further research is required to determine the adequacy of the above explanation for the findings of the present study. It is suggested, that a thema analysis of the stories of the three sex-role groups would be profitable. Such an analysis should reflect the inadequacy of the n Achievement Test to provide an accurate measure of a single need, need for Achievement. Furthermore, the respective agentic and communal preoccupations of sex-typed, sex-reversed and androgynous individuals evidenced in a thema analysis should provide a greater understanding of the behavior patterns of the women in each group.

This explanation of the greater androgynicity, or greater balance of agency and communion of androgynous women being reflected in the TAT suggests a possible explanation for the general problem of lack of female arousal in past studies of n Ach.

Bakan (1966) has argued that men and women may differ in the extent of their androgynicity, that females are more bisexual than males. Bakan contends that these differences are biologically based. From a cultural perspective, one could argue that in our culture, at this point in time, socialization patterns for men and women have differed resulting in the greater androgynicity of females. This basic difference in the extent of androgynicity may account for the lack of n Ach arousal evidenced in women in the past and for the n Ach arousal evidenced in men.

This basic difference of androgynicity is not accounted for by Bem's system of differentiating sex-role groups since Bem predicts no sex differences in behavior. The BSRI assigns individuals to sex-role groups in comparative rather than absolute terms by using a median split. Accordingly, an approximately equal number of men and women fall into the

androgynous category. This may be a deceptive form of classification at this point in time, in our culture. Bem herself has reported that the behavior patterns of women in her experiments have proved more complex than those of men (Bem & Lenney, 1976; Bem, Martyna & Watson, 1976). Such findings indicate the need for the rethinking and greater sophistication of Bem's theory.

Finally, it should be noted, that the mitigated approach of androgynous women in an achievement situation may come close to the ideal of healthy behavior rather than reflect female inferiority. In other words, a balance of preoccupation with success and with the consequences of that success relative to oneself in terms of others may be the most adaptive way of handling a long-term career or intellectual achievement situation. Thus, women's lack of arousal in n Ach scores should not be viewed as a negative result implying fear of success or an exclusive need for acceptance or affiliation. Rather, the lack of significant n Ach arousal in androgynous women may reflect a more balanced approach to self enhancement within a communal framework.

Further research in the area of sex differences and psychological androgyny is recommended. In our culture, behavior seems to be decreasingly sex stereotyped (Ehrenberg, 1960; Winnograd, 1967; Sexton, 1969; Lunneborg, 1972; Hoffman, 1974). As such, the importance of investigating the value of a balanced or androgynous sex-role approach as the healthy approach for both men and women is enhanced.

Findings on Masculine Women

The n Ach scores of masculine women did not increase significantly under the arousal condition contrary to prediction ($H2_a$). This hypothesis

was based on Bem's contention that masculine people will 'do well' in agentic situations.

Bem argues that unlike the relatively situation specific behavior of androgynous individuals, the behavior of sex-typed persons will tend to be more trait specific. That is, sex-typed individuals should behave appropriately only when the situation is in keeping with their agentic or expressive orientation.

While Bem's contention that masculine women do well in agentic situations was supported in her validating studies on cross sex behavior (Bem & Lenney, 1975), it is important to note that the behaviors required of masculine women were simple everyday activities. They included oiling the hinge on a metal box, nailing two boards together and putting artificial bait on a fishing hook.

In the present study, under the neutral condition designed to elicit the normal everyday level of n Ach, the scores of masculine women were higher than those of androgynous women (Table VIII). Thus, the agentic orientation of masculine women was evidenced.

In contrast, however, under the arousal condition, the scores of masculine women did not increase. In fact, a tendency, though not significant, for the scores to decrease was evidenced (Table III). It is interesting to note that in 1965, Lipinski reported a significant drop in the n Ach scores of masculine women. The manifest and latent sex-role orientation of the women in Lipinski's study were measured by the Gough Brief Femininity Scale (single bipolar scale, Gough, 1964), and the Franck Drawing Completion Test. These masculine women, like those in the present study, had also scored highest under the neutral condition.

Why does the n Ach arousal situation evoke behaviors in masculine women which are contrary to their agentic orientation?

No distinction is made by Bem relative to the behavior of individuals who are sex-typed (e.g. masculine men) and those who are sex-reversed (e.g. masculine women).

Given that the genesis of a sex-reversed sex-role requires development in conflict with many of the major socializing forces in our society, it seems likely that the behavior patterns of such individuals as masculine women will in many instances not simply be the behavior patterns culturally defined for masculine men.

