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THE MMPI MF SCALE IN COLLEGE WOMEN--
AN EMPIRICAL INVESTIGATION OF SOME CLINICAL ASSUMPTIONS

By

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ABSTRACT

THE MMPI MF SCALE IN COLLEGE WOMEN--
AN EMPIRICAL INVESTIGATION OF SOME CLINICAL ASSUMPTIONS

By

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The Masculinity-Femininity Scale of the MMPI consists of 60 items related to interests, occupational choices, emotional sensitivities, and aesthetic preferences. This dissertation examined the assumption that low T scores for women on the Mf Scale are associated with submissive and passive trends in the personality. Another assumption under consideration was whether or not high T scores on Scales 1 (Hypochondriasis), 2 (Depression), and 3 (Hysteria) are associated with low Mf Scale T scores.

Specifically, the present study hypothesized that low Mf Scale scores would be associated with low scores on a measure of interpersonal assertiveness. It was further hypothesized that if the Mf Scale was a valid measure of femininity subjects with low T scores would be feminine on another measure of sex role orientation.

To test these hypotheses 419 college women were administered the MMPI, the College Self-Expression (Galassi, DeLo, Galassi, & Bastien, 1974) as a measure of assertiveness, and the Bem Sex Role Inventory (Bem, 1974). Scores on the Mf Scale were categorized into high and low groups

using two research methodologies: (1) a quartile method considering the Highest ("masculine") and Lowest (feminine") Quartiles on the Mf Scale based on the Mf scores of the entire sample (Hathaway & Meehl, 1950); and (2) a Highest Point-Lowest Point method based on the individual's highest and lowest T scores of the profile, i.e., a "masculine" Mf group consisting of those with the peak T score on Mf, and a "feminine" Mf group of those whose lowest T score was on Mf (Black, 1956).

The results showed that a Feminine and Androgynous sex role type on the BSRI was more common in the "feminine" Mf groups and that a Masculine sex role type was more common in the "masculine" Mf groups, using both Mf classification methods. Overall, for the entire range of Mf scores assertiveness and Mf scores were not significantly correlated. When the extreme groups on Mf were analyzed for differences in assertiveness the results differed for the two Mf classification methods: Using quartiles, the Lowest and Highest Quartiles on Mf did not differ in assertiveness; for the Highest Point-Lowest Point method, however, the mean assertiveness score was significantly higher in the Highest Point ("masculine") group than in the Lowest Point ("feminine") group.

Within the low Mf score groups, both the Lowest Quartile and the Lowest Point group, assertiveness scores were clearly related to BSRI sex role type. The Masculine BSRI

group was most assertive, followed by the Androgynous, Feminine, and Undifferentiated groups. This relationship between assertiveness and BSRI category also held for the entire sample.

These findings indicate that when Mf is the lowest profile point the individual may be low on assertiveness, but that it is BSRI category rather than Mf score which is most clearly associated with assertiveness. The results argue for caution in interpreting the meaning of low Mf T scores for women. A considerable number of low Mf scorers appear to be interpersonally assertive rather than passive and submissive. Additionally, the discussion includes information on the MMPI profile patterns of this sample in contrast to a 1970 study. Methodological difficulties and suggestions for future research are also discussed.

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CHAPTER I

INTRODUCTION

The clinician attempting to meaningfully integrate a woman's MMPI Mf score (Scale 5), into the profile configuration will have no trouble finding interpretive suggestions in the more widely used MMPI manuals. On the other hand, many research studies have not included the Mf Scale and clinicians have often been unclear as to the meaning of the scale. Carson (1969, pp. 483-484) states:

> For females, high scorers (Scale 5) tend in general to be aggressive, dominating and competitive; they are found in large numbers in activities and occupations that are traditionally male. . . . Low 5 females are passive, submissive, yielding, and demure. . . . Women who achieve extremely low T-scores are usually highly constricted, self-pitying and fault-finding; they seem unable to tolerate pleasant experiences.

LaChar's observations are similar, although in his statements he differentiates between normal and psychiatric populations. High scorers in a normal population are described as adventurous, confident, and competitive. In female psychiatric patients Scale 5 elevation suggests a rebellious, dominating, competitive individual. Low scorers among normals are considered to be sensitive and modest with typically feminine interests. In addition, LaChar adds that they "may display a masochistic acceptance of discomfort" (p. 8). Women psychiatric patients with very low Mf scores are often described

as highly constricted and very difficult, manipulative clients in therapy (LaChar, 1974).

Although neither Carson nor LaChar intend to convey the idea that a woman's Mf score can be considered out of the context of the entire profile, the interpretive statements concerning both high and low scores on Mf are strongly expressed and based on clinical experience rather than empirical investigation. When interpreting the Mf Scale score it should be remembered that the construction and development of this scale differed from that of the other scales. Also, surprisingly little research has been done on it, particularly with women (Dahlstrom, Welsch, & Dahlstrom, 1972).

Construction and Development of Scale 5 (Mf)

Scale 5 was originally developed to identify personality features associated with male sexual inversion. The scale consisted of an initial item pool and items added later from the sexual inversion studies of Terman and Miles (1936). As a result, the response frequencies of the original Minnesota criterion group were not available, requiring the use of special groups of normals--54 soldiers and 67 female airline employees (Hathaway & McKinley, 1940). The published scale was derived by contrasting the normal men with 13 carefully selected male sexual inverts. Comparisons were also made between more feminine but otherwise normal males (as determined from the Terman and Miles I scale), and

more typical males. As a final, less important criterion the items were also compared for male-female differences because the dimension of inversion being examined appeared in the studies of Terman and Miles (1936, 1980) to be psychologically similar to differences between men and women (Hathaway, 1956).

A criterion group of women was utilized in the development of the Mf scale but clearly the purpose of the scale was not to aid in the diagnosis or understanding of women's personalities. There was one attempt to improve the Mf scale by developing a corresponding Fm scale to identify female sexual inverts. Records of women whose problems included homosexuality were used as the criterion group but the scale proved to be inadequate upon cross-validation (Hathaway, 1956).

The Mf scale as it is currently in use consists of 60 items, 23 of which were taken from the Terman and Miles scale and 37 from the original MMPI item pool. The content is heterogenous, ranging from occupational preferences, social activities and hobbies, to fears, personal sensitivities, and sexual practices (Dahlstrom, et al., 1972). It is generally acknowledged that it is not a pure measure of masculinity-femininity; however, questions about what it does measure, especially in women, remain unanswered. Despite controversy, it is a highly reliable scale. The items have the format, content, and response direction

associated with response stability, although some shifts have been noted in treated groups (Schofield 1950, 1953).

Content of the Mf Scale Items

Criticism of the content of the Mf scale items has previously faced the counterargument that the empirical approach to test construction is not interested in content per se, but rather in response differences between criterion groups. Although this may be a valid argument for the items on the clinical scales, it does not hold for the concept of masculinity-femininity, especially as it is so heterogeneously measured by Scale 5. For women, a high Mf score implies that she is answering in the direction opposite to a group of male sexual inverts. In the development of the scale, a criterion group of sexually abnormal women was not successfully included; to compare the scores of the 67 women airline employees in the 1940's to women's responses today without the prior criterion group validation makes any strong interpretive statements highly suspect.

Constantinople (1973) in her discussion of some common assumptions regarding masculinity-femininity questions whether the construct is best defined in terms of sex differences in item responses. The strictly empirical approach to test construction would include any item that discriminates men from women regardless of the triviality or cultural-historical specificity of the item. "In all probability the length of the big toe would discriminate men

from women but does having a longer big toe than most women make a woman less 'feminine?'" (Constantinople, p. 405). Also, on the Mf scale the meaning of some of the explicitly sexual items may have changed over time, especially the ones which are reversed scored for men and women. For example, a woman's False response to "I wish I were not bothered by thoughts about sex" is scored in the feminine direction. Perhaps a very "feminine" woman does not consciously experience many explicitly sexual thoughts and is, therefore, not bothered by them. An androgynous woman may give a similar reply for an entirely different reason--she may actively enjoy her explicitly sexual thoughts and fantasies. Changes in societal mores and sexual behavior may likewise have tampered with the reverse scoring and meaning of such items as "I like to talk about sex" and "I have never indulged in any unusual sex practices."

Although the Mf scale was constructed using an empirical approach, recall that the male-female sexual differentiation of the items was not the primary basis for selection. Drake (1953) developed a Sex Differential scale using the MMPI items that showed the largest differences in frequency of endorsement for males and females. Despite considerable overlap with the Mf items, the scales are by no means identical. Drake's scale is based solely on sensitivity to male-female differences--a dubious conceptualization of masculinity-femininity according to Constantinople,

nevertheless, its empirical base is clear. The Mf scale, on the other hand, attempts to assess male-female differences as well as normal male-invert male differences and combine them in one scale. It seems only reasonable that the validity of this measure would be greater for men than for women; yet, there is no dearth of interpretive hypotheses for "deviant" Mf scores in women, especially low ones.

Carson (1969) in describing the content of the Mf scale states that the items have to do with "interests, vocational choices, aesthetic preferences and an activity-passivity dimension" (p. 482). Most of the clinical interpretive suggestions heavily emphasize the activity-passivity dimension (e.g., passive, submissive, yielding, and aggressive, dominating, competitive); however, upon examination the items show this dimension to be directly assessed in very few questions. Pepper and Strong (1958) rationally divided the Mf scale into 5 subscales of content as follows: Personal and Emotional Sensitivity, Sexual Identification, Altruism, Feminine Occupational Identification, and Denial of Masculine Occupations. There is no specific mention of an activity-passivity dimension in Pepper and Strong's content typology, although the 9 items in the Altruism and the 15 items in the Personal and Emotional Sensitivity category include questions suggestive of such a dimension. Some individuals who respond in a given way to these items, may, indeed, be passive and submissive. Possibly others who

respond similarly may be sensitive and altruistic in a more active, efficacious way.

Furthermore, most of the items on the Mf scale deal with interests, occupations, and preferred activities. According to Pepper and Strong's content divisions, a total of 27 items concern feminine occupations or denial of masculine occupations. Certainly preferring to read love stories rather than go hunting represents a physically passive form of enjoyment, but this type of passivity need not extend to the interpersonal, psychological, or intellectual realms. For college students, the masculine and feminine interest items are best at differentiating males from females (Little, 1949; Murray, 1963). Both male and female college students score higher in the feminine direction than the original Minnesota sample of men (Bechtoldt & Dahlstrom, 1953). It is the items dealing with emotional sensitivity, altruism, and aesthetic interests which largely account for the similarly high femininity scores of college men and women. In fact, in this study Scale 5 was the most frequent peak in college men with 30% having 5 as the first or second highest score. There is still a question as to whether college students are preselected for greater femininity or move in this direction as a result of the college experience. Most of the evidence at this time favors the selection hypothesis (Brehm, 1954; Mills, 1954). More recently Kokosh (1969) found that students in the upper range of GPA are higher on Mf than those with

lower grades. Barger and Hall (1964) found that both males and females who score in the masculine direction on the Mf scale drop out of college at a higher rate than those who score in the feminine direction. Femininity as measured by the MMPI scales does not seem to interfere with academic achievement.

Research on Mf in College Women

Despite the tremendous number of MMPIs which have been administered to college students in the name of scientific study, the researchers agree that little definitive work has been done on the correlates of low 5 and high 5 profiles in women (Dahlstrom, et al., 1972; Klopfer, 1966; LaChar, 1974). The three major studies on Mf in college women were all conducted in the 1950's and each utilized slightly different research methodology (Black, 1956, (a), (b); Hathaway & Meehl, 1952).

The Extreme Groups Method

In the Hathaway and Meehl study (1952) the extreme scores method was used, e.g., the responses to an adjective checklist of those who scored in the top quartile on Mf were compared to those who scored in the lowest quartile. Each subject checked adjectives to describe themselves. Ratings of the subject by friends and acquaintances were also obtained. The advantages of using an adjective checklist include systematic coverage and directly comparable results

for all individuals and scales; however, this method does not allow for quantitative distinctions, qualifications, or standardized interpretation of the adjectives to be applied.

