



NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us a poor photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30. Please read the authorization forms which accompany this thesis.

THIS DISSERTATION
HAS BEEN MICROFILMED
EXACTLY AS RECEIVED

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de mauvaise qualité.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30. Veuillez prendre connaissance des formules d'autorisation qui accompagnent cette thèse.

LA THÈSE A ÉTÉ
MICROFILMÉE TELLE QUE
NOUS L'AVONS REÇUE

CORRELATES OF LOW MMPI Mf SCALE
SCORES IN COLLEGE FEMALES

Sheryl Thau

Thesis presented to the School of
Graduate Studies of the University
of Ottawa as partial fulfillment
of the requirements for the degree of
Master of Arts

Ottawa, Canada, 1979

© S. Thau, Ottawa, Canada, 1980

ACKNOWLEDGEMENTS

This thesis was prepared under the supervision of Professor William F. Barry, PhD., of the School of Psychology of the University of Ottawa.

The author is indebted to Dr. Barry for his excellent guidance and encouragement during all the phases of this research. Thanks is also extended to G. Sarrazin, PhD. for statistical suggestions. The author wishes to thank the students who participated in the study as well as express appreciation to her parents for their continued support.

CURRICULUM STUDIORUM

Sheryl Thau was born on May 4, 1952 in Montréal, Québec. She received the degree of Bachelor of Arts, Major in Psychology with Distinction, from McGill University in 1976. In 1977 she obtained the Bachelor of Psychology Honours degree from the University of Ottawa.

TABLES OF CONTENTS

Chapter	Page
ABSTRACT	vi
INTRODUCTION	1
I REVIEW OF THE LITERATURE	4
Mf Scale clinical correlates	6
Interpersonal modes of adjustment	11
Empirical studies	17
Bipolar and dualistic conceptualizations of masculinity and femininity	22
Parental antecedents	32
Experimental rationale	38
II EXPERIMENTAL DESIGN	43
Subjects	43
Instruments of the study	44
Procedure	71
Data analysis	72
III RESULTS	78
Factor analysis	78
Formation of Mf groups	86
Analysis of variance	86
Pearson correlation	88
Chi-square analysis	91
IV DISCUSSION AND SUMMARY	94
Interpretation of results	94
Ancillary findings	104
Implications for further research	104
BIBLIOGRAPHY	106
APPENDIX	
A Motivation Analysis Test	
B Personal and Parental Attributes Questionnaire	
C Parental Attitude Questionnaire	
D Inter-Scale Correlation Coefficients - Table 5	
E Intercorrelation Matrix for M, M-F, and F Self-Ratings for Present and Normative Samples - Table 8	

LIST OF TABLES

Table		Page
1	Identification of Variables	76
2	Sorted Rotated Factor Loadings	79
3	MMPI Mf Scale Univariate Statistics for Total Sample and Subdivision into Three Mf Groups	87
4	Variables Significantly Differentiating Among Mf Groups	90
5	Inter-Scale Correlation Coefficients	Appendix D
6	Absolute and Relative Frequencies (%) of PAQ Sex-Type Classification for Total Sample and Three Mf Groups	92
7.	Chi ² Comparisons of PAQ Sex-Type Frequencies for Sample with Each Mf Group	92
8	Intercorrelation Matrix for M, M-F, and F Self-Ratings for Present (P) and Normative (N) Samples	Appendix E

ABSTRACT OF
CORRELATES OF LOW MMPI Mf SCALE
SCORES IN COLLEGE FEMALES

In the Minnesota Multiphasic Personality Inventory (MMPI) the clinical correlates of the Mf scale (masculinity-femininity) for females have never been subjected to empirical investigation. A sample of 185 female university students were administered several questionnaires and tests to evaluate the following dimensions: personality (MMPI); motivational dynamics (Motivation Analysis Test); self-ratings on socially-desirable characteristics stereotypically associated with masculinity and femininity (Personal Attributes Questionnaire); ratings of parents on these same attributes (Parental Attributes Questionnaire) and ratings of family atmosphere and parental child-rearing behaviors (Parental Attitude Questionnaire).

Factor Analysis revealed the Mf scale to be clustered with variables reflecting communal, expressive qualities, social introversion, insecurity, and self-dissatisfaction. Breakdown of the sample into subgroups based on Mf raw scores (low, mid, and high) indicated that the Low Mf group was significantly different from the High Mf group on a number of variables. Low Mf females had higher scores on depression and self-dissatisfaction ($p < .01$); higher scores on information-intelligence ($p < .05$); reported more communal,

expressive attributes ($p < .01$), more concern with self-repute and self-concept ($p < .01$) and less instrumental, agentic characteristics ($p < .05$). Inter-scale correlations within the Low Mf group showed that lower Mf T-scores were related to less positive perceptions of family atmosphere and mother's child-rearing behaviors.

This study has supported the accepted interpretation of low MMPI Mf T-scores in females and is thus an initial step in bringing the gap between the clinically observed scale correlates and the empirical verification of such descriptors. Implications for further research are discussed.

INTRODUCTION

The Minnesota Multiphasic Personality Inventory (MMPI) was developed as a tool for the psychiatric diagnosis of clinical patients. The scales were derived from items shown to differentiate between normals and various clinical populations. Over the years, however, it has been demonstrated that the scales are not pure measures of the syndromes suggested by the scale labels. As a result, the current tendency is to treat each scale as an unknown entity and to thereby determine the psychological correlates through empirical research and clinical experience. Although other MMPI scales have been validated by these methods, the clinical correlates of the Mf scale for females have never been subjected to empirical investigation. Despite this lack of verification, the literature is replete with descriptions of the psychological and behavioral correlates of low Mf T-scores in women; almost all derived solely from clinical experience. The essence of these correlates is that the low Mf female's endorsement of femininity is indicative of an overcompensation for her sense of inadequacy as a female.

The present study aims to test the validity of the accepted clinical correlates by examining the relationship of the Mf scale to measures which reflect some of the attributes implicit in the correlates. It is expected that in accordance with the flavour of the correlates, the low Mf

female will report self-dissatisfaction with herself and family and place emphases on particular drives and goals.

The sample used is female students registered at the University of Ottawa, and solicited from various psychology courses. Four measures, including self-reports and objective questionnaires, were chosen to survey a wide range of behavior: personality; self-report of sex-related attributes; report of parental sex-related attributes; attitudes toward the parental home, as well as an objective measure of motivation.

The first chapter of this thesis presents a review of the literature and commences with description of the clinical correlates of the Mf scale, followed by discussion of modes of adjustment corresponding to the correlates. The third section reports previous studies of the Mf scale with female subjects. In the fourth section the theory, nature and implications of bipolar and dualistic conceptualizations of masculinity and femininity are presented, while the fifth section discusses parental antecedents in the development of sex-related personality characteristics. The chapter concludes by stating the experimental rationale.