Moreover, it seems likely that the psychodynamics underlying a sex-reversed adaptation are highly complex and that the reactions of masculine women to stressful masculine situations will be more than a simple response to the stimulus for agency.

Bakan alludes to the complexity underlying sex-role orientation (1966, p.106) and warns that apparent sex-role behavior may mask underlying psychodynamics such as 'compensation' and 'reaction formation'. The TAT is a projective measure designed originally as a window on the unconscious. It is, therefore, not surprising that in a highly stressed masculine situation, it reflects something other than a simple agentic response in masculine women.

In summary, Bem's theory about the behavior of sex-reversed individuals may be underdeveloped. These people may display trait consistent behavior in simple everyday situations. However, more complex stressful situations may result in projective evidence of complex underlying dynamics of sex-reversed individuals such as masculine women.

Bem's theory is based on the trait specific nature of the behavior of sex-typed individuals and the situation specific nature of the behavior of androgynous individuals. It is suggested here that a more sophisticated approach to explaining the behavior of all sex-role groups would be to look at behavior as a function of the nature of a situation in interaction with the trait balance associated with the particular sex-role orientation.

SUMMARY AND CONCLUSIONS

The theory of the Achievement Motive formulated by McClelland, Atkinson, Clark and Lowell (1953) provided a model within which the general human concern for meeting standards of excellence could be investigated. The provision of this theoretical framework led to the research of a variety of behavioral phenomena including many relevant to educational situations. The results of these investigations provided support for the validity of the construct as well as the instrument, the n Achievement Test, designed to measure the Motive to Achieve. However, the findings, rather than validating a general human motive, seem to have been male-specific with only a few groups of women demonstrating the expected responses consistently displayed by men.

In the review of the literature, attempts to experimentally increase Achievement Motivation in women from the neutral to the arousal condition were described. Several proposed explanations for anomolous findings were discussed. Although these explanations failed to resolve the problem, the studies did point to the influence of a number of factors on patterns of n Ach scores in women. These included sex-role orientation, acceptance of n Ach as sex-role appropriate and the sex of the stimulus cue figure as a determinant of such acceptance.

The traditional use of single bipolar scales in the measurement of sex-role orientation was isolated as a possible explanation for inconsistent findings. Such scales conceptualize 'masculine' and 'feminine' traits as occupying opposite ends of the same continuum. Several empirical studies were described which successfully challenged this approach.

A theoretically more developed approach to the differentiation of women's sex-role orientation, the theory of androgyny, was introduced in this study in an attempt to resolve sex related problems in Achievement Motivation. The theory of androgyny allows for the possibility of an individual being both 'masculine' and 'feminine' and thus goes beyond sex-role stereotypes.

An historical overview of the development of the concept of androgyny was presented and the dual bipolar nature of the instrument designed for its operalization was described.

Based on Bem's theory of psychological androgyny (1979), several hypotheses were formulated. With respect to androgynous women, it was predicted that they would be aroused from the neutral to the arousal condition. Also, since androgynous women are not constrained by prevailing sex-role stereotypes, it was hypothesized that they would not make differential responses to male and female pictures.

Pertaining to masculine women, it was predicted that they would be aroused in a situation designed to elicit their agentic intellectual strivings. Moreover, masculine women would not respond differentially to male and female pictures since they accept achievement as both female and male appropriate.

With respect to feminine women, it was hypothesized that they would show no arousal but would attribute greater achievement striving to men, demonstrating higher scores in response to male than to female stimulus cue figures.

An empirical investigation was designed to test the hypotheses. The sample consisted of 280 college women from nine different faculties. Two

measuring instruments were employed, McClelland's n Achievement Test (1953) and Bem's BSRI (1976).

Each group of subjects was halved and each half tested under the neutral or arousal condition. The n Achievement Test was administered to all subjects using the same four pictures, two of which depicted males and two females in achievement situations. Subjects were assigned to the masculine, feminine, androgynous or undifferentiated sex-role groups based on their scores on the BSRI. Since little is as yet known about the behavior of 'undifferentiated' individuals, no predictions as to the patterns of this group's n Ach scores were made.

The Dunn Multiple Comparison Procedure was employed to determine the statistical significance of the findings on the effect of sex-role identity, sex of the stimulus cue figure and condition on the Achievement Motive of women.

The results of the analysis confirmed the hypotheses that masculine and androgynous women do not respond differentially to male and female stimulus cue figures while feminine women do attribute achievement strivings significantly more to men than to women. Moreover, as predicted, feminine women are not aroused from the neutral to the arousal condition.