The extreme scores methodology has a number of weaknesses which need to be considered when interpreting the result of Hathaway and Meehl's work. Individuals in the same quartile for comparison on Scale 5 may differ greatly on the rest of the scales. Moreover, for some individuals other parts of the profile may be higher or lower than the scale score being considered, i.e., those in the lowest quartile on Scale 5 will have a variety of high points as well as a variety of low points. Dahlstrom, et al. (1972) point out that although, in general, the variation of high and low points in the quartile may cancel out, there are high correlations between scales in some populations. This may lead to contaminated results: Criterion groups formed using the extreme groups method may show characteristics from several MMPI variables because they are simultaneously high on several correlated scales.

The actual results of Hathaway and Meehl's research on Scale 5 are worth examining, keeping in mind the limitations imposed by the methodology. Dahlstrom et al. (1972), extensively summarized the results of this study as follows: When females high on Scale 5 (the masculine direction), were rated by peers the only adjective checked significantly more frequently than for the other groups was "adventurous."

The self-descriptions included adventurous as well as "having physical strength and endurance, poised, easy-going, relaxed, balanced, logical and facing life." Those low on Scale 5 (the feminine direction), were described by others as "sensitive, responsive, modest, grateful and wise"; these women saw themselves as "sensitive and idealistic." Low 5 scores for women are much more common than high scores but little research has been done on the correlates of either type. Hathaway and Meehl comment: "It is a clinical impression that low Mf scores in females represent an almost masochistic passivity" (Black 1956a, p. 161); however, their research does not support such an extreme statement.

Analysis by Relative Elevation

Black's research (1956a) uses a slightly different methodology which may account for discrepancies between his findings and those of Hathaway and Meehl. In the Black study of adjectives associated with the various MMPI codes, criterion groups were formed on the basis of relative elevation within each individual's profile. The adjective checklists of women whose highest score was on Scale 5, and those whose lowest score was on 5 were compared with the lists from the total population, minus the subgroups under consideration. This method gives greater homogeneity to the criterion groups but does not obviate all difficulties, e.g., the peak score of a woman whose highest score is on 5 may not be reliably higher than her other scores; upon repeated

testing such a profile could possibly be categorized in another criterion group. Also, cases in each group may differ in the absolute level of the peak score by as much as three or four standard deviations (Dahlstrom et al., 1972). One way to improve this method is to categorize profiles by the peak score or scores while also taking into consideration the absolute elevation.

The high-point 5 females in Black's adjective study were significantly more often described by peers as "indecisive, rebellious, natural, and unrealistic," than were other groups. They were less frequently seen as "poised, dreamy, polished, or sensitive." In their self-descriptions, those whose peak was on Scale 5 described themselves as "rough, incoherent, shiftless, and unemotional." Infrequently checked self-descriptions of this group included "popular, good-tempered, polished, peaceable, kind, lively, alert, sentimental, and emotional"; they did not consider themselves as having wide or aesthetic interests. Those women whose lowest point in the profile was on Scale 5 were described by their peers as "worldly, popular, decisive, and versatile." The adjectives "energetic, undependable, shy, rough, unrealistic and disorderly" were more infrequently checked by the peers of the low 5 females than by peers of the rest of the sample. The low 5 women paint a less flattering self-portrait than the peer descriptions indicate: They describe themselves as "self-distrusting, self-dissatisfied, moody,

polished, shy, sensitive, neurotic, unrealistic, talkative, sentimental," and as having aesthetic interests. Self-portraits by the low 5 female infrequently included "balanced, independent, decisive, good-tempered, practical, relaxed, and modest."

Black makes several interesting points in discussing the results of his research. He notes that while the peer descriptions do not provide a detailed or clearcut picture of the low 5 scorers, a picture of masochistic passivity is certainly not in evidence. "Energetic" is infrequently checked, yet this is not a sufficiently strong indication of a submissive, passive stance, and the other adjectives portray an effectively functioning personality. The self-descriptions do, on the other hand, suggest a person who does not see herself positively or as effectively defended against her shortcomings (Black, 1956a).

On the basis of his findings for the high 5 women, Black asserts that the adjectives do not support the characterization of "driving, vigorous, and determined" as set forth by Gough (1952), nor is there evidence that it points to "abnormal sexual interest" (Fry, 1949). Perhaps these women may have more masculine interests which result in their being viewed as unrealistic, confused, and rebellious. The self-descriptions are quite different from those of their peers but may be indicative of rebellion against societal stereotypes (incoherent, shiftless, unemotional,

rough, deliberate).

Both of the studies of Hathaway and Meehl (1952) and Black (1956a) were conducted in the 1950's before the burgeoning growth of the Women's Movement. The high 5 profile which was infrequent among college women of the 50's may be somewhat more common today. Furthermore, this research did not consider the other scale elevations in relation to the scores on 5. For some configurations Scale 5 may indeed serve as a measure of dominance-submission, whereas for other patterns it may function differently. Dahlstrom, et al., (1972) comments:

> It is observed clinically that the higher the elevation of the neurotic triad, the lower the value of scale 5 will be in this group. This configuration frequently accompanies a masochistic trend in the adjustive efforts of the woman with self-depreciation, long-suffering sacrifice, and unnecessary assumptions of burdens and responsibilities (p. 195).

Other configurations with a low 5 might not exhibit such masochistic or submissive behavior patterns.

The results of another study by Black (1956b) offer support for the idea that Scale 5 may function differently for various profile configurations. In this study, female college students nominated their peers into 15 personality categories such as most likeable, shy, career-minded, independent, naive, doesn't fit in, best leader, etc. The three or four women in each residence hall receiving a substantial plurality of votes were chosen to be in each

criterion group, with a total of 12-25 in each of the 15 groups. Although this is an intriguing study which uses a normal population and meaningful criteria, the profiles were analyzed by considering the mean scale scores of each criterion group rather than the profile configurations of individuals. It should be kept in mind that the profiles for each of the 15 groups are not those of any individual, and different scales may have more variation than others.

For several of the 15 categories interesting and significant results were obtained on Scale 5: In the group voted "most independent" there was a strikingly large standared deviation on almost all scales. On Scale 5 there was a small cluster of women with scores above 70 T, another cluster around 45 T, and only one score between 49 and 70 T. The bimodal distribution on 5 for this group indicates that both those with very masculine and those with very feminine interests, as measured by the MMPI, were considered to be "independent."

The group voted "most sensitive" also had a bimodal distribution on Scale 5. Over one-half of the sensitive group had very low Scale 5 scores and the rest were above the sample mean; seven individuals were in the 37-41 T range and five fell between 51 and 57 T. Black hypothesizes that there may be two types of individuals considered to be hypersensitive--those who express it intropunitively via depression, withdrawal and anxiety, and those whose sensitivity

is manifested extrapunitively through defiant, tactless or vindictive behavior. Neither the most sensitive nor the most independent group display a typical profile configuration to go along with the bimodal distribution on 5; however, the fact that low and high 5s are found in both of these very different categories supports the idea that not all low or high women will display the same type of active-passive or dominant-submissive behavior, irrespective of the rest of the profile.

Another example of the intricacies involved in analyzing profiles by individual high points or by using extreme groups is illustrated by Black's findings concerning Scale 6 (Paranoia). A high score on Scale 6 (near 70 T) tended to be associated with shyness in the college women studied whereas a peak on 6 tended to be associated with leadership. None of the leaders scored higher than 65 T and 1/3 of the shy group scored 67 T or higher, while only 5.5% of the shy group had a peak on 6. A modest elevation on 6, especially if it is the peak score, may indicate leadership potentialities in college women but extreme elevation may be related to shy behavior. It is likely that Scale 5 is also more complex than commonly thought. The generally accepted interpretive statements concerning high and low Scale 5 scores need to be modified accordingly.

Bipolarity and Unidimensionality of the Mf Scale

The often unclear results and bimodal distributions obtained in the Mf Scale research may be due to the assumptions of bipolarity and unidimensionality of the masculinity-femininity construct which underlie the scale. Constantinople (1973) questions both the assumption that masculinity-femininity is a simple bipolar dimension with masculinity at one end and femininity at the other, and that it can be adequately described by a single score. In both a factor analytic study and in a rationally-derived categorization, the masculine and feminine interest items of Scale 5 were found to be in separate categories rather than opposite ends of a single bipolar continuum (Graham, Schroeder & Lilly, 1971; Pepper & Strong, 1958).

Constantinople argues that the M-F construct is more accurately represented by several scores, one for each of the various subtraits under the masculinity-femininity dimension as presently understood. Substantiation for the usefulness of the multidimensional approach is found in an early report by Webster (1956) on developmental changes in M-F for Vassar students. Items known to discriminate the sexes were divided into three content subscales: I. Conventionality (preferences for conventionally feminine interests); II. Passivity (docility, modesty, lack of aggressiveness, manipulativeness); and III. Feminine sensitivity (emotionality, fantasy, "neurotic trends," aesthetic

interests). Although freshman-senior differences were small, seniors were significantly higher than freshmen on III and lower on I and II. Webster concluded that these college women became more masculine in terms of less conventional, passive behaviors and more feminine with regard to a greater awareness of inner life. It seems likely that the Vassar seniors had an expanded repertoire of behaviors which did not preclude them from scoring high in the feminine direction of the scale.

The Concept of Psychological Androgyny

The concept of psychological androgyny (Bem, 1974), is a more recent formulation of the masculinity-femininity construct which takes account of Constantinople's criticisms and research findings such as those of Webster (1956). According to Bem, the psychologically androgynous person has both masculine and feminine behaviors in his/her repertoire. Such an individual is able to display those that are appropriate to the situation without reliance on stereotypic sex role proscriptions.

> Androgyny further implies that an individual may even blend these complementary modalities into a single act, being able, for example, to fire an employee if the circumstances warrant it, but do it with sensitivity for the human emotion that such an act inevitably produces (Bem, Martyna, & Watson 1976, p. 1016).

The Bem Sex-Role Inventory (Bem, 1974) was designed to measure masculinity and femininity as two independent dimensions. It is a self-report inventory consisting of 60 adjectives, 20 of which were previously rated by college students as typically feminine, 20 as typically masculine, and 20 as neutral. These are rated on a seven-point scale ranging from "always or almost always true" to "never or almost never true"; items were chosen on the basis of sex-typed social desirability, not actual differential endorsement by males and females. In Bem's original scoring scheme a person's androgyny score was based on the difference between the Masculinity and Femininity Scale totals. The closer the score was to zero, the more androgynous the individual. However, this scoring method received much criticism because it did not differentiate those who scored high on both Masculinity and Femininity Scales from those who scored low on both (Bem, et al., 1976; Bem, 1977; Spence, Helmreich & Stapp, 1975; Strahan, 1975). Subsequent research on the differences between the low Masculinity-low Femininity and the high Masculinity-high Femininity groups has supported the distinction between them: Significant differences between the two groups have not been found on all variables studied but low-low scorers do appear to be lower in self-esteem and to display lesser amounts of some androgynous behaviors studied in the laboratory (e.g., responsiveness to a kitten, self-disclosure), than do those

scoring high on both the Masculinity and Femininity Scales (Bem, 1975; Bem, et al., 1976; Schiff, 1977; Spence, et al., 1975).

The revised scoring method makes use of the four-fold classification method suggested by Spence, et al., (1975): Those individuals who score above the sample medians on both the Masculinity and Femininity Scales are considered to be androgynous and those who score below both sample medians are "undifferentiated." If the Femininity score is below the median and the Masculinity score above, the individual is classified "masculine"; one whose Femininity score is above the median and Masculinity score below is classified "feminine."

Other Measures of Psychological Androgyny

Bem's concept of androgyny has stimulated a number of researchers to devise similar measures, although the BSRI has received the most research attention and validation (Kelly & Worell, 1977). Spence, et al. (1974, 1975) developed the Personal Attributes Questionnaire using items from the Sex Role Stereotype Questionnaire of Rosenkrantz, Vogel, Bee, Broverman & Broverman (1968). It consists of three scales (male-valued, female-valued and sex-specific), which were developed by asking college students to rate characteristics "more typically found" in one sex than in the other. Although the content of the gender-valued scales is very similar to that of the BSRI, the PAQ items were judged to be

ideal for both men and women (but more typical of one sex), whereas the BSRI items were chosen for sex-based social desirability.