The second chapter describes the procedure by which the hypotheses stated in the first chapter are tested. It sets forth the details of the study; subjects, instruments, method, and data analysis.

The ~~third~~ chapter presents the results of the

statistical analysis.

The fourth and final chapter presents the summary and discussion of the results of this study, and implications for further research.

CHAPTER I

REVIEW OF THE LITERATURE

The Minnesota Multiphasic Personality Inventory (MMPI, Hathaway & Mckinley, 1943) was developed as a device for the valid psychiatric categorization of new patients at a time when Kraepelin's system of diagnostic categorization was flourishing. Scales reflecting Kraepelinian terminology were developed based upon their ability to differentiate between normals and various clinical populations. With extensive use it has been found that although clinical groups do obtain high scores on the corresponding clinical scales, they often obtain high scores on more than one scale (Graham, 1977). In addition, normal subjects may also have elevations on the clinical scales. Although reliable differences in scores are found among individuals from different clinical reference groups, these trends indicate that the clinical scales are not pure measures of the syndromes suggested by the scale names. As a result, the current approach to MMPI utilization is to treat each scale as an unknown and, through clinical experience and empirical research, the correlates of each scale are identified (Graham, 1977). Therefore the shift is from predictive validity to construct validity (Graham, 1978). When an individual obtains a score on a particular scale, the clinician may then ascribe to that individual the various attributes and behaviors which previous research and

clinical experience have identified for other subjects with similar scores. In keeping with a descriptive as opposed to diagnostic usage, the original scale labels have come to be replaced by numbers.

In terms of the masculinity-femininity scale (Mf), or more recently Scale 5, the current approach has special relevance. As discussed in greater detail in the Instruments section, the Mf scale was originally intended to identify male homosexuality. Because of difficulties in developing a corresponding scale for women, the identical Mf scale is routinely used for females, all but five items being scored in the same direction for both sexes. To simplify interpretation, the Mf scale scores on the female profile sheet are inverted so that for both sexes a low T-score indicates individuals are scoring in the direction of their own gender, while high T-scores correspond to scoring in the direction of the opposite sex. As such, the Mf scale is bipolar; masculinity and femininity comprising opposite poles of a single continuum.

Notwithstanding the very specific derivation of Scale 5 or its inherent notion of masculinity and femininity, the present day approach to the MMPI allows for simply regarding the scale as indicating something about masculinity and femininity and from that point, attempting empirical investigations to determine the personality correlates which correspond to scale scores.

This has been the mode of investigation in MMPI research, but the Mf scale seems to have been by-passed in favour of researching the more clinically oriented scales. There have been investigations of the Mf scale in male populations, especially in attempting to prove or disprove the scale's original intention, but few studies have focused upon empirical investigation of its correlates in a female population. In particular, there has been a lack of research examining the correlates of low T-scores (high raw scores) in females.

Despite the scale's origin, it has been described in its use with women as a measure of psychosexual orientation (Gravitz, 1968), as a measure of sex-role identity (Winer, 1961) as related to concerns about sexual role (Simon, Senturia & Rothman, 1967), and as a measure of dominance-submission (Hathaway & Meehl, 1951).

Mf scale clinical correlates. As will be noted in the following descriptions, correlates are occasionally designated as corresponding to specific populations, i.e., psychiatric or normal. When such designations are made, the overlap or interchangeability of descriptors among selected and unselected populations is remarkable. Further, while most correlates correspond to "low" T-scores, some are attributed to ranges of T-scores, while in many cases relative peaks are considered meaningful.

The most innocuous descriptions of low Mf females are

based upon scale content. Hence, Duckworth and Duckworth (1977) describe scores within T-35 to 50 as typical, and indicative of interests in traditional feminine pursuits. A similar description of an average middle-class vocational and avocational interest pattern is designated for T-scores of 41 to 55 (Lachar, 1974). This contrasts with Simon et al. (1967) who regard scores below T-50 as important while remarking that scores below T-30 are rarely seen. Hanvik and Byrum (1959) regard low (or meaningful) scores in a relative as well as absolute fashion.

The clinical correlates attributed to low Mf females can be grouped into several categories: those attributes stereotypically associated with femininity; attributes, also typically associated with females, but which have a strong negative connotation; and lastly, hyperfeminine scoring as indicative of an inadequate feminine identity.

Scoring low on Scale 5 has been described as scoring in the feminine or passive and dependent direction (Osborne, 1971; Good & Brantner, 1974). Such individuals may be passive, submissive and yielding (Carson, 1969; Graham, 1977, 1978; Lachar, 1974 in reference to T-20-40) and may defer to men in decision-making (Carson, 1969). They have been described as sensitive and modest (Graham, 1977; Lachar, 1974) and constricted and idealistic (Graham, 1977). Similarly, Good and Brantner (1974) describe women scoring below T-45 as sensitive to the environment and better able to recognize and express emotional feelings.

A second grouping has a distinctly negative tone. Most often found is the term masochistic passivity (Marks & Seeman, 1963; Marks, Seeman & Haller, 1974; Hathaway & Meehl, 1951; Good & Brantner, 1974 in reference to psychiatric patients). A similar statement, masochistic acceptance of discomfort, is found in Lachar (1974) while Carson (1969) describes those attaining extremely low T-scores as being unable to tolerate pleasant experiences, as self-pitying, highly constricted, and fault-finding. This same description is specified by Lachar (1974) for low scores among psychiatric populations, although he ascribes a similar description to T-scores between 20 and 40 in an unspecified population. Scores below T-35 are said to indicate a southern belle syndrome; helpless, coy, seductive behavior, and individuals may also be unusually constricted, self-pitying and fault-finding (Duckworth & Duckworth, 1977). When T-30 is reached the helplessness, feigned or real, is usually very evident (Duckworth & Duckworth, 1977). Similarly, Carson (1969) has described low Scale 5 females as passive, submissive, yielding and demure, often to the extent of representing living caricatures of the feminine stereotype. Exaggerated passivity or dependency are noted by others as well (Pearson & Swenson, 1967; Graham, 1977).

The descriptions of exaggerated femininity are taken one step further by interpreting overly feminine attitudes as indicative of an inadequate feminine identity. Low T-scores

are said to "indicate trends toward resolving conflicts about sexuality by exaggeration of typical feminine attitudes" (Simon et al., 1967, p. 63). Similarly, the exaggerated nature of attitudes and behavior is suggestive as covering doubts about the individual's adequacy as a female (Graham, 1977). Pearson and Swenson (1967) characterize very low T-scores as an "overcompensatory reaction to conscious or unconscious doubts about basic sexual identification" (p. 20).