Two contrary findings resulted from the statistical analysis. First, although androgynous women do display an increase in n Ach scores under the arousal condition, the increase is not statistically significant. Two possible explanations for this contrary finding were proposed. First, it was suggested that the n Achievement Test scoring system assumes exclusivity or preoccupation is an indication of absolute strength of n Ach. This assumption might result in the scores of androgynous or

balanced individuals with balanced concerns being deceptively low. Moreover, it was pointed out that differences in the extent of androgynicity of men and women at this point in time in our culture might be a possible explanation for past sex differences in n Ach findings.

The second and related explanation for lack of significant n Ach arousal in androgynous women challenged Bem's contention that androgynous individuals behave in a masculine manner in agentic situations. It was suggested that such individuals behave 'androgynously' regardless of the agentic or communal nature of the situation.

The second contrary finding of this study pertains to the hypothesized increase of n Ach scores of masculine women under the arousal condition. The scores of masculine women, in fact, drop, though not significantly. In explaining this finding, it was suggested that Bem's theory about the behavior of sex-reversed individuals might be underdeveloped. Complex stressful situations, such as the achievement arousal condition, might interfere with expected sex-role appropriate behavior. This might result in projective evidence of complex underlying dynamics of sex-reversed individuals such as masculine women.

The findings of this study point to several directions for future research. First, a thema analysis of the stories written by the three sex-role groups is suggested. Such an analysis might demonstrate the drawbacks of scoring projective tests for absolute strength of a single need such as n Achievement. Furthermore, the respective agentic and communal preoccupations of sex-typed, sex-reversed and androgynous individuals might be revealed in a thema analysis. This might result in a greater understanding of the behavior patterns of the women in each group.

Second, it is suggested that further investigations of the behavior patterns of sex-reversed individuals are required.

Finally, this study points to the need for further research on the male specificity of a variety of psychological constructs and tests. Such reevaluations should be done based on the newly developed theories for considering sex differences.

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APPENDICES

APPENDIX A

TEST BOOKLET

FACULTY _____

NAME _____

AGE _____

DATE _____

TEST I

INSTRUCTIONS

On the following pages you will find common words which have been scrambled by changing the order of the letters. Try to make a word out of the letters and write it in the space provided on the right.

EXAMPLE: ilmp limp

If you find any words difficult to unscramble, skip them and go on to the next. You may have an opportunity later to come back and work on the ones you find difficult. Some letters may be unscrambled to form more than one word. Only one word is required. Any word NOT in the plural form will be accepted.

Please do not start until the signal is given and turn the pages promptly when (and only when) instructed to do so.

APPENDIX A (continued)

sciw	_____	hurs	_____
edsi	_____	teag	_____
tila	_____	telf	_____
yarg	_____	keli	_____
dols	_____	mchu	_____
caɔt	_____	nein	_____
zeis	_____	eiwv	_____
dgee	_____	doul	_____
laer	_____	evah	_____
nglo	_____	seel	_____

APPENDIX A (continued)

yrma	_____	tigf	_____
dihe	_____	efls	_____
kace	_____	hsif	_____
tras	_____	fesa	_____
cloo	_____	ptek	_____
prit	_____	eisr	_____
yase	_____	ectn	_____
ewts	_____	nair	_____
nrio	_____	isks	_____
csik	_____	fvie	_____

APPENDIX A (continued)

wekn	_____	ngoe	_____
aybb	_____	asdn	_____
wnos	_____	nuht	_____
wolb	_____	libl	_____
ocko	_____	jino	_____
ginr	_____	teno	_____
lelt	_____	ustj	_____
sowl	_____	aslo	_____
rimf	_____	sols	_____
phos	_____	fost	_____

APPENDIX A (continued)

nlad	_____	sutm	_____
sfta	_____	slai	_____
tres	_____	moes	_____
mees	_____	rowd	_____
reut	_____	dais	_____
edda	_____	ynam	_____
lefe	_____	lsse	_____
hdol	_____	kenc	_____
eovl	_____	bnee	_____
stae	_____	rcea	_____

APPENDIX A (continued)

tbae	_____	rtos	_____
etda	_____	eavw	_____
wiat	_____	dray	_____
frma	_____	gsin	_____
egrw	_____	keew	_____
ckro	_____	froo	_____
ilml	_____	nono	_____
kpci	_____	raih	_____
urep	_____	spta	_____
veor	_____	inga	_____