The PRF ANDRO is a scale derived from the previously standardized Personality Research Form (Jackson, 1967). Items were initially selected from the PRF pool on a "rational-intuitive" basis and later statistically refined. The respondent answers true or false to each self-descriptive statement rather than rating items on a 7-point scale. In order to control for acquiescent response distortion, items are keyed in both the positive and negative direction (Berzins, Welling & Wetter, 1975).

Heilbrun (1976) also constructed independent masculinity and femininity adjective scales similar to the BSRI, PAQ, and PRF ANDRO, although there are several constructional and psychometric differences. Included are items from the Adjective Checklist "that discriminated between college males identified with masculine fathers and college females identified with feminine mothers" (Heilbrun, 1976, p. 184). This scale combines a measure of psychological masculine-feminine identification with gender differences in item endorsement. Both socially desirable and undesirable traits are included but the effect of this mixture has not yet been assessed (Kelly & Worell, 1977).

The sex role inventories presently used to assess androgyny have varying degrees of differences in psychometric

and constructional properties and in item selection procedures. Thus far there has not been sufficient comparative research on these instruments to determine whether they are defining sex-typed, androgynous, and undifferentiated roles in the same way. One study compared the BSRI and the PRF ANDRO scores of college students by examining the agreement in the assignment of sex role category. For both sexes combined only 77 of the 158 respondents (42%) fell in the same sex role category (Gayton, Havu, Ozmon & Tavormina, 1977). Because there may be conceptual differences between the various androgyny measures that are presently indeterminate, the proposed research will utilize the BSRI which has been most extensively validated.

Validity Studies and Other Research on the BSRI

Bem has conducted a number of laboratory studies on the BSRI in order to behaviorally validate the self-reported sex role orientation measured by the instrument. Her research has indicated that an androgynous individual of either sex is able to display "masculine" independence when under pressure to conform, in addition to "feminine" nurturance when interacting with a kitten. Sex-typed individuals on the other hand, were low in one or both of these behaviors (Bem, et al., 1976). Masculine females were quite independent but they were also not significantly less nurturant toward the kitten than were androgynous females. In two other situations, however, the masculine women were less

nurturant than androgynous women (Bem et al., 1976). A lack of difference between the masculine and androgynous women was also found on a measure of self-esteem employed by Schiff (1977). Her study revealed a significantly greater degree of self-esteem among androgynous women than among feminine or undifferentiated women, but no difference in self-esteem between androgynous and masculine women. It appears thus far that on some variables and in some situations the distinction between androgynous and masculine women, as measured by the BSRI, is not as clear-cut as would be theoretically expected (Haglund, 1978).

For males, Bem's behavioral laboratory studies clearly and consistently validate the BSRI.

> Only androgynous males were high in both the instrumental and expressive domains; that is only androgynous males were found to stand firm in their opinion as well as to cuddle kittens, bounce babies, and offer a sympathetic ear to someone in distress (Bem, et al. 1976, p. 1022).

The results for women, as is also true on most conventional measures of M-F, are less consistent but show the same general pattern. Masculine individuals of either sex are high in independence but low in nurturance whereas feminine individuals are high in nurturance and low in independence. The androgynous individuals of both sexes are capable of nurturance and independence, both masculine and feminine behaviors, thus supporting the idea that the androgynous individual has a less restricted behavioral repertoire (Bem, et al., 1976).

Although the validity research on the Bem Sex-Role Inventory has not supported it unqualifiedly, many of the critical studies had not used the revised method of scoring (Hogan, 1977; Strahan, 1975; Spence, et al, 1975). Factor analytic studies have supported Bem's contention that the Masculinity and Femininity scales of the BSRI measure independent constructs rather than a single bipolar trait; however, several item changes and deletions are recommended to increase the homogeneity and interpretability of the scales (Gaudreau, 1977; Waters, Waters & Pincus, 1977; Whetton & Swindells, 1977). In two studies the items "Masculine," "Feminine," and "athletic" were found to do little except identify the biological sex of the respondent and might well be deleted (Gaudreau, 1977; Waters, et al., 1977). Several additional items were considered weak in some studies but not in others. Given these findings it is apparent that more research is needed before recommending further changes in the scale.

Androgyny in Relation to Psychological Health and Adjustment

Aside from the factorial validation of the BSRI, there have been attempts at convergent validation of the assumption that the androgynous individual represents "a new and more human standard of psychological health" (Bem, 1975, p. 643). The traditional view of gender role orientation has considered a psychologically healthy male to be

"masculine" and a psychologically healthy female to be "feminine." Bem's conceptualization of psychological androgyny questions this belief. The androgynous person has a less restricted range of behaviors and should be able to engage in more adaptive, situation-appropriate behavior unhampered by sex-role stereotypes (Bem, 1974).

Research prior to Bem's work offers some indirect support of the idea that a high level of sex-typing may not be the most psychologically adaptive gender role orientation. High femininity in females has been associated with low self-esteem and high anxiety (Cosentino & Heilbrun, 1964; Sears, 1970; Webb, 1963); high masculinity in adult males has been associated with high anxiety, neuroticism, and low self-acceptance, despite better psychological adjustment among masculine males during adolescence (Harford, Willis & Deabler, 1967; Mussen, 1962). Yet, an androgynous person may encounter conflicts in a society which still expects a degree of culturally-approved sex role behavior from its members.

Haglund (1978) in a study of college students examined the adjustment variables of achieving tendency, social self-esteem, role consistency, sensitivity to rejection, and manifest anxiety in relation to androgyny as measured by the BSRI. In general, the androgynous respondent showed better adjustment and less maladjustment on these variables than did the feminine respondents. On some variables, however, the difference between masculine and androgynous

individuals was nonsignificant. As previously mentioned, Schiff (1977) also found androgynous women to be higher on self-esteem than feminine and undifferentiated women but no difference between the masculine and androgynous individuals. This may reflect the scale's inability to differentiate masculine and androgynous orientations, but possibly it reflects the more adaptive stance generally associated with a masculine orientation, e.g., achievement, confidence, assertiveness, high self-esteem. Consider once again the interpretive statements in the MMPI manuals that are associated with high and low Mf scale scores: low scorers are passive, submissive, masochistically self-sacrificing, etc.; high scorers are adventurous, driving, competitive. Although neither characterization is unduly flattering, it seems likely that the latter individual would score higher on the adjustment variables employed in the Haglund study.

The lack of differentiation between the androgynous and masculine women on some psychological adjustment variables is congruent with the belief that cross-sex typing is less maladaptive for women than it is for men. Masculine characteristics are considered as more representative of a psychologically healthy individual and women are given more latitude in terms of sex role deviancy (Broverman, Vogel, Broverman, Clarkson & Rosenkrantz, 1972; Mischel & Mischel, 1971). LaTorre (1976) found that gender role problems are more evident in male than female schizophrenics. Similarly,

a study by Heilbrun (1973) revealed that the relationship between gender role and psychopathology was reliable for males but not for females. These findings are consistent with LaTorre's recent work (1978) comparing college students' scores on the BSRI with psychological adjustment as measured by Lanyon's Alienation (Al) scale and Eysenck's Neuroticism (N) scale (Eysenck & Eysenck, 1968; Lanyon, 1973). Overall, gender role was more related to the psychological adjustment of males than of females. The androgynous males obtained better adjustment scores than those who were classified masculine, feminine, or undifferentiated. Once again, for females the results were less clear-cut, but the one significant and consistent finding was that feminine individuals of both sexes obtained the highest maladjustment scores. Feminine females were notably higher on neuroticism than those classified masculine or androgynous (LaTorre, 1978). Studies by Heilbrun (1976) and Nevill (1977), using several different types of measures, also found androgynous individuals to show better adjustment.

The evidence relating femininity as measured by the BSRI to psychological maladjustment appears congruent with the interpretations given to low Scale 5 scores on the MMPI. But an important difference between the two scales must be remembered: The MMPI measures masculinity-femininity as a bipolar trait and does not allow for the determination of an individual's degree of androgyny. A middle range score on

the Mf Scale would not necessarily indicate an androgynous individual. It is proposed that of the college women who score low on Mf a considerable percentage are, in fact, androgynous. The clinical observation that the higher the neurotic triad, the lower the Scale 5 score (Dahlstrom, et al., 1972) may also be empirically supported because not all women with low 5s will have a high neurotic triad elevation.

The Mf Scale includes several aspects of femininity, but the final score does not differentiate among them. An androgynous woman and a highly feminine woman might share a considerable number of "typically feminine" interests and fantasies, such as raising houseplants or wanting to be a singer, using two items from the MMPI. It is also highly probable that they both played with dolls at one time, which is another item from the MMPI. Because more of the scale items deal with interests and vocations than with emotional hypersensitivity, "neuroticism," or passivity, possibly two very different women in terms of interpersonal style and psychological adjustment could obtain similar Mf scores. Clinicians, of course, may derive information about these areas from other clinical scales.

The question of whether "femininity" is or is not an effective disposition for college students further exemplifies this confusion. LaTorre and Gregoire (1977) and Biller (1973) contend that masculinity is a more effective behavioral trait for college students because academia is a masculine

environment. However, as previously mentioned, a higher GPA and a lower dropout rate is associated with Mf Scale scores higher in the feminine direction (Barger & Hall, 1964; Kokosh, 1969). Webster's findings (1956) on the Vassar women are relevant here also. Sensitivity to feelings and aesthetic interests are the more healthy aspects of femininity conducive to effective functioning, whereas poor self-image and lack of assertiveness are not. Unfortunately, some constructional features of the Mf scale (the assumed bipolarity and unidimensionality, and item heterogeneity weighted in favor of occupations and interests) do not allow for adequate separation of the neurotic type of feminine woman from the one who is more interpersonally androgynous. One way to empirically test this supposition regarding the Mf scale is to compare low 5 women on a measure of interpersonal assertiveness which is independent of feminine interests, hobbies, sexuality, and awareness of their inner emotional life.

Assertiveness and the College Self-Expression Scale (CSES)

Alberti and Emmons (1970) define assertiveness as behavior which enables a person to act in his/her own best interests, or to stand up for oneself without excessive anxiety, to express one's rights without denying those of others. Conversely, the unassertive person

> is unable to express . . . true emotional feelings, fails to refuse unreasonable requests and does not stand up for . . . legitimate rights . . . (such a person) is often taken advantage of and accordingly has little sense of self-esteem or personal dignity. The inability to assert one's rights results in smoldering resentment and suppressed hostility, which in turn frequently produces inappropriate feelings of guilt and remorse (O'Leary & Wilson, 1975, p. 245).

Research has found that lack of assertiveness is related to compliance tendencies (Eisler, Miller & Hersen, 1973), low self-acceptance (Tolor, Kelly & Stebbins, 1976), and difficulties in self-image (Rathus, 1975).

This description of the unassertive person closely parallels that of the low Scale 5 woman, i.e., submissive, masochistically accepting of discomfort, highly constricted, one who assumes unnecessary burdens and responsibilities, and is self-depreciating. Thus it would be expected that if the low 5 woman possesses these characteristics she would also be low on a measure of assertiveness.

The best presently available instrument for measuring assertiveness in college women is the College Self-Expression Scale (Galassi, DeLo, Galassi & Bastien, 1974). This 50-item self-report scale taps feelings aroused in a variety of interpersonal contexts: with family, strangers, business contacts, authority figures, and peers of both sexes. Test-retest reliability for two college samples over a two-week interval has been reported as .89 and .90. The College Self-

Expression Scale (CSES), assesses three dimensions of assertiveness: Positive, Negative and Self-denial. Positive Assertiveness consists of expressing love, admiration, fondness, agreement, and acceptance, whereas negative assertiveness involves the expression of anger, disapproval, annoyance, and dissatisfaction. Self-denial consists of overapologizing, extreme interpersonal anxiety, and excessive concerns about the feelings of others. Respondents indicate agreement or disagreement with 21 positively worded items and 29 negatively worded items using a 5-point Likert scale. The total score is obtained by summing all the positively worded items and reverse scoring, then summing the negatively worded items (Galassi, et al., 1974).