A low Mf score in itself is considered to be a sign of emotional disturbance and is associated with higher scoring on other MMPI scales (Hanvik & Byrum, 1959). 'Women with low Mf scores have been described as manipulative and difficult to influence therapeutically (Hanvik & Byrum, 1959; Lachar, 1974). Lachar (1974) notes that a low Mf is often associated with a neurotic triad (Hs, D, Hy) elevation and it has been said of psychiatric patients that as the elevation of the neurotic triad increases, the value of Scale 5 tends to be lower (Dahlstrom, Welsh & Dahlstrom, 1972). This configuration is clinically described as accompanying a "masochistic trend in the adjustive efforts of the woman, with self-depreciation, long-suffering sacrifice and unnecessary assumption of burdens and responsibilities" (Dahlstrom et al., 1972, p. 276). The authors are unsure of the precise role of Scale 5 in this configuration, but believe it may relate to specific difficulties in sexual

adjustment, especially when there is some elevation on Scales 4(Pd) and 6(Pa).

The presence of a low value on Scale 5 is often (described in relation to an elevation on Scale 4(Pd)). Lachar (1974) finds that with an Mf T-score between 20 and 40, an elevation on Scale 4 indicates the possibility of acting-out of sexual impulses or, in reference to a psychiatric setting, it may also suggest that the individual is very critical and demanding. Scale 9(Ma) may also enter the pattern. The similar Pd-Mf configuration is said to characterize the passive-aggressive personality among those in a psychiatric setting (Good & Brantner, 1974). In a study of subjects who underwent therapeutic abortions, the combination of low Mf and high Pd scores was said to be "consistent with a pronounced sadomasochistic orientation of the character structure", a finding they describe as being independently confirmed by interviews (Simon et al., 1967, p. 128). A later study (Ford, Castelnuovo-Tedesco, & Long, 1972) comparing abortion patients with pregnant controls agreed with the findings of Simon et al., observing as well that many of the women had "difficulties with aspects of their feminine identity as well as distinct masochistic traits" (p. 552). Carson (1969) characterizes women with the Pd-Mf configuration as "hostile, angry people who, however, are unable to express such feelings directly. Instead they resort to various masochistic operations that provoke other

people to anger and rage, often taking satisfaction in pitying themselves because they have been mistreated ..." (p. 290). Drake and Oetting (1959) note a lack of discrimination of aggressive behavior by Scale 4 when accompanied by Scale 5, and therefore assume that Scale 5 acts as a suppressor on the aggressive behavior of women as has been hypothesized for men. Correlates suggested as corresponding to this pattern are anxiety, indecision, and a lack of skills with the opposite sex.

The presence of a mild or moderate elevation on Scale 3 (Hy) in conjunction with a low Scale 5 is said to accentuate the exaggerated passivity or dependency such that the professional should be alert to an "emotional immaturity syndrome characterized by clinging dependency, narcissism, and egocentricity" (Pearson & Swenson, 1967, p. 20).

Carson's (1969) descriptions of females with low T-scores on the Mf scale have been widely repeated over the past ten years. He credits Leary (1957) as being influential in his own formulations of the Mf scale correlates.

Interpersonal modes of adjustment. Leary (1957) was concerned with describing a system of interpersonal diagnosis. In his book he relates the interpersonal language or basic modes of adjustment to Kraepelinian nosology as reflected by scoring tendencies on the MMPI scales. Within the system he outlines the interpersonal behavior of an individual can be regarded as a security operation, i.e. the

prevalent means used to ward off anxiety and maintain a balance of self-enhancement.

Briefly, Leary delineates five levels of personality data. The basic level is public communication which includes overt behavior that can be objectively assessed. The MMPI if used to predict behavior belongs within this classification. The second level is one of conscious description and it includes verbal statements about the self and others as well as say, adjective check-lists. At the third level data concerning private symbolization are tapped. Projective devices, indirect fantasy materials and the MMPI (if interpreted to predict preconscious behavior) are included here. The fourth level is unexpressed and unconscious and comprises interpersonal themes which are systematically and compulsively avoided at all levels. The final level of data consists of values, idealized interpersonal themes or, the ego ideal.

Within this system there are 16 basic modes of adjustment and individuals relying upon one particular interpersonal modality at an overt level may have underlying themes which differ, or organization may be rigid throughout. Thus, the possible permutations are considerable. Further, the consistency with which a mode of adjustment is used within each level varies.

One mode of adjustment has been explicitly linked to the Mf scale, while two others will be mentioned as well due to their apparent correspondence with the Mf scale clinical

correlates.

The mode of adjustment Leary describes as being most related to MMPI profiles emphasizing Pt(obsessive), D(depressive) and Mf(passive) trends is designated as adjustment through self-effacement or, the masochistic personality. Such a person will present a façade of self-effacement (I am weak and inferior) in her overt operations. As a security operation then, anxiety is avoided by means of retiring, embarrassed diffidence and self-depreciation. Socially, such individuals are typically silent, fearful and unsociable. At the mild, adaptive end of the continuum, it may be manifested as a modest, unpretentious reserve while the rigid, maladaptive extremity involves a masochistic self-abasement. Individuals using this interpersonal mode tend to be consciously disidentified with both their mothers and fathers, i.e. renounce similarities.

In psychodynamic terms, masochism here is referred to a self-preservative function of the ego as opposed to a means to gratification. According to Berliner (1947), masochism is a "pathological way of loving" in that the ego by way of introjection, identification and superego processes turns the sadism of the love object upon itself, based upon the need to cling to the vitally needed primary love object (p. 460). Therefore the suffering emanating from the rejecting love object is accepted as if it were love. When this becomes internalized as part of the superego, the resultant constant desire to please and placate the superego causes the

individual to tend to relinquish his identity and to make himself as unlovable as he feels the parent wants him to be.

Within an interpersonal schema, any type of behavior has a greater probability of eliciting a particular kind of response. In the case of self-effacing behaviors, the "automatic reflex operations" which are pulled from others are varying degrees of derogation and superiority, although initially, supportive responses may be evoked (p. 282).

Clinically, Leary describes such patients as depressed, anxious and unhappy. They exhibit guilt and self-depreciation and manifest doubt and obsessive rumination. As well an immobilized passivity is associated. In a clinical setting such individuals are among those who are considered well-motivated for therapy. Leary postulates that along with the masochism, sadistic feelings may also be present as "self-criticism seems inevitably to involve some aspect of hostile criticism expressed against or projected on others" (p. 284).

In relation to the Mf clinical correlates already discussed, this pattern of interpersonal interaction seems to correspond to correlates such as modest, constricted, demure, masochistic acceptance of discomfort, self-pitying mistreated, sadomasochistic and anxious. As well, to be discussed in more detail shortly, Leary's description of this mode of behavior bears a startling consistency with the adjective self-ratings of low Mf females in Black (1956),

i.e. self-dissatisfied, self-distrusting and self-critical.