APPENDIX A (continued)

elbi	_____	leur	_____
eamn	_____	koot	_____
llah	_____	enno	_____
alod	_____	ruth	_____
apht	_____	kene	_____
dsee	_____	gnah	_____
shaw	_____	mgae	_____
latl	_____	deef	_____
gsno	_____	rifa	_____
ilks	_____	eblu	_____

APPENDIX A (continued)

sims _____

obko _____

dnif _____

hwso _____

kalw _____

deir _____

ensd _____

wdei _____

tosl _____

caef _____

ytdu _____

ywaa _____

ouls _____

fiew _____

oruy _____

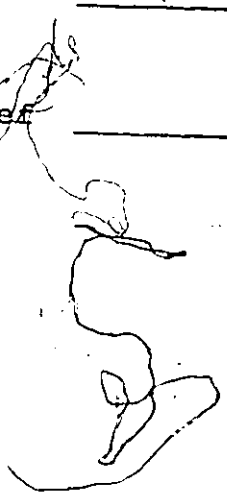
ttha _____

mkil _____

danh _____

wonk _____

filt _____



APPENDIX A (continued)

ntse _____

lifl _____

dloc _____

wkea _____

bluc _____

ufro _____

oomr _____

marw _____

erya _____

hots _____

somt _____

flah _____

glod _____

nrco _____

lidw _____

poro _____

ihsw _____

eden _____

hlil _____

cnoe _____

APPENDIX A (continued)

neev	_____	ilfa	_____
pohe	_____	rouh	_____
cihr	_____	lgir	_____
ponu	_____	brdi	_____
yalp	_____	eifn	_____
hips	_____	orll	_____
psot	_____	elab	_____
usit	_____	twih	_____
doar	_____	tehn	_____
gwin	_____	stud	_____

APPENDIX A (continued)

pede	_____	lony	_____
idnm	_____	suby	_____
saps	_____	nikg	_____
eovm	_____	dalg	_____
lewl	_____	ldai	_____
arhd	_____	wnid	_____
erif	_____	yrev	_____
stoc	_____	orkw	_____
hawt	_____	wrog	_____
mkra	_____	meka	_____

APPENDIX A (continued)
TEST II

INSTRUCTIONS

This is a test of your creative imagination or story telling ability. A number of pictures will be projected on the screen before you. You will have twenty seconds to look at the picture and then about four minutes to write a story about it. Notice that there is one page before you for each picture to be shown. The same four questions appear on each page and will guide your thinking and enable you to cover all the elements of a plot in the time allotted. You don't have to answer the questions directly. They are there to help you think up a story. Plan to spend about one minute on each question. Time will be kept and you will be told when it is about time to go on to the next question for each story. You will have a little time to finish your story before the next picture is shown.

Obviously, there are no right or wrong answers; so you may feel free to make up any kind of a story about the pictures that you choose. Try to make them vivid and dramatic, for this is a test of "creative imagination". Do not merely describe the picture you see. Tell a story about it. Work as fast as you can in order to finish on time. Do not worry about spelling or grammar. If you need more space for any question, use the reverse side. You may begin writing any time after the picture is shown.

Picture 1 - Two inventors in a shop working at a machine.

1. What is happening? Who are the persons?

2. What has led up to this situation? That is, what happened in the past?

3. What is being thought? What is wanted? By whom?

4. What will happen? What will be done?

Picture 2 - Group of men and women in office. Central figure is woman at desk.

1. What is happening? Who are the persons?

2. What has led up to this situation? That is, what happened in the past?

3. What is being thought? What is wanted? By whom?

4. What will happen? What will be done?

Picture 3 - Boy in checked shirt at a desk, an open book in front of him.

1. What is happening? Who are the persons?

2. What has led up to this situation? That is, what happened in the past?

3. What is being thought? What is wanted? By whom?

4. What will happen? What will be done?

Picture 4 - Two women in a laboratory.

1. What is happening? Who are the persons?

2. What has led up to this situation? That is, what happened in the past?

3. What is being thought? What is wanted? By whom?

4. What will happen? What will be done?

TEST III

INSTRUCTIONS

On the following page, you will be shown a large number of personality characteristics. We would like you to use those characteristics in order to describe yourself. That is, we would like you to indicate, on a scale from 1 to 7, how true of you these various characteristics are. Please do not leave any characteristic unmarked.

EXAMPLE: sly

Mark a 1 if it is NEVER OR ALMOST NEVER TRUE that you are sly.