Construct and Concurrent Validity of the CSES

Construct validity was assessed by correlating scores on the CSES with the number of adjectives checked on the various scales of the Gough Adjective Checklist (Gough & Heilbrun, 1965). Assertiveness scores correlated positively, and significantly with the following scales: Defensiveness, Favorable, Self-Confidence, Achievement, Dominance, Intraception, Heterosexuality, Exhibition, Autonomy, and Change. The definitions of these scales portray an individual who is spontaneous, expressive, well-defended, confident, and able to lead and influence other people. CSES scores were significantly negatively correlated with Unfavorable Self-Image, Succorance, Abasement, Deference, and the Counseling

Readiness Scales. These correlations indicate that low scorers on assertiveness view themselves negatively, tended to be oversolicitous of emotional support from others, and experience extreme interpersonal anxiety. Although the correlation between the Personal Adjustment Scale and the CSES scores was positive, it did not reach significance. Poor adjustment among low scorers on the CSES is, nevertheless, indicated by the correlation with the Counseling Readiness and Unfavorable Self-Image Scales. Also as expected, the CSES scores were not significantly correlated with Aggression, Affiliation, Self-Control, Liability, Endurance, or Nurturance (Galassi, et al., 1974).

Current validity was initially established by correlating teaching supervisor ratings and self-ratings on the CSES. The correlation was significant but low, $r = .19$, $p < .01$. These raters were untrained, however, and had no other information on the subject other than his/her performance as a teacher, which may partially account for the low degree of association (Galassi, et al., 1974).

Three additional concurrent validity studies were then conducted to try to raise the rather low validity of the study (Galassi & Galassi, 1974): (1) Dorm residents' CSES self-rated scores were correlated with their floor counselors' assertiveness ratings of them yielding a correlation of .33; (2a) It was predicted that male student legislators would be higher on the CSES than male students in

general, and the latter would in turn be higher than males in "non-people - oriented majors." All groups were ordered in the predicted direction and only the legislators differed significantly from the others; (2b) For females it was predicted that the student legislators would be more assertive than college women in general, and the latter would be more assertive than female students in traditionally feminine majors, e.g., home economics. The female legislators and dorm residents were both significantly more assertive on the CSES than were the women in traditionally feminine majors. The legislators did not score significantly higher than the dorm residents; (3) It was further predicted that students not seeking counseling or those seeking only vocational-educational counseling would be more assertive than personal adjustment counselees. Those seeking personal adjustment counseling were found to be significantly less assertive than the other students, a difference also noted in previous research on differences between these groups (Galassi & Galassi, 1973; Heilbrun, 1960).

Behavioral Criterion Validation of the CSES

The College Self-Expression Scale was further investigated by relating the scores of 81 undergraduates to an overt behavioral criterion. Assertiveness was defined as the subjects insistance that they did, in fact, arrive earlier than the experimental confederate, who claimed to have been there first. The participants who scored higher

on the CSES were significantly more behaviorally assertive in this situation. In general, females were significantly more assertive toward members of the same than the other sex (Stebbins, Kelly, Tolor & Power, 1977).

Another study of the correspondence between behavioral and self-report measures of assertiveness concluded that the CSES is the instrument of choice for measuring assertiveness in college students (Burkhart, Green & Harrison, 1979). Contrary to the frequently encountered finding that behavioral role-playing and self-report measures do not covary, this study found considerable overlap between the two types of measures.

A factorial study of the CSES by Kipper and Jaffe (1978) revealed four main factors instead of the three originally proposed by Galassi, et al. (1974). The identified factors were willingness to take risks in interpersonal interactions, the ability to communicate feelings, setting rules and rectifying injustices, and the tendency to invoke a self-punitive attitude. Although the content of these factors does not exactly correspond to the Positive Assertiveness, Negative Assertiveness, and Self-denial dimensions originally proposed (Galassi, et al., 1974), logically and psychologically there is sufficient similarity to support the validity claims of the CSES (Kipper & Jaffe, 1978). Overall, the research on the College Self-Expression Scale offers evidence of its utility and promise as a diagnostic

and research instrument; test-retest reliability and validity in terms of correspondence with external criteria support its continued use (Bonder, 1975; Burkhart et al., 1979; Galassi & Galassi, 1974; Galassi, et al., 1974; Kipper & Jaffe, 1978; Stebbins, et al., 1977).

CHAPTER II

HYPOTHESES

The hypotheses developed in the current study derive from two major sources: (1) previous research and methodology with the MMPI; and (2) assumptions based on clinical experience with the instrument. Hathaway and Meehl, and Black performed the seminal empirical investigations of the Mf Scale; therefore, the first set of hypotheses (1 - 4) will replicate their methodologies in relation to my hypotheses regarding assertiveness on the CSES and Bem Sex Role Inventory scores. However, since many of the statements included in the MMPI interpretive manuals of Carson and LaChar are based on clinical assumptions, an attempt will be made to empirically support one of these assumptions. The assumption to be examined is whether low T scores on Scale 5 are associated with an elevated neurotic triad profile (high T scores on Scales 1, 2, and 3).

Hypotheses Related to Previous Research Findings and Methodology

1. Based on the adjective checklist findings of Hathaway and Meehl (1950) and replicating their use of the extreme groups' technique (Highest and Lowest Quartiles), the following predictions were made:
   A. It was expected that significantly more of the subjects in the Highest Quartile on Mf (high T

scores), would be categorized as Androgynous or Masculine on the BSRI than those in the Lowest Quartile (low T scores); however, the range of Mf scores for Androgynous women was expected to be considerable, including some of the Mf scores in the Lowest Quartile. Conversely, it was expected that significantly more of the subjects in the Lowest Quartile on Mf would be catergorized as Feminine on the BSRI than those in the Highest Quartile.

B. The clinical interpretations of guides of both Carson (1969) and LaChar (1974) characterized the low 5 female in terms that strongly imply a lack of assertiveness: Carson states, "Low 5 females are passive, submissive, yielding, and demure"; LaChar reports that the low 5 female is "sensitive, modest, and shows a masochistic acceptance of discomfort." Therefore, using extreme groups of high and low 5 females, Highest and Lowest Quartiles, it was predicted that there would be a significant difference in mean assertiveness on the CSES between the two groups, the Highest Quartile group being more assertive than the Lowest Quartile.

C. In the Lowest Quartile the group categorized as Androgynous on the BSRI would have a higher mean assertiveness score on the CSES than the group in

the Lowest Quartile categorized as Feminine and Undifferentiated on the BSRI.

2. Because activity-passivity is not perfectly assessed by the Mf Scale it was expected that there would be only a moderate, though positive, correlation between Mf Scale scores for the entire sample and the scores on the assertiveness measure, CSES. That is, as the Mf scores move in the masculine direction a greater degree of assertiveness, as measured by the CSES, would be evidence.
3. Considering the BSRI category in relation to CSES assertiveness scores, it was hypothesized that the group categorized as Androgynous or Masculine on the BSRI would have a significantly higher mean assertiveness score on the CSES than the group categorized as Feminine or Undifferentiated.
4. Based on the findings of Black (1956) regarding the adjectives associated with high and low 5s' and replicating his individually relative High-Point and Low-Point method, the following predictions were made:
   A. It was expected that significantly more of the High-Point 5 group would be categorized as Androgynous or Masculine on the BSRI than the Low-Point 5 group, and that significantly more of the Low-Point 5 group would be categorized as

Feminine on the BSRI than the High-Point 5 group.

B. It was expected that the High-Point 5 group would show a significantly higher mean assertiveness score on the CSES than the Low-Point 5 group.

C. The Low-Point 5 group categorized as Androgynous was expected to have a significantly higher mean assertiveness score on the CSES than the Low-Point 5 group categorized as Feminine on the BSRI.

Hypotheses 4A through 4C test the same ideas as Hypotheses 1A through 1C using a different method for categorizing the Mf Scale scores as masculine or feminine.

Hypotheses Related to Clinical Assumptions

Given that the sample was taken from a normal college population the possibility was recognized that the number of profiles meeting the criteria to test the following two hypotheses would not be sufficient for statistical analysis; therefore, these hypotheses were not considered to be an essential part of the study.

5. Dahlstrom, et al. (1972) states: "The higher the elevation of the neurotic triad, the lower the value of Scale 5."

   A. Based on the above assumption it was predicted that the 3-point configurations whose three highest scores were on Scales 1, 2, and 3 (i.e., 123, 321, 312, 132, 213), would have a significantly lower mean score on Scale 5 than the rest

of the sample whose highest three points do not include either 1, 2, or 3. The various pattern groupings of 1, 2, and 3 were to be individually compared to the sample mean, given sufficient numbers of subjects per group.

B. A high neurotic triad is believed to be accompanied by a masochistic trend, the definition of which includes "long-suffering sacrifice" and "unnecessary assumption of burdens" (Dahlstrom, et al., 1972). Therefore, it was predicted that the group whose three highest points included 1, 2, and 3 would have a significantly lower mean assertiveness score on the CSES than the rest of the sample whose highest 3 points did not include 1, 2, or 3.

C. The group with a high 3-point neurotic triad was expected to have significantly more subjects categorized as Feminine on the BSRI than the rest of the sample whose 3 highest points did not include 1, 2, or 3.

D. Of those with a high 3-point neurotic triad (1, 2, 3), the subgroup categorized as Feminine on the BSRI would have a significantly lower mean assertiveness score on the CSES than would the Androgynous, Masculine, or Undifferentiated subgroups.

6. It is further hypothesized that the predictions expressed in Hypotheses 5A through 5D will hold when both relative and absolute elevation are considered. This will be tested by separately analyzing profiles which are "clinically significant," i.e., the high neurotic triad group with one or more T scores at or above 70 would be analyzed separately from the neurotic triad group not meeting the criterion for clinical significance.

CHAPTER III

METHOD

Subjects

Four hundred and forty-five college women participated by completing the MMPI (Hathaway & McKinley, 1943), the Bem Sex-Role Inventory (Bem, 1974), and the College Self-Expression Scale (Galassi, et al., 1974). Of this number there were 419 correctly completed sets of questionnaires used in the data analysis. Participants were obtained from Psychology 160 and 170 classes at Michigan State University during fall, winter and spring terms of 1979-80; they were compensated for their time by receiving extra credit points toward their final grade.

Materials and Procedures

Participants completed the questionnaires in classroom-size groups. The study was explained in both verbal and written form as "an assessment of personality characteristics of college women to aid in the validation of a frequently used psychological test. It will involve filling out three paper-and-pencil personality questionnaires and will take approximately 1 1/2 hours." More specific questions regarding the nature of the study were deferred until all subjects had completed participation. Results in the form of an interpretive summary were made available through

the Human Subjects Coordinator, Room 135, Snyder Hall.

After consent was obtained the participants received a questionnaire packet containing the MMPI, the BSRI, and the CSES. All participants completed the MMPI first. One-half of the participants then completed the BSRI followed by the CSES; the other half then completed the CSES followed by the BSRI. Respondents were identified by an assigned number for purposes of data analysis.

Scoring of the Measures

MMPI - The MMPI responses were recorded on the standard answer sheet available through the Psychological Corporation. The profiles were scored by hand using templates. Scores on all MMPI scales were obtained for all respondents; for Scale 5 the group mean and approximate quartile cut-off points were calculated and are listed in Appendix A.

The Bem Sex-Role Inventory - The BSRI consists of 60 traits, 20 previously rated by college students as feminine, 20 as masculine, and 20 as neutral. Respondents rated themselves on these traits using a 7-point scale ranging from 1 ("never or almost never true") to 7 ("always or almost always true"). Responses were recorded on Michigan State University data sheets to facilitate computer scoring, as were responses to the CSES.

Bem and Watson's revised scoring procedure (Bem & Watson, Note 1, 1976), was applied to the BSRI data.

This procedure makes the necessary distinction between androgynous and undifferentiated subjects (Spence, et al., 1974, 1975). An individual's Masculinity score is the mean of her self-ratings on the 20 masculine adjectives; the Femininity score is the mean of the 20 feminine adjectives. Using the list of the participants' mean Masculinity and Femininity scores, group medians for Masculinity and Femininity scores were determined. Each person was then classified into a Bem sex role category based on the median Masculinity and Femininity scores of the sample, as shown below:

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

A copy of the BSRI and the scoring key are included in Appendix C.