The Mf scale has not been explicitly linked at level one to the second mode of adjustment to be discussed. However, this classification of interpersonal behavior is relevant in view of its obvious similarity to one aspect of the stereotypic feminine modality; that is, adjustment through docility or, the dependent personality. The interpersonal message conveyed with this security operation is that "I am a meek, admiring person in need of your help and advice" (p. 292). In its moderate form it is expressed as respectful, poignant, or trustful conformity, while its maladaptive intensity reveals a helpless dependency. The MMPI scales implicated in this pattern are D, Pt, and Hy.

The consistency and rigidity of this pattern is, of course, variable and can be situational, i.e. limited to contact with strong, authority figures. As well, there may be opposing motives which exist at other levels. Of note is that the role of docility is very often assumed in a doctor-patient relationship.

The reciprocal tendency that docile conformity pulls is strong, helpful leadership which in turn reinforces the dependent behavior. Such individuals describe their parents as conventional, agreeable and rather nurturant.

Leary's pattern of dependency seems to correspond in part to clinical correlates such as passive, submissive, yielding, deferent, indecisive, helpless and is probably

implicit in statements such as "living caricatures of the feminine stereotype" (Carson, 1969, p. 290). In particular this pattern appears similar to the "emotional immaturity syndrome characterized by clinging dependency, narcissism, and egocentricity" as noted by Pearson and Swenson (1967, p. 20) when Hy is also elevated. Bardwick (1971), discussing the varied nature of passivity, notes that passivity can refer to a state of being dominated and "allowing and preferring domination because it is perceived as love" (p. 123). As well it may be a manipulative means of getting the other to do what one should be doing oneself. Bardwick aptly phrases this as the "tyranny of the weak" (p. 119) and she suggests this will be the preferred mode of ego enhancement in girls who are neither mature nor independent.

The third mode of adjustment is rebellion, or the distrustful personality. Anxiety is handled by establishing a distance between the self and others. Such individuals eschew closeness with others and are threatened by positive feelings. By manifesting distrust and resentment they tend to provoke rejection and punishment from others. As people do not voluntarily seek disappointments and distance from others, these individuals at a conscious level have ideals of and strivings for closeness and tenderness. Consequently, they maintain attitudes of resentment and deprivation and are usually frustrated and dissatisfied with most situations. Individuals manifesting this pattern tend to be consciously

disidentified with their mothers and fathers. The MMPI scales emphasized here are D, Sc, Pd, and F. At a moderate intensity this form of adjustment involves a healthy critical approach to convention and a rebellious skepticism which serves to protect the self against future disappointments.

Some of the clinical correlates that seem to correspond to this mode of interpersonal adjustment are terms such as masochistic acceptance of discomfort, inability to tolerate pleasant experiences, fault-finding, critical, hostile, feeling mistreated and complaining. In a similar vein, Carson (1969) has denoted the Pd-Mf configuration as indicative of women who cannot express hostility directly and who provoke others to anger by various masochistic operations, subsequently often taking satisfaction in pitying themselves over the mistreatment they incurred.

Regarding the Mf clinical correlates within Leary's interpersonal modes of adjustment indicates that they can be conceived of as corresponding to different types of security operations. Although this again reveals a lack of homogeneity among the correlates, it is noteworthy that they neatly fall within a circumscribed portion of conceptually adjacent interpersonal modalities.

Empirical studies. Some attempts at understanding the Mf scale have been made taking a different approach, analysing the content of the scale itself. An unpublished study by Pepper and Strong (cited in Dahlstrom & Welsh, 1960)

divided the Mf scale judgementally into five subscale clusters; ego sensitivity, sexual identification, altruism, endorsement of culturally feminine occupations, and denial of culturally masculine occupations. Another phenomenological study (Gonen & Lansky, 1968) had students evaluate hypothetical responses to Mf items in terms of whether they best fit a unipolar or bipolar scale i.e., masculinity, femininity, or masculinity-femininity. Results indicated that a bipolar model was not exclusively chosen but rather, evidence was provided for a unipolar conceptualization for some Mf scale items.

Factor analysis of the Mf scale with demographic variables in a heterogeneous population comprised of both sexes revealed 29% of the total variance reflected by the first seven rotated factors (Graham, Schroeder & Lilly, 1971). These were designated sensitivity-narcissism, feminine interests, masculine interests, demographic variables, homosexual concern-passivity, social extraversion, and exhibitionism. An additional finding of note was that the factors reflecting masculine and feminine interests were relatively independent of each other. Therefore a high score on say, feminine interests did not necessarily indicate a lack of interest in masculine activities. As such, this further indicates that some items are best conceptualized within a dualistic framework of masculinity and femininity.

Utilizing the data from Graham et al. (1971), Serkownek

(cited in Graham, 1977) developed subscales for Scale 5 by assigning items loading .30 or more on a factor to assess that factor. Fourteen items were scored in the opposite direction from the original scale to be consistent with their factor loadings. The subscale labels, based upon item content, were narcissism-hypersensitivity, stereotypic feminine interests, denial of stereotypic masculine interests, heterosexual discomfort-passivity, introspective-critical, and socially retiring.

Few investigations have been undertaken to determine the personality correlates of women who obtain low T-scores on the Mf scale. Black (1956) in a study of undergraduate females, used an adjective check list to determine correlates of MMPI scales. Ratings of low Scale 5 females by peers did not produce a clearcut description, but suggested a generally effective person; decisive, worldly, versatile, and not undependable or disorderly or shy. Self-ratings by these low Scale 5 students were less positive, there being rather strong indications of self-dissatisfaction, self-distrust and a self-critical awareness of personal shortcomings. The author noted there was no convincing evidence of masochistic passivity in any of the ratings.

A more recent investigation of the behavioral correlates of Scale 5 in a student group of psychiatric outpatients (King & Kelly, 1977) found the significant correlates for T-scores below 30 to be a primary diagnosis of personality

disorder, a secondary diagnosis of adjustment reaction, a tendency to be first born, perfectionistic, and with affect described as labile.

Burger, Armentrout & Rapfogel (1975) compared college students' MMPI's with their responses on a questionnaire concerning parental child-rearing behaviors. Analysis by canonical correlation revealed the salient mother component for females to be Acceptance vs. Hostile Detachment/Involvement. Perception of mothers' Hostile Detachment/Involvement was related to elevations on MMPI scales F, K, Hs, Pd, Sc, and Ma. For father behaviors the component was Instilling Persistent Anxiety Scale and those females who recalled their fathers as instilling anxiety tended to show elevations of the MMPI Mf scale (i.e. higher T-scores, more masculine).

A study by Marzolf (1965) asked students to indicate parental characteristics by completing a 58 item checklist responding as to whether an item was associated with mother, father, or both parents. When females were divided by high and low MMPI Mf scores, two items relating to the father were differentially endorsed by the groups. Significantly more high Mf females ($T=68$) checked "gave me much freedom of choice" while the low Mf group ($T=30$) endorsed "was able to see the viewpoints of others" (p. 363).