Mark a 2 if it is USUALLY NOT TRUE that you are sly.

Mark a 3 if it is SOMETIMES BUT INFREQUENTLY TRUE that you are sly.

Mark a 4 if it is OCCASIONALLY TRUE that you are sly.

Mark a 5 if it is OFTEN TRUE that you are sly

Mark a 6 if it is USUALLY TRUE that you are sly.

Mark a 7 if it is ALWAYS OR ALMOST ALWAYS TRUE that you are sly

Thus, if you feel it is sometimes but infrequently true that you are "sly", never or almost never true that you are "malicious", always or almost always true that you are "irresponsible", and often true that you are "carefree", then you would rate these characteristics as follows:

Sly	3
Malicious	1

Irresponsible	7
Carefree	5

1	2	3	4	5	6	7
NEVER OR ALMOST NEVER TRUE	USUALLY NOT TRUE	SOMETIMES BUT INFREQUENTLY TRUE	OCCASIONALLY TRUE	OFTEN TRUE	USUALLY TRUE	ALWAYS OR ALMOST ALWAYS TRUE

Self reliant	
Yielding	
Helpful	
Defends own beliefs	
Cheerful	
Moody	
Independent	
Shy	
Conscientious	
Athletic	
Affectionate	
Theatrical	
Assertive	
Flatterable	
Happy	
Strong personality	
Loyal	
Unpredictable	
Forceful	
Feminine	

Reliable	
Analytical	
Sympathetic	
Jealous	
Has leadership abilities	
Sensitive to the needs of others	
Truthful	
Willing to take risks	
Understanding	
Secretive	
Makes decisions easily	
Compassionate	
Sincere	
Self-sufficient	
Eager to soothe hurt feelings	
Conceited	
Dominant	
Soft-spoken	
Likable	
Masculine	

Warm	
Solemn	
Willing to take a stand	
Tender	
Friendly	
Aggressive	
Gullible	
Inefficient	
Acts as a leader	
Childlike	
Adaptable	
Individualistic	
Does not use harsh language	
Unsystematic	
Competitive	
Loves children	
Tactful	
Ambitious	
Gentle	
Conventional	

THE SCORING CATEGORIES

1. Achievement Imagery

The scorer must first decide whether or not the story contains any reference to an achievement goal which would justify his scoring other categories as achievement related. Attainment of an achievement goal is accompanied by feelings of personal success for the accomplishment, and non-attainment produces feelings of failure. There are three criteria, any one of which will establish the presence of an achievement goal.

(a) Competition with a standard of excellence. One of the characters is engaged in some competitive activity (other than clear cases of aggression) where winning or doing as well or better than others is the primary concern. ("He wants to win the essay contest.") One of the characters is engaged in what might seem to be a routine task or everyday performance, but there is evidence of concern with mastery of the task. ("If he doesn't do a good job, he will be mad.")

(b) Unique accomplishment. One of the characters is involved in accomplishing other than a run-of-the-mill daily task which could mark him as a personal success. Inventions, artistic creations, and other extraordinary accomplishments fulfill this criterion.

(c) Long term involvement. One of the characters is involved in attainment of a long term achievement goal. Being a success in life, becoming a machinist, doctor, lawyer, successful businessman, et cetera, are all examples of career involvement which allow the inference of competition with a standard of excellence, unless it is made explicit

that another goal is primary, e.g. food for the kids, personal security.

2. Doubtful Achievement Imagery

Stories containing some references to achievement but which fail to meet one of the three criteria for Achievement Imagery are scored Doubtful Imagery and not scored further for achievement-related categories.

3. Unrelated Imagery

Stories in which there is no reference to an achievement goal are scored Unrelated Imagery and not scored further.

4. Need

Someone in the story expresses the desire to reach an achievement goal. Expresssions such as "he wants to be a doctor," "he wants to finish the painting," are the clearest examples.

5. Instrumental Activity

Overt or mental activity by one or more characters in the story indicating that something is being done about attaining an achievement goal is considered instrumental activity. There must be an actual statement of activity within the story, independent of both the original statement of the situation and the final outcome of the story.

6. Anticipatory Goal States

Someone in the story anticipates goal attainment or frustration and failure. The anticipatory goal state is scored positive when someone is thinking about the success he will achieve, or negative when someone is worried about failure, expects the worst, or is wondering whether or not he will succeed.

7. Obstacles

Stories are scored for Obstacles when the progress of the goal-directed

activity is blocked or hindered in some way, or things do not run smoothly, or there are obstacles to be overcome before the goal may be obtained.