The College Self-Expression Scale - The CSES contains 50 items, 21 of which are positively worded and 29 of which are negatively worded. Participants responded to each item using a 5-point scale: 0, "almost always or always"; 1, "usually"; 2, "sometimes"; 3, "seldom"; 4, "never or rarely." Negatively worded items were reversed scored and the total

scores have a theoretical range of 0-250. A low total score is indicative of a generalized nonassertive response pattern.

CHAPTER IV

RESULTS

In order to examine the clinical assumptions regarding women's Mf scores on the MMPI, three types of scores were obtained for each participant: (1) MMPI scale scores; (2) a Bem Sex Role Inventory category score; and (3) a College Self-Expression Scale score. Table 1, below, shows the mean scores on the 13 MMPI scales for the group of 419 college women.

Table 1. Raw Score Means with K Correction and T Score Equivalents for College Women (N = 419) on the Validity and Clinical Scales of the MMPI

Scale	Mean	T Score of Mean
L	2.82	45
F	6.59	59
K	12.98	51

Hs	13.80	51
D	20.56	52
Hy	21.33	54
Pd	22.54	58
Mf	36.82	50
Pa	10.54	58
Pt	29.83	57
Sc	30.07	61
Ma	23.49	66
Si	26.72	52

For each participant an MMPI profile was plotted and the individual's highest point and two-point codes were determined. The two-point code was based on the relative height of the clinical scale T scores within the individual's profile. Frequencies of the various two-point codes can be found in Appendix B, Table B-1. Also in this appendix (Table B-2) is a listing of the highest single point codes with the frequency and percentage of the profiles that have one or more scores at or above 70 T. Those profiles with at least one score at or above 70 T are considered to be "clinically significant." With the clinically significant designation three ratings are applied: A profile was rated "C" if three or more scores on the clinical scales are at or above 70 T; a "c_2" rating was applied if the profile contained two clinical scales with scores at or above 70 T; and "c_1" was applied if there was only one clinical scale score at or above 70 T.

The mean score on the College Self-Expression Scale (CSES) for this sample was 127.94 with a standard deviation of 19.86. The range of scores on this measure was 70 to 182.

On the Bem Sex Role Inventory (BSRI) the median Femininity score of the sample was 5.10 with a standard deviation of .56; the median Masculinity score was 4.75 with a standard deviation of .76. Table 2 shows the number of participants classified in each sex role category according to the median split method of scoring (Bem & Watson, 1976).

Table 2. Number of Participants in Each Category of the Bem Sex Role Inventory

Femininity Score	Masculinity Score: Above 4.75	Masculinity Score: At or below 4.75
Above 5.10	Androgynous N = 103	Feminine N = 103
At or Below 5.10	Masculine N = 106	Undifferentiated N = 107

The median Masculinity and Femininity scores for the sample are based on a listing of individual's means for the 20 traits comprising the respective scales.

Results of Hypothesis Testing

Hypotheses 1A through 1C used the quartile method of categorizing Mf scores to look at the Mf Scale in relation to scores on the BSRI and the CSES.

Hypothesis 1A - This hypothesis examined the association between Highest and Lowest Mf Scale quartiles and BSRI categories. A 2 X 2 chi-square analysis was performed to test the hypothesis that there would be a greater frequency of Masculine and Androgynous subjects in the Highest Mf Quartile ("masculine" direction), and a greater frequency of Feminine subjects in the Lowest Mf Quartile ("feminine" direction). Highest and Lowest Quartile groups were based on the Mf scores of the entire sample.

Table 3 shows the frequency of subjects in each category used in the analysis.

Table 3. Frequency of Subjects in the Lowest and Highest Mf Quartiles Categorized as Masculine or Androgynous and as Feminine on the Bem Sex Role Inventory

BSRI Category	Lowest Mf Quartile	Highest Mf Quartile
Masculine or Androgynous	N = 59	N = 67
Feminine	N = 35	N = 24

The $\underline{x}^2$ was found to be 2.51, which was not significant at $\underline{p} < .05$ with df = 1. It was thought that the lack of significance may have been due to the inexact and sometimes arbitrary classification of subjects on the BSRI which results from using the median split technique. Subjects were reclassified using Bem's norms for the Masculinity and Femininity Scales which were obtained in her 1976 Stanford sample. The chi-square for this analysis was larger, $\underline{x}^2 = 3.08$, df = 1, yet still did not reach significance at $\underline{p} < .05$.

Further post-hoc examination of the data revealed the lack of significance as due to similarity in Mf quartile classification for the Feminine and Androgynous subjects. The Feminine and Androgynous groups each had 35 subjects in the Lowest Mf Quartile and 24 subjects in the Highest Mf Quartile. Due to this unexpected lack of difference between the Feminine and Androgynous groups a post-hoc chi-square analysis using the Masculine and Feminine groups was performed. For this analysis $\underline{x}^2 = 6.95$, which is significant at $\underline{p} < .01$, with df = 1. These results modify the hypothesis, neither

directly supporting nor greatly contradicting it. It was expected that, using Mf extreme score groups, BSRI Masculine and Androgynous subjects would score similarly and in the more "masculine" direction on the Mf Scale than the BSRI Feminine group. Instead, it was the Feminine and Androgynous subjects who scored similarly on Mf, yet in the less masculine direction on Mf as predicted.

Also, it was expected that the range of Mf scores for women categorized as Androgynous on the BSRI would be considerable, but not necessarily greater than that of women categorized as Feminine or Masculine. For the Androgynous group the raw Mf scores ranged from 25 to 47; for the Feminine group scores ranged from 27 to 49; the Masculine group's range was 26 to 46. (A high raw score is thought to imply high femininity on the Mf Scale.) All BSRI sex role groups showed a wide range of scores on the Mf Scale; however, as the chi-square analysis showed the Masculine group had significantly more subjects in the Highest, more "masculine," Mf Quartile. The Feminine and Androgynous groups had significantly more subjects in the Lowest, more "feminine," Mf Quartile.

Hypothesis 1B - This hypothesis compared the Lowest and Highest Mf Quartile for differences in mean CSES assertiveness scores. The clinical assumption that Mf scores in the "feminine" direction are associated with passivity, submissiveness, and a masochistic acceptance of discomfort is

tested by this comparison. To examine this assumption the mean CSES assertiveness scores for the quartiles were compared using a t-test. The expectation was that the Lowest Quartile, highly feminine women on the Mf Scale would have significantly lower assertiveness scores than the Highest Quartile, highly masculine women. This hypothesis was not supported as the scores in Table 4 clearly show (t = .10, df = 233). A high score on the CSES is thought to be associated with a high degree of assertiveness.

Table 4. Mean Assertiveness Scores on the College Self-Expression Scale for the Lowest and Highest Mf Quartile Groups

	Lowest Mf Quartile	Highest Mf Quartile
Mean CSES Scores	129.13 (N = 120)	128.92 (N = 115)

Hypothesis 1C - This hypothesis examined BSRI category subgroups of the Lowest Mf Quartile for differences in CSES scores. For the Lowest Mf Quartile it was expected that the group categorized as Androgynous on the BSRI would be more assertive on the CSES than the BSRI combined Feminine and Undifferentiated group. A t-test performed on the means of the CSES revealed a significant difference between the Androgynous group and the combined Feminine and Undifferentiated group in the direction supporting the hypothesis (t = 3.75, df = 93, p < .01). The mean CSES score for the Androgynous group of the Lowest Mf Quartile subjects was

135.49; for the combined Feminine and Undifferentiated group in the Lowest Mf Quartile the mean CSES score was 120.55. The Feminine and Undifferentiated groups were clearly not significantly different from one another on the CSES, showing mean scores of 120.80 and 121.92, respectively. These findings show that of the Lowest Quartile, highly "feminine" group on the Mf Scale, assertiveness scores are significantly related to Bem Sex Role Category, and that not all the subjects considered "feminine" on the Mf Scale are low on assertiveness.

Hypothesis 2 - This hypothesis examined the degree of association between raw Mf Scale scores and CSES assertiveness scores for the entire sample. It was expected that there would be a positive but moderate correlation between the Mf and the CSES scores. The Pearson correlation between these variables was $r = -.05$; this does not support the hypothesis that more "masculine" Mf scores are associated with a greater degree of assertiveness, when Bem Sex Role category is not considered.

Hypothesis 3 - In this hypothesis the BSRI categories were examined for differences in mean CSES assertiveness scores; Mf Scale scores were not considered. It was expected that for the sample as a whole the combined Androgynous and Masculine BSRI group would have a higher mean assertiveness score than the combined Feminine and Undifferentiated group. The mean CSES score for the Androgynous and Masculine group

was 136.26 (N = 209), and the mean for the Feminine and Undifferentiated group was 120.15 (N = 219). A t-test found this difference to be highly significant in the predicted direction ($t = 5.15$, df = 417, $p < .01$). Differences between each of the four sex role categories will be considered below.

Hypotheses 4A through 4C

These hypotheses tested the ideas of Hypotheses 1A through 1C using a different method for assessing the degree of masculinity and femininity on the Mf Scale. Instead of Highest and Lowest Quartiles based on the Mf scores of the entire sample, high and low Mf score groups were based on the peak T scores of an individual's MMPI profile (validity scales not included): The High Point 5 ("masculine") group is composed of individuals whose peak T score was on Scale 5 (Mf), and the Low Point 5 ("feminine") group is composed of those whose lowest T score was on Scale 5.

Hypothesis 4A - This hypothesis examined the association between the Mf Scale High Point and Low Point groups and the BSRI categories. For the High Point 5 group there was expected to be a greater frequency of subjects classified as Androgynous or Masculine on the BSRI than in the Low Point 5 group; it was further expected that more BSRI Feminine subjects would be found in the Low Point 5 group than in the High Point 5 group. A 2 x 2 chi-square test was planned but could not be performed because of inadequate

cell size. Table 5 shows the cell frequencies for each of the groups.

Table 5. Number of Subjects Classified as Androgynous or Masculine and as Feminine on the BSRI for the High Point 5 and the Low Point 5 Groups of the MMPI

BSRI Category	MMPI Group	
	Highest Point 5	Lowest Point 5
Androgynous or Masculine	N = 12	N = 54
Feminine	N = 3	N = 40

In order to examine differences in masculinity and femininity between the High Point and the Low Point 5 groups on the Bem, Masculinity and Femininity Scale scores were treated as separate variables rather than combined into the four sex role categories based on the medians of the scales. Although the category method is preferred for analyses involving the concept of Androgyny, the Masculinity and Femininity Scales of the BSRI are statistically independent and reasonable to use in examining the "masculine" and "feminine" groups on the MMPI Mf Scale. A 2 x 2 analysis of variance was performed: Bem Scale Score (Masculinity, Femininity Scale score) x Mf Scale group (Low Point 5, High Point 5). After examination of the chi-square frequencies it was hypothesized that Bem Masculinity Scale scores would be significantly higher in the High Point 5 group and Bem Femininity Scale scores would be higher in the Low Point 5 group.

The analysis of variance summary table is presented in Appendix D.

Table 6. Means of Bem Femininity and Masculinity Scale Scores for the High Point and Low Point Mf Scale Groups

	Mf Scale Group	
Bem Scale	High Point 5 ("Masculine")	Low Point 5 ("Feminine")
Femininity	4.90	5.05
Masculinity	4.93	4.55

A significant effect for the Bem Scale factor was found, F (1, 524) = 9.5, $p < .01$. Femininity Scale scores were significantly higher than Masculinity Scores across both Mf groups, a finding which was not explicitly predicted, yet it is not surprising given that the sample was composed entirely of women. More importantly, a significant Mf Group x Bem Scale interaction effect was obtained, F (1, 524) = 9.3, $p < .01$. In the High Point 5 group there was essentially no difference between Femininity and Masculinity Scale scores. In the Low Point 5 group the Femininity Scale was markedly higher than the Masculinity Scale score. It is this discrepancy between Bem Scale scores in the Low Point 5 group which accounts for the overall difference between Masculinity and Femininity Scale scores across both Mf Scale groups.