At present, there appear to be two distinct trends in the MMPI Mf literature. The more empirical aspect aims most

often towards an understanding of the meaning of the scale per se by various types of content investigations. However, unless the knowledge gained from this area is applicable to clinical use, it remains within the realm of theory.

Therefore, although Serkownek has devised Mf subscales and corresponding norms, clinical interpretation normally relies upon the gross Mf score and thus far the relationship of the subscales to behavioral and personality variables has not been established.

What remains is the literature describing the personality correlates of Mf scores, this body of knowledge apparently based upon clinical experience. What is surprising is the consensus of agreement among clinicians as to the meaning of low Mf scores. The attributes previously discussed are practically repeated verbatim from author to author and from one MMPI text to another. Yet, despite the abundance of very definite statements about low Mf women, there is a dearth of empirical research which attempts to confirm or disprove these descriptors. Certainly the persistence of these statements adds to their credibility, but without empirical evidence, their validity is mere speculation.

The present study is an attempt to investigate empirically the personality correlates of females who obtain low T-scores on the MMPI Mf scale. Rather than propose additional personality attributes based on personal bias, it

was felt that a study focusing on the validation of those often repeated clinical correlates might be more useful.

Bipolar and dualistic conceptualizations of masculinity and femininity. The bipolar conceptualization of masculinity and femininity, implicit in the format of the MMPI Mf scale, has been dominant in the writings of social and behavioral scientists. This convention has led to numerous descriptions and speculations of the fundamental psychological differences that distinguish males and females. Variables such as outer vs. inner space (Erikson, 1964), instrumentality vs. expressiveness (Parsons & Bales, 1955), field independence vs. field dependence (Witkin, 1974), and allocentric vs. autocentric (Gutman, 1965) are among those which have been postulated as the differentiating male and female principles. Attributes are conceived of as existing in sets and having one such set precludes possessing those characteristics associated with the other. Therefore, the presence of masculine attributes is assumed to preclude feminine ones and very often the absence of masculine characteristics is by definition equivalent to femininity (Spence & Helmreich, 1978).

Consistent with such a model, the governing criterion for the inclusion of items in the typical bipolar scale has been the capacity of items to differentiate males from females. As Constantinople (1973) has noted, no attempts were made to develop a conceptual framework to guide item

selection or to distinguish important from trivial aspects of behavior. As a result, scales are invariably heterogeneous in content. This approach is justified, Constantinople believes, only if one assumes that what is surveyed (sex roles, sexual orientation, masculine and feminine attributes, and various gender related phenomena) is not only bipolar but also strongly correlated. Otherwise, the result is a global measure of masculinity and femininity which is difficult to interpret and which may, as in the case of the MMPI, lend itself to much speculation.

Not surprisingly, within this framework, the adjusted individual of either sex is one who scores in a gender consistent fashion. That is, there is a single dimension with masculinity (and most men) at one extreme and femininity (and most women) at the other (Spence & Helmreich, 1978).

Increasingly, there has been growing dispute as to the validity of the conventional bipolar schema. Bakan (1966) has characterized the fundamental modalities of all organisms as a sense of agency and a sense of communion. Agency, reflecting a sense of self and manifested in self-assertion, self-protection and self-expansion is more identified with masculinity. Communion, described as selflessness, concern with others and a desire to be one with others is considered to be the more feminine orientation. A balance within the individual of these coexisting modalities is proposed, by Bakan, to mark adaptation.

Other investigators (Block, 1973; Carlson, 1971; Constantinople, 1973) have also suggested a dualistic model in which masculinity and femininity are conceived as separate dimensions which vary independently. In recent years, new measures of masculinity and femininity have been devised to reflect such a dualistic model (Bem Sex Role Inventory, BSRI, Bem, 1974; Personal Attributes Questionnaire, PAQ, Spence, Helmreich & Stapp, 1974; PRF Andro Scale, Berzins, Welling & Wetter, 1975 [cited in Spence & Helmreich, 1978]). These inventories are not constructed identically, i.e. Bem's scale surveying characteristics judged differentially desirable for one or the other sex, while Spence et al's questionnaire contains clusters of socially desirable attributes stereotypically considered to be more associated with a particular sex. However, all yield separate indices of masculinity and femininity, thereby allowing individuals of either sex to report both agentic and communal attributes. As well, interscale correlations among the four measures are reasonable, ranging from .61-.84 for masculinity and .51-.73 for femininity, indicating at least some overlap in content areas (Kelly, Furman & Young, cited in Worell, 1978).

The result of such scales is a growing belief that the goal in the development of sexual identity is not the achievement of masculinity and femininity as popularly conceived. Block (1973) defines sexual identity as the earning of a sense of self comprising "a recognition of

gender secure enough to permit the individual to manifest human qualities our society, until now has labeled as unmanly or unwomanly" (p. 512). Therefore, Block espouses achievement of an individually defined sex-role which allows for the integration of the masculine and feminine aspects of the self, i.e. an androgynous conceptualization.

As such, both Block (1973) and Bakan (1966) imply that either excessive masculinity or femininity is associated with undesirable attributes as well as desirable ones. Block reports data on subjects participating in a longitudinal study followed for over 30 years. Women categorized, on the basis of two California Psychological Inventory (CPI) scales, as high sex-appropriate and high-socialized were judged to have feminine traits; dependable, conservative, self-controlled, and not aggressive or unconventional. However, Block felt the costs of stereotypic femininity were reflected in additional descriptions of these women as being somewhat dissatisfied, indecisive, vulnerable and lacking in spontaneity.

K. Heilbrun (cited in Spence & Helmreich, 1978) began to investigate the "dark side" of masculinity and femininity. He found the agentic adjectives attributed to males that were relatively low in desirability ratings (i.e. boastful, greedy, hostile, egotistical, opportunistic, etc.) were similar to Bakan's (1966) proposal of unmitigated agency. A parallel of unmitigated communion was not found for items

rated low in social desirability for females. Women were not faulted for devotion to others, but for being indiscriminate in judgment and for lacking balancing agentic characteristics. Heilbrun found, as well that aside from the lack of instrumental qualities (shy, submissive, weak), the undesirable attributes suggested "either a neurotic kind of emotionality - fearful, highstrung, inhibited, moody, whiny-or a stylistically "feminine" type of verbal hostility - complaining, fault-finding, nagging" (p. 119). The similarity of these adjectives to the MMPI Mf scale clinical correlates is remarkable.