8. Nurturant Press

Forces in the story, personal in source, which aid the character in the story who is engaged in ongoing achievement-related activity are scored Nurturant Press. Someone aids, sympathizes with, or encourages the person striving for achievement.

9. Affective States

Affective states associated with goal attainment, active mastery, or frustration of the achievement-directed activity are scored:

(a) Positive affective states are scored when there is indication of enjoyment, pride, or satisfaction.

(b) Negative affective states are scored when there is failure to attain mastery of an achievement goal accompanied by affect. ("He is worried about his failure".)

10. Achievement Thema

Achievement Thema is scored when the achievement imagery is elaborated in such a manner that it becomes the central plot or thema of the story. Striving for an achievement goal and eventual attainment of the goal may be the central plot of the story.

One point was scored for all categories, except Doubtful Imagery and Unrelated Imagery. Doubtful Imagery received no score, and Unrelated Imagery received a score of -1. An individual's n Achievement score was an algebraic summation of his scores on all four stories.

SEX-ROLE IDENTITY, CONDITION AND N ACH SCORES

Note: BSRI

Femininity Score = Mean score on Femininity Scale

Masculinity Score = Mean score on Masculinity Scale

Medians = 4.551 Masculinity

= 5.097 Femininity

n Ach Test

Female Pictures Score = combined score on 2 female stimulus cue figures

Male Pictures Score = combined score on 2 male stimulus cue figures

Androgynous Subjects Neutral Condition - N=41

Subject Number	BSRI		n Ach Test	
	Femininity Score	Masculinity Score	Female Picture Score	Male Picture Score
003	5.60	4.85	4	0
008	5.20	5.45	3	6
022	5.10	5.05	3	4
044	5.55	5.45	7	3
048	5.90	4.85	3	3
049	6.16	4.84	0	-1
052	5.65	4.65	4	9
101	5.30	4.89	12	2
106	5.50	5.70	-2	-1

Androgynous Subjects - Neutral Condition - Continued

Subject Number	BSRI		n Ach Test	
	Femininity Score	Masculinity Score	Female Picture Score	Male Picture Score
107	5.25	4.85	0	2
109	5.30	4.65	-2	-2
115	5.75	4.75	7	7
117	5.30	4.75	3	4
118	5.45	4.79	3	8
120	5.20	5.35	3	9
121	5.55	6.05	-1	3
144	5.75	4.95	9	4
175	6.00	5.60	-2	2
176	5.25	4.60	4	6
182	5.15	5.05	3	3
199	5.25	4.70	-2	2
214	5.55	5.15	3	1
221	5.35	5.15	6	2
223	5.35	5.40	8	4
224	5.45	5.40	4	2
225	5.95	5.10	9	9
228	5.15	5.05	6	8
229	5.30	5.55	8	5
230	5.20	4.65	6	12
243	5.40	5.05	2	4

Androgynous Subjects - Neutral Condition - Continued

Subject Number	BSRI		n Ach Test	
	Femininity Score	Masculinity Score	Female Picture Score	Male Picture Score
245	5.60	4.70	7	9
246	5.70	5.25	6	9
247	5.20	5.35	0	4
248	5.45	4.70	-2	1
249	5.16	5.10	1	0
251	6.00	4.75	1	5
252	6.20	4.90	-2	0
256	5.61	4.60	7	3
257	5.20	5.05	-1	0
258	5.15	5.40	3	4
263	5.60	4.85	4	3

Androgynous Subjects - Arousal Condition - N=34

Subject Number	BSRI		n Ach Test	
	Femininity Score	Masculinity Score	Female Picture Score	Male Picture Score
004	5.25	4.85	3	6
027	5.45	6.25	0	4
031	5.85	4.85	8	7
035	5.25	6.00	-2	5
043	5.80	5.25	3	7
056	5.15	4.65	4	4
060	5.45	4.60	6	4
062	5.40	5.00	4	9
069	5.60	5.25	3	10
070	5.25	5.20	-2	1
071	5.65	5.40	4	3
073	5.70	5.20	4	7
074	5.25	4.75	2	-1
076	5.80	4.95	9	4
078	5.15	5.10	3	-2
085	5.35	5.25	6	10
086	5.47	5.95	7	3
088	5.30	5.55	5	9
090	5.10	4.60	8	5
092	6.25	6.20	4	2
094	5.39	5.20	1	3