In the High Point 5 group the high Masculinity score implies that a Masculine sex role orientation may be common

among this group. Similarly, according to Bem's system, the higher mean Femininity than Masculinity Scale score in the Low Point 5 group implies a more Feminine sex role orientation. Unfortunately, statements cannot be made about the Androgynous group because Masculinity and Femininity Scale scores were considered separately rather than used to categorize subjects into the four sex role groups.

Hypothesis 4B - In this hypothesis the Low Point and High Point Mf groups were compared for differences in mean CSES assertiveness scores. It was predicted that the High Point 5, "masculine," group would have a significantly higher mean assertiveness score on the CSES than the Low Point 5, "feminine" group. This hypothesis found empirical support as the data in Table 7 indicates (t = 2.02, df = 150, $p < .05$).

Table 7. Mean Assertiveness Scores on the CSES for the High Point 5 and the Low Point 5 Groups of the MMPI

	High Point 5	Low Point 5
Mean CSES Score	133.15 (N = 20)	123.53 (N = 132)

In general, individuals whose highest MMPI profile point (T score) is on the Mf Scale tend to be more assertive on the CSES than those whose lowest profile point is on Mf. This finding based on individually relative high and low profile points contrasts with that found in Hypothesis 1B, which used the Highest and Lowest Quartile method based on

the Mf scores of the entire sample. The quartile method did not reveal a significant difference in assertiveness scores.

Hypothesis 4C - This hypothesis examined BSRI category subgroups of the Low Point 5 Mf group for differences in CSES assertiveness scores. For the Low Point 5 group it was expected that the mean assertiveness score of the Androgynous subjects would be higher than that of the Feminine subjects. The data in Table 8, below, shows a trend in the predicted direction but results of the *t*-test fell short of significance ($t = 1.90$, $df = 68$; 1.99 was needed for $p < .05$).

Table 8. Mean Assertiveness Scores on the College Self-Expression Scale of Androgynous and Feminine Groups whose Lowest MMPI Profile Point is Scale 5 (Mf).

	Lowest Point 5 on MMPI	
	Androgynous on BSRI	Feminine on BSRI
Mean CSES Score	129.07 (N = 30)	120.53 (N = 40)

In this group whose lowest profile point was on the Mf Scale (in the "feminine" direction), Androgynous and Feminine groups were not significantly different; however, the mean CSES scores of the Undifferentiated and Masculine subjects in the Low Point Mf group are noteworthy. For the Masculine group the CSES mean was 137.25; Androgynous, 129.07; Feminine, 120.53; and Undifferentiated, 113.32.

The most unassertive group appears to be those categorized as Undifferentiated on the BSRI. Specific predictions regarding the Undifferentiated category were not made because of the lack of information available in the literature about this group. Yet, after noting this trend in assertiveness scores for the Low Point group, a post-hoc hypothesis was made for the entire sample: Assertiveness as measured by the CSES may be highest for the Masculine BSRI group and scores may be progressively lower for the Androgynous, Feminine, and Undifferentiated groups. Table 9 lists the means used in a one-way analysis of variance to test this post-hoc hypothesis. The analysis of variance summary table is presented in Appendix D.

Table 9. Mean Assertiveness Scores on the College Self-Expression Scale for the Bem Sex Role Inventory Categories

	Bem Sex Role Inventory Category			
	Masculine	Androgynous	Feminine	Undifferentiated
Mean CSES Score	137.13	135.36	121.18	119.11

There was an overall significant effect for sex role category, F (3, 415) = 34.29; p < .001. Both the Tukey test corrected for unequal sample sizes and the Newman-Keuls test (Keppel, 1973), found the same pattern of significance between the means (p < .05): (1) The CSES score for the Masculine group was significantly higher than that of

the Feminine group (2) The CSES of the Masculine group was significantly higher than that of the Undifferentiated group; (3) The CSES score of the Androgynous group was significantly higher than that of the Feminine group; and (4) the CSES of the Androgynous group was significantly higher than that of the Undifferentiated group. Not significant were the differences in CSES scores between the Masculine and Androgynous groups and between the Feminine and Undifferentiated groups.

These results are similar to the findings of Hypothesis 1C which found the Androgynous group in the Lowest Quartile on Mf to be significantly higher on assertiveness than the Feminine and Undifferentiated groups. The results of Hypothesis 3 are also similar: Irrespective of the Mf Scale score the mean CSES assertiveness score of the combined Androgynous and Masculine group was significantly higher than that of the combined Feminine and Undifferentiated group.

Hypotheses 5 and 6 - These hypotheses planned to look at the neurotic triad subgroup on the MMPI, which consists of individuals whose three highest T scores are on Scales 1, 2, and 3. Unfortunately, there were only three college women in this sample who had this 3-point profile configuration. These hypotheses could not reasonably be tested but will be referred to in the discussion section.

Also included in the appendix are a number of descriptive statistics for each Mf group considered in the study by the two different methods(quartiles and low-high points). Appendix E provides the mean, standard deviation, and range of the Mf scores, the frequencies of the Bem categories, and the mean and standard deviation of the CSES scores for these groups.

CHAPTER V

DISCUSSION

The MMPI Profile Patterns--A Socio-Cultural Perspective

In order to provide a context for interpreting the results relating to the Mf Scale it is useful to consider the sample distribution of the MMPI profile configurations. Table A-1 in the appendix completely lists the single high point and 2-point codes obtained for this sample of college women.

A comparison with the MMPI patterns of college women of the 1950's would be especially interesting because most of the MMPI research was done at this time; however, Black did not report his data in a comparable manner. The data from the 1950's which is tabulated according to high points is for adult women and it would reflect differences due to age and educational level as well as socio-cultural differences. A more recent study of college women with comparable data is that of Dahlstrom and Reifler (1970). In this 1970 group of 139 female North Carolina freshmen the most common high point was on Scale 5, with approximately 19% of the women having this as a peak T score. For the 1980 Michigan State sample the most common profile high point was Scale 9 (Mania), 42% having this a peak T score. High scorers on this scale are considered to be warm, enthusiastic, expansive,

and generally uninhibited and gregarious (Carson, 1969). The most common 2-point code in 1970 was a 9-6, for 7% of the sample; in 1980 the 9-8 profile was the most common, with 12% of the sample having these as the two highest T scores. It is difficult to make definitive statements about these differences because so much information is lost using the group coding systems currently available. For example, although Scale 5 is a more prevalent high point in the 1970 group, there is no reported information on the absolute level of the scores. With this qualification in place the speculation can begin.

One difference between these samples is in the dispersal of common profile patterns. For 1970 sample there was a greater dispersal of high points; Scales 5 and 9 were the most prevalent, each as a high point in roughly 18% of the group. But in the 1980 sample the frequency of Scale 9 as high point was a striking 42%. The 2-point codes also show a similar dispersal trend. The 1970 groups' most frequent 2-point codes were 9-6, 0-6, and 6-3 occurring in 7%, 5%, and 5% of the sample, respectively. In contrast, the 1980 sample shows a more distinct grouping around the 9-8 and the 9-4 patterns, with 12% and 10% respectively.

What might this difference in dispersal of profile patterns mean? It may be an artifact or result from regional differences in the sample. Another speculation is that it reflects a difference in the socio-cultural milieu of

college women in 1970 versus 1980. This idea will be further developed by considering the specific scales that are differentially common in the two samples.

In 1970, when the Women's Movement was a rising social and political force, college women may have been more keenly aware of the "masculine" sides of themselves, which may account for the greater frequency of Scale 5 as a peak T score. The dispersal of patterns in 1970 could reflect a greater focus on individualism, and the prominence of Scale 6 (Paranoia) could reflect a concern with interpersonal sensitivity as well as awareness of personal feelings. The 9-8 and 9-4 profiles of the 1980 sample might reflect a greater disallusionment and an angry alienation after the hopes of the activitist 1960's were dashed. A 9-8 profile is often associated with an inability to relate, or a fear of relating to people which is expressed via distractability operations. The 9-4 individual tends to act out his or her anger in antisocial ways, continually seeking stimulation rather than engaging in organized prosocial behavior (Carson, 1969).

Both the Women's Movement and student activism in general have receded from the intense focus they received in the 60's and early 70's. The emphasis on individual needs and the trend toward self-development seems to have taken the place of other-directed interests. And perhaps women are now less defensively "masculine" in an effort to fit in

with a liberated social image and are becoming more comfortable with the "feminine" sides of themselves as well, thus producing fewer peak T scores in the "masculine" direction on the Mf Scale.

It would also be interesting to compare the MMPI profile patterns of college men with those of the women. For the 1970 sample reported by Dahlstrom and Reifler there were no striking differences in patterns of men and women, except that men more frequently had a high Scale 9 (Mania) and were less frequently high on Scale 0 (Social Introversion). In a speculative vein, the 1980's men might have shown an elevated Mf Scale as well as greater frequency of the 9-8 and 9-4 pattern in comparison to the men of the 1970 study. Both the 1970 and 1980 studies found Scale 9 to be a common high point among college students. Given the energy and youthful exuberance that this age is capable of manifesting it is not surprising to see elevation on this scale.

Comments on the Bem Sex Role Inventory Scores

In this sample of women the median Masculinity and Femininity scores on the BSRI were 4.75 and 5.10, respectively. This compares with 4.89 for Masculinity and 4.76 for Femininity in the Bem's 1974 sample of Stanford undergraduates. The slightly lower Masculinity score and the considerably higher Femininity score found in the current study is most probably due to the sexual homogeneity of the population. For a mixed-sex subject group the median Femininity score

would be lowered by the males' lower self-ratings on the feminine items and the Masculinity median would be raised in like fashion. This means that there were more equal groupings of Masculine, Feminine, Androgynous, and Undifferentiated subjects in this study than would be found among women in a mixed-sex sample. In a mixed-sex group there would be more Feminine females and fewer categorized as Androgynous and Masculine than was true for this all-female group. This fact should be remembered when comparing the Bem results of the present study with those of others which used a mixed-sex sample.

Given that females were the subject group of interest in the current work, use of both males and females for determining BSRI medians would not have been economical. The use of the BSRI Masculinity and Femininity medians established in other studies would also have been inadvisable. Bem, in describing her scoring procedure, emphasized that the scores should be standardized considering the distribution of the population in question. Androgyny, then, can be viewed as a relative concept rather than as a specified degree of congruity between masculine and feminine traits.

Results Associating Masculinity-Femininity on the Mf Scale to Bem Sex Role Inventory Categories

Two methods of categorizing masculinity and femininity on the Mf scale were employed, the lowest-highest quartile method and the high point-low point profile method.

The two methods led to slightly different but complementary results. The quartile method considered only the Highest and Lowest Quartiles on Mf based on the Mf scores of the entire sample. The Highest Quartile (high T scores on Mf), was the masculine group and the Lowest Quartile was the feminine group. As detailed in the results section it was generally true that more subjects categorized as Feminine on the BSRI were in the "feminine" Mf group, and more of the Masculine subjects on the BSRI were in the "masculine" Mf group. However, contrary to expectation the Androgynous group of subjects did not more frequently fall in the "masculine" than in the "feminine" Mf quartile. In fact, Androgynous S's showed the same pattern as the Feminine S's in terms of frequency in the "masculine" and "feminine" Mf quartiles. It seems that the BSRI and the Mf Scale most similarly categorize individuals who are clearly and traditionally feminine or masculine in sex role orientation, but that individuals who are Androgynous are more frequently categorized as highly feminine on the Mf Scale. Given the assumptions and construction of the Mf Scale this is a readily understandable finding.

The Mf Scale considers masculinity-femininity to be a bipolar construct rather than as two independent unipolar variables. The sex role complexity of the Androgynous individual who theoretically possesses an equal and high degree of both masculine and feminine traits, is ignored by

the bipolarity of the Mf Scale; a high degree of feminine interests or traits necessarily subtracts from the amount of masculinity that can be manifested on the Mf Scale.