Comparison of stereotypes (consensual beliefs) with sex-role conceptions (prescriptive behavior and attitudes) revealed that the differential attribution of gender appropriate characteristics was stronger for traits pre-rated as socially undesirable than for those pre-rated as desirable (Stoppard & Kalin, 1978). Interpretation was that gender-related undesirable traits, as opposed to undesirable traits more associated with the other sex, were more tolerated, but not required for adequate sex-role performance. This is in keeping with the findings of Kelly, Caudill, Hathorn & O'Brien (1977) that females classified as feminine-typed (according to Bem's BSRI) were least likely to describe themselves in terms of the previously rated undesirable masculine characteristics. However, there were no differences among BSRI classified females in self-ratings

for the undesirable feminine characteristics (i.e. helpless, overly emotional, bitchy, indecisive, frequently crying, fickle, vulnerable). Although for males there are indications that excessive instrumentality is directly related to undesirable attributes, the comparable relationship of sex-related undesirable attributes to positively-rated aspects of femininity has not been shown for females.

More often investigated is the suggestion put forth by Bem (1974; 1975) and with Lenney (1976) that androgynous sex roles enhance behavioral flexibility and adjustment, thereby challenging the conception that to adopt a conventional masculine or feminine role is more adjustive. Functioning by either failing to develop or express both aspects may be deleterious, and it is suggested that the temptation may then be to emphasize one at the expense of the other as based on external demands or individual values (Spence & Helmreich, 1978). For women, the integration of communion with agency requires amending the tendency towards submersion of the self and concern for the group by including aspects of agentic self-assertion and self-expression, qualities essential for personal integration and self-actualization (Block, 1973). Therefore, optimal adjustment is seen as necessitating this integration.

However, Block notes that the socialization process (internalization of values) differentially effects the

sexes. In men experiential options are enhanced as traditional feminine concerns (conscientiousness, conservation, interdependence) are emphasized while the negative aspects of the masculine role (opportunism, restlessness, self-centredness) will concurrently tend to be renounced. However for women, socialization reinforces the traditional feminine qualities of submission, docility and nurturance while discouraging attainment of conventional masculine characteristics such as self-assertiveness, achievement-orientation, and independence. Thus options are narrowed for women and the achievement of higher levels of ego functioning is more difficult due to the conflict of individuation with the prevailing cultural norms.

Within the masculine-feminine-androgynous classification system are those individuals who do not possess many of the positively valued characteristics for either sex. Spence and Helmreich (1978) have labeled this group undifferentiated. Females characterized in this manner report themselves as neither ascendant or instrumental, nor as particularly nurturant or gentle. They may be considered as lacking in positive interpersonal skills, i.e. manifesting few of the positively valued masculine or feminine-typed strategies for obtaining interpersonal reinforcements (Kelly & Worell, 1976).

This classification bears some similarity to a second group of females in the longitudinal study already described

(Block, 1973). These women were classified as high sex-appropriate and low-socialized and described as exemplifying an exaggerated definition of sex-role but their sex-role definitions included none of the nurturing, communal qualities. They were described as narcissistic and sexually preoccupied, eschewing both conventional and achievement-oriented values.

Spence and Helmreich (1978) have suggested that undifferentiated females may attempt to validate their sense of femaleness by organizing their self-concepts around conventional role behaviors. This may be related to the distinction made between the sex-role behavior and the internal properties of the behaving organism (Parsons & Bales, 1955; Horrocks & Jackson, 1972; Spence & Helmreich, 1978). Horrocks and Jackson speak of internal character vs. overt expression in terms of role taking as opposed to role playing. In role taking there is a congruency between the self-concept and the behavior performed, the behavior being an overt manifestation of some aspect of the self. In role playing, however, the individual performs behaviors specified by a set of role expectations but is consciously or unconsciously acting in a way contrary to the self-concept. Spence and Helmreich (1978) describe conscious sex-role playing as a frequent phenomenon whereby the individual may yield to situation demands to avoid externally imposed penalties, may use appropriate role behaviors to achieve a

desired outcome, or may behave in a way congruent with a personal value system about correct sex-role behaviors.

Adjectives found on self-ratings to differentiate androgynous from undifferentiated females indicated an overall tendency for the undifferentiated group to attribute to themselves more negative characteristics (i.e. self-doubting, unassured, hostile, heartless, feelingless, ill-tempered) as compared to the androgynous group's endorsement of certain, affectionate, genial, and polished, etc. (Wiggins & Holzmueller, 1978). Similarly, undifferentiated individuals scored lowest on a measure of self-esteem, followed in ascending order by feminine, masculine, and androgynous persons (Spence & Helmreich, 1978).

In comparison, androgyny has recently been considered to be the mark of optimal adaptation. Initial validation studies (Bem, 1974, 1975; Bem & Lenney, 1976) revealed androgynous persons to be less constrained by conventional sex role standards, and androgynous women to be less dependent and conforming. As well, Deutsch and Gilbert (1976) compared scores on an adjustment inventory to BSRI sex-typing and found higher levels of adjustment in androgynous as opposed to sex-typed (feminine) women, but found the masculine-typed males to be more adjusted than their androgynous counterparts.

A more recent study (Jones, O'C. Chernovetz & Hansson,

1978) investigating the hypothesis that androgyny permits greater behavioral flexibility, found that flexibility of response was most typically demonstrated by sex-typed males (masculine) and masculine-typed females (based on BSRI scale). They proposed that general adaptability varies as a linear function of masculinity (assertiveness, decisiveness, intellectuality), considering that instrumentality is what is implicated in the ability to effectively and efficiently accomplish objectives. Jones et al. suggested that more important than gender appropriate traits is the extent to which one has assimilated those tendencies most highly valued by society, the implication being that the capitalistic society, as noted by Bakan (1966) is characterized as one which glorifies agentic or instrumental attributes. Deutsch and Gilbert (1976) proposed that the acquisition of masculine traits by women may be adaptive within a male-oriented society. Similarly, it has been suggested that masculine characteristics are the clinical standard for adult mental health (Broverman, Broverman, Clarkson, Rosenkrantz & Vogel, 1970). This is implicit in a discussion of psychiatric patients in which the authors note that pathology in both sexes results in a relatively passive, dependent, philosophical orientation; women tending to exaggerate their femininity (Stansell, Beutler, Neville & Johnson, 1975).

When subjects were surveyed as to the traits they would want more or less of, both males and females showed a strong

preference for changes in the direction of masculinity, even for those who had previously rated themselves as least masculine (Jones et al., 1978). As there was not a concomitant desire for an increase in feminine attributes, the conception of androgyny as most desirable was, in this case, rejected.

At present, studies attempting to correlate behaviors to sex-typed groups reveal discrepant findings. Clearly, though, those who are feminine-typed or undifferentiated have been thus far revealed as comprising the least adaptive categories. Additionally, there are indications that masculinity may be as adaptive as androgyny. Although results are not at all conclusive, the personality and behavioral correlates found for feminine-typed women have undoubtedly led to some rethinking concerning the supposition of the bipolar view that conventional sex-typing denotes greater adjustment and that deviations are maladaptive and undesirable.