Androgynous Subjects - Arousal Condition - Continued

Subject Number	BSRI		n Ach Test	
	Femininity Score	Masculinity Score	Female Picture Score	Male Picture Score
095	6.00	5.10	3	0
096	6.10	4.75	4	-1
102	5.65	6.10	7	3
104	5.75	5.30	4	7
123	5.55	5.65	6	7
153	5.25	4.75	6	11
155	5.25	4.65	11	6
163	5.10	5.35	1	0
191	5.85	4.90	8	6
207	5.25	6.05	4	3
211	5.35	4.95	10	6
272	5.90	5.50	-2	4
278	5.10	4.80	6	5

Feminine Subjects - Neutral Condition - N=31

Subject Number	BSRI		n Ach Test	
	Femininity Score	Masculinity Score	Female Picture Score	Male Picture Score
010	5.70	4.15	2	10
013	5.55	4.16	6	8
014	5.20	4.10	10	10
018	5.45	4.00	-1	10
024	5.95	3.85	5	5
046	5.35	3.70	0	10
047	5.70	4.50	5	7
050	5.25	4.20	-1	7
051	5.55	4.25	0	4
108	5.40	4.15	8	-1
110	5.71	4.23	7	7
114	5.22	2.79	-1	7
119	5.15	3.90	4	2
140	5.20	3.50	3	3
143	5.65	4.20	4	6
146	5.15	3.65	9	5
177	5.15	4.20	2	7
179	5.25	4.55	4	11
218	5.15	4.50	4	8
231	5.40	4.65	4	4

Feminine Subjects - Neutral Condition - Continued

Subject Number	BSRI		n Ach Test	
	Femininity Score	Masculinity Score	Female Picture Score	Male Picture Score
232	5.35	4.50	4	7
233	5.15	3.68	8	7
234	5.85	4.35	5	-2
237	5.35	3.95	5	1
244	5.85	4.55	2	2
255	5.95	4.45	-2	1
259	5.65	3.85	-1	3
260	5.60	3.10	3	3
261	5.94	4.33	7	1
262	5.85	4.20	2	2
268	5.30	4.50	7	3

Feminine Subjects - Arousal Condition - N=35

Subject Number	BSRI		n Ach Test	
	Femininity Score	Masculinity Score	Female Picture Score	Male Picture Score
006	5.75	4.50	3	4
007	5.20	4.45	2	3
028	5.35	4.05	4	-2
032	5.20	3.95	6	10
034	5.45	4.20	11	8
041	5.15	3.65	-1	3
055	6.00	3.65	-2	4
058	5.65	3.90	3	1
059	5.75	2.70	5	4
065	5.25	3.15	9	10
067	5.35	4.05	3	8
068	5.50	3.95	12	6
072	5.30	3.75	3	0
087	5.80	4.45	3	-1
091	5.20	4.55	0	6
093	5.40	4.25	9	11
098	5.10	5.35	5	-1
103	5.45	4.30	2	4
122	5.55	4.15	9	4
125	5.35	4.05	11	3

Feminine Subjects - Arousal Condition - Continued

Subject Number	BSRI		n Ach Test	
	Femininity Score	Masculinity Score	Female Picture Score	Male Picture Score
128	5.35	4.29	9	6
130	5.28	4.28	-2	2
134	5.40	3.30	-2	10
137	5.90	4.30	3	4
156	5.70	4.55	7	4
161	5.70	3.85	4	-2
165	5.25	3.55	3	6
169	5.35	4.55	3	12
189	5.21	4.45	1	1
205	5.15	4.50	8	12
212	5.30	3.65	2	3
271	5.65	4.25	-2	-1
275	5.25	3.30	0	2
276	5.47	3.75	2	2
280	5.68	3.65	0	2

Masculine Subjects - Neutral Condition - N=31

Subject Number	BSRI		n Ach Test	
	Femininity Score	Masculinity Score	Female Picture Score	Male Picture Score
011	4.85	5.20	-1	10
019	3.85	5.15	5	4
025	5.05	5.45	11	-1
045	4.60	4.89	3	-1
099	4.40	4.70	10	10
100	4.85	4.70	6	3
111	4.90	4.70	8	3
113	4.70	5.40	8	7
142	4.60	5.45	3	11
147	4.35	5.50	3	1
173	4.80	4.75	-2	-2
174	4.90	5.30	3	4
192	3.85	5.25	0	-2
193	4.05	4.65	5	11
194	3.85	5.60	3	9
196	4.75	5.50	9	10
197	4.75	4.95	10	10
213	5.05	4.70	9	5
217	4.25	5.65	6	6
219	5.00	4.95	2	-1
220	3.95	5.55	2	3