Assuming that either masculinity or femininity must be sacrificed by the bipolar Mf Scale, consider why the Androgynous subjects score more frequently in the highly feminine than in the masculine direction. There are several possible reasons. As discussed above, the all-female sample results in a large group of Androgynous women, some of whom might be categorized as Feminine in a mixed-sex sample. Also, the BSRI assesses sex role using self-ratings on traits, whereas the Mf Scale has more diverse content, e.g., occupational preferences, sexual practices, hobbies, in addition to questions about traits. Women who rate themselves fairly high on masculine traits may still manifest feminine interests, occupational preferences, etc. Remember that the Androgynous woman also rates herself high on feminine traits. Chances are that the behavior and interests associated with the feminine traits are more deeply engrained and permeate more aspects of personality than masculine traits, some of which may be newly adopted. An example would be a college woman with a rather traditionally sex-typed upbringing who has recently and successfully become more assertive, independent, and directly competitive. She would probably retain her interest in gardening and her dislike for hunting and mechanics.

The difficulty in predicting where the Androgynous woman would score on the Mf Scale of the MMPI, then, is not only because of the bipolarity-unipolarity difference between the BSRI and the Mf Scale. Each measures sex role in a different way--the Mf Scale more broadly and heterogeneously and the BSRI focused solely on self-rated traits. In addition, it should be recalled that only extreme groups on Mf were studied; the middle quartiles were not explicitly analyzed. A clearer picture of how the Bem categories relate to Mf Scale scores might emerge with analysis of the entire range of Mf scores.

Also, the extreme groups quartile method does not consider the Mf Scale score in relationship to the individual's other MMPI Scale scores. Individually relative high point and low point groups on Mf were formed to partially accomplish this. But because of the small group of subjects whose highest T score was on the Mf Scale the planned statistical analysis could not be done. Instead the Bem Masculinity and Femininity Scale scores were analyzed separately rather than used to classify subjects in one of four categories via the median split technique. The results for the two methods of classifying Mf scores are, therefore, not directly comparable.

When Androgyny is not considered and the separate scale scores are used, the mean Bem scale scores and the Mf Scale categories appear congruent: The highly feminine Mf

group has a high mean Femininity Scale score and a low mean Masculinity Scale score. Conversely, the highly masculine Mf group has a high mean Masculinity score and a low mean Femininity score. So despite considerable differences between the Mf Scale and the BSRI, when extreme masculinity and femininity groups are used the results are very similar. For individuals not as clearly sex-typed the relationship between Bem scores and Mf scores breaks down. It was not the intent of this study to examine the Bem Masculinity and Femininity Scales separately in relationship to Mf scores; however, future analysis of this data might profitably look at the entire range of Mf scores in relation to the Bem scale scores. What has emerged from the present analysis is that Androgynous college women obtained both high and low Mf scores, but they were more likely to obtain Mf scores in the feminine than the masculine direction.

Another point to consider is whether one method of categorizing Mf scores is superior to the other. The quartile method based on the scores of the entire sample certainly has its drawbacks, yet the disadvantages may be less for a stable, "character" scale such Mf than for the other MMPI scales which are more responsive to symptoms, e.g., Depression or Psychasthenia. For the other MMPI scales the interpretation of a score depends more heavily on the relative height of the other scales. For the Mf Scale relative height seems less important than comparison with group norms.

When individually relative high and low Mf groups are formed an extremely large number of subjects are needed to also control for absolute elevation of the scale. Without such control it is possible to have two women whose Mf T scores are both the lowest point in their profiles yet differ greatly in absolute value, e.g., one with a "normal" profile and the other with most scales highly elevated. Also, there were relatively few Ss with peak T scores on the Mf Scale. In future research on this scale a categorizing method based on the scores of the entire sample seems preferable to one based on individually relative high and low points.

Hypotheses Relating Mf Scores to Assertiveness on the CSES

The comparison of the assertiveness scores of the Lowest and Highest Quartiles on Mf found no significant difference. This finding conflicts with the clinical observation that low Mf scores are associated with a passive, submissive, masochistic trend in the personality. The near-zero correlation between Mf scores and CSES scores for the entire sample further questions this assumption. However, these overall findings did not take into consideration Bem sex role category or results on the other MMPI scales. The idea that a low Mf score would be associated with a lack of assertiveness for the group with an elevated neurotic triad on the MMPI (high Scales 1, 2, and 3), was unfortunately not able to be tested because of small frequency--only three

subjects had these scales as their peak T scores. An eyeball glance at these three profiles revealed no clear pattern regarding assertiveness scores; but, interestingly, all three were categorized as Undifferentiated on the BSRI. How the Bem scale might be related to certain MMPI pattern groups is not known at this time.

Although the quartile method of classifying Mf scores and the overall correlation between Mf and CSES conflicts with a clinically based belief, some supporting evidence was found: when individually relative high point and low point groups were compared the High Point Mf group (masculine) did have significantly higher CSES score than the Low Point Group. This may indicate that it is not the absolute elevation of the Mf Scale but the relative elevation within an individual's profile that is associated with assertiveness. It should be noted, however, that Scale 5 was considerably less common as the high point than as a low point in this sample of college women. Individuals in the High Point group may be more divergent from the norm in a number of ways, more so than those in the Low Point group. Further examination of this data might compare the High Point and the Low Point groups for differences on the other MMPI scales or check the frequency of various profile configurations within the two groups.

Before drawing a conclusion about the association between passivity-submissiveness and Mf scores, a closer

look at the results for the highly feminine groups on Mf is warranted. It is low Mf T scores that are thought to be particularly indicative of a passive, masochistically self-sacrificing trend; the clinical assumption under investigation does not state a general relationship between the entire range of Mf scores and this trend.

The Lowest Quartile Mf Women--The Importance of BSRI Category in Relationship to Assertiveness

For the women in the Lowest Quartile on Mf those categorized as Androgynous on the BSRI were significantly more assertive on the CSES than the group categorized as Feminine or Undifferentiated. (And the mean CSES of the Lowest Quartile Androgynous groups was not significantly lower than that of the Highest Quartile Androgynous group.) This finding offers empirical support for the idea that women can be low scorers on the Mf scale and still be interpersonally assertive. The blanket assumption that a low T score on the Mf Scale indicates a passive, submissive, masochistically self-sacrificing trend needs to be qualified. Some women who have traditionally feminine interests which are tapped by the Mf Scale view themselves as possessing both masculine and feminine traits. These Androgynous women with "traditionally feminine" scores on the Mf Scale score higher on assertiveness than women who have traditionally feminine interests and view themselves as possessing primarily feminine traits.

It is not surprising that Androgynous women would score higher on the CSES than Feminine women. Both the BSRI and the CSES are self-report inventories which assess, in different ways, the individual's view of herself. The BSRI asks about traits without a specified situation, whereas the CSES prevents a variety of situations and asks the individual to consider how she would behave. Of course because a person views herself as Androgynous and interpersonally assertive does not necessarily mean that others view her behavior in this manner. Our ego ideal is frequently a few steps ahead of our real self that acts in the world. But what is important about this finding is that not all women with low Mf scores view themselves as "typically feminine." And if you don't see yourself as yielding, passive, and a martyr to the needs of others chances are you are not a walking caricature of femininity.

The results using the low point Mf classification method found a similar trend which did not reach statistical significance: Among women whose lowest T score was on Mf, the Androgynous women had a higher mean CSES score than the Feminine women. The unexpected lack of a significant difference led to a careful scrutiny of the CSES scores of each Bem category in the Low Point Mf group. The Masculine group had the highest mean assertiveness score, followed in order by the Androgynous, Feminine, and Undifferentiated groups. This suggests that Bem sex role category is more

closely related to assertiveness on the CSES than is the Mf Scale score. The trend evidenced among the Low Point 5 women also held for the entire range of Mf scores: Women categorized as Androgynous or Masculine on the BSRI were more assertive than those who were Feminine or Undifferentiated, regardless of Mf Scale score. Knowing a woman's Mf Scale score, even in relation to the rest of her MMPI profile, does not tell you as much about interpersonal assertiveness as does knowing her score on the Bem Sex Role Inventory. It is true that a woman with a low Mf score is more likely to be categorized as Feminine than Masculine on the BSRI; but, there are sizable percentages of all the Bem categories among the most "feminine" women according to the Mf Scale.

An interesting and unexprected finding was that the BSRI Undifferentiated group had the lowest mean assertiveness score of all the Bem categories. (This group rated themselves low on both masculine and feminine characteristics.) The Undifferentiated person can be thought of as lacking an intensity of self-definition; their self-concept may be less sharply defined because there are few characteristics, either traditionally masculine or feminine, which they acknowledge possessing in high degree. Perhaps Undifferentiated individuals are less clear about their identity and are, therefore, less able to stand up forcefully for their beliefs and less able to directly state their needs, rights, and preferences with other people. This is speculative, however;

more research needs to be done on the rather lack-luster Undifferentiated sex role type.

On the basis of these findings what can be concluded about the relationship of Mf scores to the traits of passivity, submissiveness, and "typically feminine" psychological characteristics? Women with extremely low T scores on Mf, especially if it is the lowest T score of the profile, are more likely to view themselves as possessing a lesser degree of "masculine" characteristics. And there is no overall relationship between Mf Scale score and degree of assertiveness. Rather assertiveness is most strongly related to Bem Sex Role category. The Masculine group is most assertive, followed by the Androgynous, Feminine, and Undifferentiated groups, respectively. When comparing an extremely low Mf T score with an extremely high one, chances are that the higher scorer would be more assertive because of the greater likelihood of scoring Masculine on the BSRI. But these results argue for a large measure of caution in assuming that a low T score on Mf implies passivity, submissiveness, etc.

The idea that a low Mf score may have differing implications for various MMPI profile configurations remains worthy of investigation. Although there were only three subjects with Scales 1, 2, and 3 as peak T scores, the frequencies of some other patterns were high enough to be investigated in subsequent studies.

Methodological Criticisms and Implications for Future Research

A common criticism of MMPI research is that much of it is done with "normal" rather than with clinical populations for which the test was designed. This is a valid criticism. In this study the meaning of a "normal" college woman's Mf score may be different from that of a young woman who is seeking psychotherapy or is admitted to a psychiatric hospital. Yet the fact remains that in practice the MMPI is not used solely with clinical populations, and that much of the validity research is done on both normal and clinic groups. A useful next step for the present study would be to compare these results with a small sample of young women seen at a University Counseling Center and at a community clinic. Because the Mf Scale is not considered one of the "clinical" scales the implications of using a normal population for research purposes are not as serious. Nevertheless, cross-validation would lend greater generalizing power to the results.

Although specific effects on the Mf scores may be minimal, using this normal female population greatly lessened the frequency of certain profile patterns and those with scores above 70 T. Several of the hypotheses could not be tested because of this limitation, e.g., Scale 1 (Hypochondriasis) is one scale which is not typically elevated in a college-age population. But despite the relatively small number of profiles which resemble those of a clinic

population, the use of the "clinically significant" designation for profiles with scores above 70 T is an important feature in an MMPI study done on a normal population. With profiles coded in this manner future research can evaluate both the absolute and relative elevation of various scales, thereby more closely approximating a "clinic population."

A great number of research projects could make use of this data on college women to study the other MMPI scales and no other attempt will be made to delineate these. Regarding the Mf Scale: The clinically significant designation could be used to assess whether specific types of psychological disturbances in college women are associated with Mf scores. Perhaps not merely high neurotic triad scores but other high point codes are related to Mf scores. Item analysis of the scale could be performed to investigate whether certain items are out-of-date or no longer valid.

In addition to methodological problems with the MMPI there are also criticisms of the BSRI as a research tool. There remain questions as to whether psychological androgyny does, indeed, represent a more healthy sex role orientation. The fact that Androgynous and Masculine sex role orientations were associated with higher assertiveness scores does not necessarily imply greater psychological health or adjustment in these groups. The College Self-Expression Scale has good reliability and validity for a paper-and-pencil instrument but it can't provide a cut-off separating a socially

approved degree of assertiveness from a sujectively abrasive or obnoxious degree. Also, convergent validity for the several instruments used to measure psychological androgyny has not been accomplished. Future research with a focus on more psychopathological MMPI patterns in relation to the BSRI and the CSES would be better able to assess the assumptions underlying androgyny and assertiveness.