Parental antecedents. The origins of sex-role differences and the personality variables which tend to typify the sexes continue to be the subject of scientific controversy. Numerous factors, such as genetic (Tiger & Fox, 1971, limited innate differences (D'Andrade, 1966), cultural imposition (Barry, Bacon & Child, 1957) have attempted to account for such differences. The approach followed in psychological investigations is the study of the effect of

parental behaviors and child-rearing practices on the development and expression of sex-related personality characteristics. Implicit is the belief that personality is, for the most part, malleable.

The development of new masculinity/femininity measures reflecting a dualistic conceptualization has led to some rethinking of the traditional views of the historical origins of sex-typing. Traditionally, as initially postulated by Freud, an antecedent identification process with the same-sex parent is responsible for the acquisition of gender-appropriate typing (masculinity in males and femininity in females). The child's emotional attachment to the parent and the desire to be like him or her are the core elements which lead the child to emulate the parent and introject his or her values, standards and behaviors. Two aspects of identification were differentially emphasized for the sexes. Identification based on fear or punishment from a powerful parent (defensive identification) has been said to be more influential in the development of boys, while identification based on fear of the loss of a nurturant parent (anaclitic identification) has been considered of greater import in the development of girls (Mowrer, 1950). However, Maccoby and Jacklin (1974) remark that such a theory fails to explain the origins of such differential modes of identification between the sexes.

According to traditional theory, then, females are

1 5

expected to identify with their mothers and thus develop feminine personalities. Within this theory cross-sex typing would be related to identification with the opposite-sex parent and would be regarded as maladaptive. It has been suggested (Kelly & Worell, 1976) that an androgynous sex-typing may be related to identification with both parents.

Other theories of identification stress as well the process of modeling to account for the acquisition of parental characteristics but minimize the possibility of some concurrent internal state as is supposed in the analytic theories. Social learning theories view the acquisition of sex-typed characteristics in terms of imitative and vicarious learning in addition to reinforcement, parents being the principal role models and reinforcers (Kelly & Worell, 1976). According to this theory, they submit that feminine-typed persons should report a "history of, exposure to, and reinforcement for feminine-typed (emotional, sensitive, affectionate) behaviors" (p. 844). In comparison, those exhibiting masculine-typing would have been exposed to and reinforced for agentic, instrumental attributes, while androgyny might then be related to exposure to and reinforcement for both agentic and communal characteristics. Undifferentiated individuals would have experienced then, substantial parental deficiencies in both domains.

The reciprocal role theory (Johnson, 1963) was

specifically designed to explain sex-role development.

Johnson regards identification as the internalization of role relationships rather than as an introjection of parental characteristics. Within his theory, it is the father's differential treatment of son and daughter which produces appropriate sex-role orientation in both sexes. Initially both sexes identify with the warm, nurturant mother. Demands by the father cause the development of instrumental characteristics in the son, while the father's appreciation and reinforcement of his daughter's femininity encourages her to identify with him. Thus, by reciprocal role relationship, he facilitates his daughter's acquisition and identification with the adult female role.

This theory may be reflected in Block's (1973) longitudinal study where she describes the achievement of sex-role definition in a group of females classified as high sex-appropriate and low-socialized (CPI scales) as based upon "reactivity". These women had mothers who were neurotic, rejecting, or poor models and therefore it was believed that their achievement of sex-role definition was molded by the responses of external agents, particularly those of the opposite sex (i.e. reactive). Of note, in view of Johnson's theory, is that the fathers were described as somewhat seductive.

The basic difficulty with the previously mentioned identification theories is that they are premised upon the

well-entrenched bipolar conception of masculinity and femininity. As such, the adjusted male is masculine-typed and the adjusted female is feminine-typed. Similarly, the extensive compilation by Maccoby and Jacklin (1974) of research and theory in sex differences is based upon a bipolar view. At the time, they concluded that an interaction of genetic factors, parental shaping and spontaneous imitation as strongly implicated in sex-role development. However, research based upon a bipolar conceptualization necessarily maximized gender differences while within sex differences are obscured.

The development of a dualistic conceptualization does not necessarily negate the validity of the standard theories of identification, but rather, points out the need for re-evaluation of the area. Block (1973) proposed a developmental model of sex-role development adapted from Loewinger's milestones of ego development. The principal characteristic of each successive stage is (1) gender identity achievement, (2) extension of self, (3) conformity to external role, bifurcation of sex roles, development of stereotypes, (4) examination of self as sex-role exemplar vis-à-vis internalized values, (5) differentiation of sex-role and coping with conflicting aspects of self, and lastly (6) achievement of individually defined sex-role, integration or androgyny. Greater maturity would be associated with higher stages, this being supported by a

study indicating endorsement of more androgynous self-definitions in the principled (highest level) group as based upon Kohlberg's moral reasoning levels (Block, 1973).

The advantage of Block's theory is that it does not negate initial same-sex identification, but postulates a continuing developmental process which can culminate in an integrated sex-role identity. Thus it seems to be that androgyny may be an epiphenomenon of higher levels of ego development. This is consistent with Block's conclusion that an androgynous self-definition is easier to attain when one has initially the self-actualizing (and also masculine) qualities of self-assertiveness and self-expression.

Recent research has attempted to determine parental child-rearing practices by obtaining retrospective reports. One such study (Kelly & Worell, 1976) endorsing an orthogonal view of masculinity and femininity asked students to recall parental child-rearing behaviors and attitudes. They found that perception of parent behaviors differed between students grouped in different sex-typed categories (PRF Andro scale). Masculine-typed women, relative to feminine-typed, reported greater encouragement, especially by father for achievement and intellectual activities, whereas undifferentiated females reported the least amount of stimulation. Androgynous females recalled the greatest maternal reinforcement for curiosity, more maternal involvement and less father permissiveness than masculine-typed females.

Spence and Helmreich (1978) comparing retrospective reports of parent attitudes in student females grouped by sex-type (PAQ scale) found that on most scales androgynous females tended to have the highest means (more positive and distinct parental perceptions), followed by the feminine, masculine and undifferentiated groups.

However, such studies are initial and particularly as the masculinity/femininity measures utilized vary, results may be only cautiously compared. Yet, perception of parental attitudes and child-rearing behaviors appears to be a valuable approach in investigating such attitudes in the adult, especially when perception of one's own sex- role identity appears to be at least tentatively related. .

Experimental Rationale

As previously discussed numerous clinical correlates have been ascribed to women who obtain low Mf scale T-scores on the MMPI. Despite a persistence in the literature of these often pejorative statements, the validity of the correlates have neither been confirmed nor disproved by empirical research. As such, the focus of the present study was to utilize empirical methodology to determine the extent to which the often-repeated clinical correlates would be revealed in a selected group of female university students who obtained low MMPI Mf scale T-scores.