Masculine Subjects - Neutral Condition - Continued

Subject Number	BSRI		n Ach Test	
	Femininity Score	Masculinity Score	Female Picture Score	Male Picture Score
226	4.85	5.25	3	4
227	4.50	4.70	4	5
235	4.70	5.35	4	8
236	5.00	4.70	8	9
238	4.55	5.05	8	3
239	3.65	5.35	5	-2
240	4.95	5.60	2	9
242	5.00	4.80	4	3
264	4.75	5.35	4	2
269	3.89	4.65	3	1

Masculine Subjects - Arousal Condition - N=30

Subject Number	BSRI		n Ach Test	
	Femininity Score	Masculinity Score	Female Picture Score	Male Picture Score
026	4.85	5.45	9	4
029	4.75	5.25	4	5
036	4.55	4.80	2	-2
038	4.65	4.63	7	5
066	4.75	5.00	-2	0
075	4.90	5.20	11	3
077	5.00	5.45	3	5
080	5.05	5.22	2	1
083	4.95	5.95	-2	3
084	4.55	6.15	7	6
089	4.90	4.80	4	10
097	4.95	5.40	1	-1
124	4.85	5.37	3	7
132	4.20	5.37	4	0
133	4.95	4.90	3	6
135	4.50	5.60	2	3
149	5.00	5.00	1	3
154	4.45	4.85	2	7
157	4.40	5.25	2	3
158	5.00	4.80	8	7
162	3.60	6.15	8	9

Masculine Subjects - Arousal Condition - Continued

Subject Number	BSRI		n Ach Test	
	Femininity Score	Masculinity Score	Female Picture Score	Male Picture Score
167	3.80	5.45	2	-2
185	4.75	5.30	2	0
186	5.05	4.75	9	5
188	4.50	4.95	4	3
201	3.85	5.20	4	8
203	4.80	5.15	3	6
204	4.90	5.35	2	8
206	3.80	5.00	4	3
209	4.85	5.35	8	4

ABSTRACT

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Attempts to employ the perspective of sex-role orientation to resolve the longstanding problem of anomolous findings on the Achievement Motive in women have met with only partial success. The present study isolates the traditional use of single bipolar scales in the measurement of sex-role orientation as a possible explanation for the inconsistent findings. Such scales do not allow for the possibility of an individual being both masculine and feminine (androgynous). Accordingly, this study introduces the concept of androgyny as a theoretically more valid approach to the differentiation of sex-role orientation in an attempt to resolve sex related problems in Achievement Motivation.

Two sets of hypotheses are formulated on the basis of Bem's theory of psychological androgyny (1979). The first set of predictions centres on the arousal of n Ach. The second hypothesizes differential response by the three sex-role groups to male and female stimulus cue figures.

It is hypothesized that masculine and androgynous women will demonstrate higher n Ach under the arousal condition than under the neutral condition. No arousal is predicted for feminine women.

Furthermore, it is hypothesized that masculine and androgynous women will show no differential response to male and female stimulus cue figures. It is predicted that feminine women will demonstrate significantly stronger n Ach to male than to female pictures.

280 women from nine different college faculties participated in the study. Each group of subjects was halved and each half tested under the neutral or the arousal condition. McClelland's n Achievement Test was

administered to all subjects using the same two male and two female stimulus cue figures. Subjects were assigned to the masculine, feminine or androgynous sex-role groups based on their scores on the Bem Sex Role Inventory.

The results of the statistical analysis confirm the three hypotheses related to differential responses by the three sex-role groups to male and female stimulus cue figures. However, of the hypotheses focussing on n Ach arousal, only that predicting no arousal in feminine women is supported.

Although the n Ach scores of androgynous women increase, the arousal is not significant at the 0.05 level. Moreover, contrary to prediction, the n Ach scores of masculine women drop, though not significantly, under the arousal condition.

Several possible explanations for contrary findings are posited. It is suggested that the results on androgynous women may reflect weaknesses both in the TAT scoring system and in some of the theoretical constructs underlying Bem's theory. It is further contended that Bem's theory is underdeveloped with reference to the behavior of sex-reversed (e.g. masculine women) individuals.

The study points to several directions for future research. These include a thema analysis of the stories of the three sex-role groups, further investigations of the behavior of sex-reversed individuals and further research on the possible male specificity of a variety of psychological constructs and tests.