APPENDIX A

DESCRIPTIVE STATISTICS OF THE MF SCALE SCORE GROUPS

APPENDIX A

DESCRIPTIVE STATISTICS OF THE MF SCALE SCORE GROUPS

Table A-1. Descriptive Statistics for all Quartile Groups of Mf Scores

	(Masculine) Highest 1	Quartile 2	3	(Feminine) Lowest 4
Mean	31.37	35.57	37.92	42.03
Range of Raw Scores	24 - 24	25 - 36	37 - 39	40 - 49
Standard Deviation	2.61	.17	.30	1.94
Number of Subjects	115	79	106	119

Table A-2. Descriptive Statistics for Groups with Scale 5 (Mf) as the Lowest or Highest Profile Point

	(Masculine) Highest Point Scale 5	(Feminine) Lowest Point Scale 5
Mean	29.60	40.95
Range of Raw Scores	21 - 36	34 - 49
Standard Deviation	3.04	3.05
Number of Subjects	20	132

APPENDIX B

HIGH POINT AND CLINICALLY SIGNIFICANT PROFILE CODES

APPENDIX B

HIGH POINT AND CLINICALLY SIGNIFICANT PROFILE CODES

Table B-1. Percentage of Codes from College Women (N = 419) in Which Each Pair of High Points Occurs

Second Point		High Point 1	2	3	4	5	6	7	8	9	0	Second Point Total
1	.....		.24	.71	.24				.71	.71	.48	3.09
2	.....	.24			.24	.24	.24	.24	.48	1.19	1.19	4.06
3	.....	.72	.48		1.43	.24	.71		1.19	2.86	.48	8.11
4	.....		1.43	.71		.71	.95	.24	1.19	9.55	.95	15.73
5	.....			.24	.95				.71	3.58	.24	5.72
6	.....	.24	.24	.24	1.43	.95		.48	1.91	7.16	.95	13.60
7	.....		.48	.24	2.39		.24		3.34	2.39	.95	10.03
8	.....		.48	.71	.95	.71	2.15	.71		11.69	.95	18.35
9	.....	.24	.24		3.34	1.67	3.58	1.43	4.06		.95	15.51
0	.....	.24	1.19			.48	.48	.48	.24	2.63		5.74
	High Point Total	1.68	4.78	2.85	10.97	5.00	8.35	3.58	13.83	41.76	7.14	99.94

Table B-2. Highest Point and Clinically Significant Profile Frequencies from College Women (N = 419)

	Highest Point										Total
	1	2	3	4	5	6	7	8	9	0	
Frequency	7	20	12	46	21	35	15	58	175	30	419
Clinical Significance Category**											
C	0	6	0	7	0	4	1	24	5	1	
c_2	2	2	3	6	0	4	1	13	23	0	
c_1	1	2	0	5	1	10	1	6	78	3	
Total Clinically Significant*	3	10	3	18	3	18	3	43	106	4	211
Percentage Clinically Significant	43	50	25	39	14	50	20	74	61	13	

*A profile is considered Clinically Significant if one or more T scores are at or above 70 T.

**A profile is rated C if three or more T scores are at or above 70 T; c_2 = two T scores at or above 70 T; c_1 = one T score at or above 70 T.

APPENDIX C

THE BEM SEX ROLE INVENTORY AND SCORING KEY

APPENDIX C

THE BEM SEX ROLE INVENTORY AND SCORING KEY

AGE_____ CLASS LEVEL (FRESHMAN, SOPHOMORE, JUNIOR, SENIOR) _____

ACADEMIC MAJOR _____

_____

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. Mark your answers with lead pencil on the computer scorable form provided; 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," mark a 3. If it is never or almost never true that you are "malicious," mark a 1 and if it is always or almost always true that you are "irresponsible," mark a 7.

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

Please mark responses on computer-scorable form.

M 1. Self reliant
F 2. Yielding
N 3. Helpful
M 4. Defends own beliefs
F 5. Cheerful
N 6. Moody
M 7. Independent
F 8. Shy
N 9. Conscientious
M 10. Athletic
F 11. Affectionate
N 12. Theatrical
M 13. Assertive
F 14. Flatterable
N 15. Happy
M 16. Strong personality
F 17. Loyal
N 18. Unpredictable
M 19. Forceful
F 20. Feminine
N 21. Reliable
M 22. Analytical
F 23. Sympathetic
N 24. Jealous
M 25. Has leadership abilities
F 26. Sensitive to the needs of others
N 27. Truthful
M 28. Willing to take risks
F 29. Understanding
N 30. Secretive
M 31. Makes decisions easily
F 32. Compassionate
N 33. Sincere
M 34. Self-sufficient
F 35. Eager to soothe hurt feelings
N 36. Conceited
M 37. Dominant
F 38. Soft-spoken
N 39. Likable
M 40. Masculine
F 41. Warm
N 42. Solemn
M 43. Willing to take a stand
F 44. Tender
N 45. Friendly
M 46. Aggressive
F 47. Gullible
N 48. Inefficient
M 49. Acts as a leader
F 50. Childlike
N 51. Adaptable
M 52. Individualistic
F 53. Does not use harsh language
N 54. Unsystematic
M 55. Competitive
F 56. Loves children
N 57. Tactful
M 58. Ambitious
M 59. Gentle
N 60. Conventional

APPENDIX D
ANALYSIS OF VARIANCE SUMMARY TABLES

APPENDIX D

ANALYSIS OF VARIANCE SUMMARY TABLES

Table D-1. Analysis of Variance Relating Bem Scales to MMPI High and Low Point Mf Groups

Source	SS	df	MS	F
Mf Group (A)	.35	1	.35	1.59
Bem Scale (B)	2.09	1	2.09	9.5*
AB	2.05	1	2.05	9.3*
S/AB	114.05	524	.22	

*$p < .01$

Table D-2. Analysis of Variance Relating Bem Sex Role Inventory Categories to College Self-Expression Scores

Source	SS	df	MS	F
Bem Category (A)	27603.86	3	9201.29	34.29*
S/A	11353.09	415	268.32	

*$p < .001$

APPENDIX E

CSES AND BSRI STATISTICS FOR THE MF SCALE GROUPS

APPENDIX E

CSES AND BSRI STATISTICS FOR THE MF SCALE GROUPS

Table E-1. Lowest Mf Quartile Statistics (Feminine)

Mf Scale	CSES	BSRI
Mean = 42.03	Mean = 129.13	Category Frequency
Standard Deviation = 1.94	Standard Deviation = 12.98	Masculine 24
Raw Score Range = 40 - 49		Androgynous 35
N = 120		Feminine 35
		Undifferentiated 26

Table E-2. Highest Mf Quartile Statistics (Masculine)

Mf Scale	CSES	BSRI
Mean = 31.37	Mean = 128.92	Category Frequency
Standard Deviation = 2.61	Standard Deviation = 19.37	Masculine 43
Raw Score Range = 21 - 34		Androgynous 24
N = 115		Feminine 24
		Undifferentiated 24

Table E-3. Lowest Point Mf Group Statistics (Feminine)

Mf Scale	CSES	BSRI
Mean = 40.95	Mean = 123.53	Category Frequency
Standard Deviation = 3.05	Standard Deviation = 19.00	Masculine 24
Raw Score Range = 34 - 49		Androgynous 30
N = 132		Feminine 40
		Undifferentiated 38

Table E-4. Highest Point Mf Group Statistics (Masculine)

Mf Scale	CSES	BSRI
Mean = 29.60	Mean = 133.15	Category Frequency
Standard Deviation = 3.04	Standard Deviation = 19.43	Masculine 8
Raw Score Range = 21 - 36		Androgynous 4
N = 20		Feminine 3
		Undifferentiated 5

APPENDIX F

THE COLLEGE SELF-EXPRESSION SCALE

APPENDIX F

THE COLLEGE SELF-EXPRESSION SCALE

The following inventory is designed to provide information about the way in which you express yourself. Please answer the questions by checking the appropriate box from 0-4 (Almost Always or Always, 0; Usually, 1; Sometimes, 2; Seldom, 3; Never or Rarely, 4) on the computer answer sheet. Your answer should reflect how you generally express yourself in the situation.

1. Do you ignore it when someone pushes in front of you in line?
2. When you decide that you no longer wish to date someone, do you have marked difficulty telling the person of your decision?
3. Would you exchange a purchase you discover to be faulty?
4. If you decided to change your major to a field which your parents will not approve, would you have difficulty telling them?
5. Are you inclined to be over-apologetic?
6. If you were studying and if your roommate were making too much noise, would you ask him to stop?
7. Is it difficult for you to compliment and praise others?
8. If you are angry at your parents, can you tell them?
9. Do you insist that your roommate does her fair share of the cleaning?
10. If you find yourself becoming fond of someone you are dating, would you have difficulty expressing these feelings to that person?
11. If a friend who has borrowed $5.00 from you seems to have forgotten about it, would you remind this person?
12. Are you overly careful to avoid hurting other people's feelings?

0	1	2	3	4
Almost always or always	Usually	Sometimes	Seldom	Never or rarely

13. If you have a close friend whom your parents dislike and constantly criticize would you inform your parents that you disagree with them and tell them of your friend's assets?

14. Do you find it difficult to ask a friend to do a favor for you?

15. If food which is not to your satisfaction is served in a restaurant, would you complain about it to the waiter?

16. If your roommate without your permission eats food that he knows you have been saving, can you express your displeasure to him?

17. If a salesman has gone to considerable trouble to show you some merchandise which is not quite suitable, do you have difficulty in saying no?

18. Do you keep your opinions to yourself?

19. If friends visit when you want to study, do you ask them to return at a more convenient time?

20. Are you able to express love and affection to people for whom you care?

21. If you were in a small seminar and the professor made a statement that you considered untrue, would you question it?

22. If a person of the opposite sex whom you have been wanting to meet smiles or directs attention to you at a party, would you take the initiative in beginning a conversation?

23. If someone you respect expresses opinions with which you strongly disagree, would you venture to state your own point of view?

24. Do you go out of your way to avoid trouble with other people?

25. If a friend is wearing a new outfit which you like, do you tell that person so?

26. If after leaving a store you realize that you have been "short-changed," do you go back and request the correct amount?

27. If a friend makes what you consider to be an unreasonable request, are you able to refuse?

0	1	2	3	4
Almost always or always	Usually	Sometimes	Seldom	Never or rarely

28. If a close and respected relative were annoying you, would you hide your feelings rather than express your annoyance?

29. If your parents want you to come home for a weekend but you have made important plans, would you tell them of your preference?

30. Do you express anger or annoyance toward the opposite sex when it is justified?

31. If a friend does an errand for you, do you tell that person how much you appreciate it?

32. When a person is blatantly unfair, do you fail to say something about it to him/her?

33. Do you avoid social contacts for fear of doing or saying the wrong thing?

34. If a friend betrays your confidence, would you hesitate to express annoyance to that person?

35. When a clerk in a store waits on someone who has come in after you, do you call his attention to the matter?

36. If you are particularly happy about someone's good fortune, can you express this to that person?

37. Would you be hesitant about asking a good friend to lend you a few dollars?

38. If a person teases you to the point that it is no longer fun, do you have difficulty expressing your displeasure?

39. If you arrive late for a meeting, would you rather stand than go to a front seat which could only be secured with a fair degree of conspicuousness?

40. If your date calls on Saturday night 15 minutes before you are supposed to meet and says that he has to study for an important exam and cannot make it, would you express your annoyance?

41. If someone keeps kicking the back of your chair in a movie, would you ask him/her to stop?

42. If someone interrupts you in the middle of an important conversation, do you request that the person wait until you have finished?

0	1	2	3	4
Almost always or always	Usually	Sometimes	Seldom	Never or rarely

43. Do you freely volunteer information or opinions in class discussions?

44. Are you reluctant to speak to an attractive acquaintance of the opposite sex?

45. If you lived in an apartment and the landlord failed to make certain necessary repairs after promising to do so, would you insist on it?

46. If your parents want you home by a certain time which you feel is much too early and unreasonable, do you attempt to discuss or negotiate this with them?

47. Do you find it difficult to stand up for your rights?

48. If a friend unjustifiably criticizes you, do you express your resentment there and then?

49. Do you express your feelings to others?

50. Do you avoid asking questions in class for fear of feeling self-conscious?

0	1	2	3	4
Almost always or always	Usually	Sometimes	Seldom	Never or rarely

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