Objective measures of the particular personality and motivational constellations implicit in the often ambiguous clinical terminology of the correlates proved difficult to find. Therefore, measures reflecting different aspects of the correlates were chosen in the hopes of tapping the underlying content areas inherent in the correlates.

By virtue of the bipolarity of the MMPI Mf scale the low Mf female has scored as very feminine and at the same time, less masculine. However, the clinical correlates have suggested that the femininity of the low Mf female is not a relaxed femininity; one which comes with ease and is congruent with the individual's self-concept. Rather, the correlates indicate a disquietude, an inner turmoil and lack of a consistent sense of well-being as a woman. It is expected then that this self-dissatisfaction, self-doubt and lower self-esteem will be revealed by higher scores on the MMPI D (depression) and Pt (psychasthenia) scales.

Similarly, in comparison to females with average or high Mf scores, it is expected that low Mf females will report themselves as more emotionally vulnerable and needful of emotional support as measured by the M-F scale (masculinity-femininity) of the Personal Attributes Questionnaire (PAQ; Spence, Helmreich & Stapp, 1974, 1975).

Despite having scored in a feminine direction on the MMPI Mf scale it is predicted that low Mf females will not describe themselves as having more nurturant or communal

qualities (PAQ F (femininity) scale) than those with high or average Mf scores; i.e. they do not see themselves as having a high proportion of the positively-valued stereotypically feminine attributes. However, it is expected that they will report less agentic, instrumental qualities (PAQ M (masculinity) scale) than other Mf groups.

In terms of PAQ classification by median split it is hypothesized that low Mf females will be disproportionately categorized as undifferentiated or feminine, and least often as androgynous or masculine in comparison to sample proportions as the latter categories are related to self-esteem (Spence & Helmreich, 1978).

In keeping with the hypothesis that low Mf bears some relationship to a lowered self-concept particularly with respect to one's sense of identity and adequacy as a woman, it would be expected that such individuals will be motivated to bolster their uncertainties by reliance on outward or external criteria of feminine success. As such, their motivational dynamics, as measured by the Motivation Analysis Test (MAT; Cattell, Horn, Sweney & Radcliffe, 1959) will reveal this overcompensation by emphases on particular drives and sentiments. Specifically, low Mf females would be expected to be highly motivated by the Mating drive (strongly desiring a satisfying heterosexual relationship) and Sweetheart-spouse sentiment (high attachment to husband or boyfriend). In addition one mode of overcompensation for feelings of inadequacy may be a narcissistic nurturance of the self. Thus it is expected that low Mf females will score higher on

the Narcism sentiment than other groups.

Theories pertaining to identification and the development of sex-related characteristics have acknowledged the importance of parental antecedents in this process (Kelly & Worell, 1976; Maccoby & Jacklin, 1974; Block, 1973). It is hypothesized that self-perceptions of inadequacy and doubts of one's feminine identity may be related to parental deficiencies, particularly with regards to the same-sex parent. Consequently, it is expected that low Mf females will report less positive perceptions of family atmosphere and parental child-rearing behaviors than the other subjects. This would be manifested by lower scores on the following scales; Female Family Harmony and Mother Supportiveness, Mother Positivity and Mother Democracy of the Parental Attitude Questionnaire (Spence and Helmreich, 1978).

In summary, then, there are five specific directional hypotheses to be tested. These are that low Mf females would be different from females obtaining average or high Mf T-scores with respect to a number of variables:

1. higher D (depression) and Pt (psychasthenia) scores
2. lower PAQ self-ratings on Mself (masculinity) and M-Fself (masculinity-femininity); but not different with respect to self-ratings on Fself (femininity)
3. higher scores on the MAT Mating (Mal) and Narcism

(Nal) ergs and Sweetheart-spouse (Swl) sentiment

4. lower scores on the Female Family Harmony and Mother Supportiveness (Harmony), Mother Positivity (Momposit), and Mother Democracy (Mondemoc) scales of the Parental Attitude Questionnaire

5. In comparison to sample proportions, more frequently sex-typed by PAQ scores as Feminine and Undifferentiated and least often as Masculine and Androgynous

The inter-relationships of the measures will be assessed by using factor-analysis to select the more significant clusters. Correlational techniques to determine the nature of the relationships among variables within groups divided on the basis of their Mf scores will be used as well. Analysis of variance will be utilized to determine whether particular group differences are a function of population differences, while the method of chi-square will be used for comparison of frequencies.

Chapter II will explain in more detail the experimental design; subjects used, instruments of the study, procedure, and data analysis.

CHAPTER II

EXPERIMENTAL DESIGN

This chapter describes the method followed in conducting the experimental research to investigate the validity of the clinical correlates attributed to females with low T-scores on the masculinity-femininity scale (Mf) of the Minnesota Multiphasic Personality Inventory as discussed in the preceding chapter. Included is a description of the subjects and materials used, namely: the Minnesota Multiphasic Personality Inventory (MMPI), the Motivation Analysis Test (MAT), the Personal Attributes Questionnaire (PAQ), Parental Attributes Questionnaire, and Parental Attitude Questionnaire. In addition, the procedure followed and statistical analyses applied to the data are described.

Subjects

All subjects were female students enrolled at the University of Ottawa and attending at least one psychology course. Students were told the aim of the research was to determine whether certain tests measured what they were purported to measure in an average female population. The time required to complete the paper and pencil questionnaires was estimated to be between 2½ and 3 hours and would necessitate participation in two sessions of roughly equal

duration. First year students were advised of the allocation of three marks for participation. Of an initial 201 volunteers, 185 females attended both sessions and results for these subjects were therefore available for statistical analysis. Participants ages ranged from 17 to 46 with a mean of 22.63, and standard deviation of 6.01.

Instruments of the Study

The Minnesota Multiphasic Personality Inventory

The Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1943) was administered in its booklet form to all subjects. Each of the basic scales of this test was composed of items selected on the bases of empirical separations between normally adjusted subjects and various psychiatric groups. Over 800 clinical cases were studied in the neuropsychiatric division of the University of Minnesota Hospitals. The primary normative group for both scale construction and norm development was 724 men and women accompanying patients or visiting relatives at the University of Minnesota Hospitals. A second group of normal subjects, whose responses were used mainly in scale derivation, consisted of 265 single and for the most part high school students (152 men, 113 women) between the ages of 16 and 25, seeking vocational guidance at the Testing Bureau of the University of Minnesota. A third group, controls for urban

background and socio-economic level, was comprised of 265 white collar workers in local WPA projects. A final group consisted of 254 patients with physical disorders in University of Minnesota Hospitals. The average normal was approximately age 35, married and a grade school graduate residing in a rural setting (Welsh & Dahlstrom, 1956).

Masculinity-femininity Scale (Mf or Scale 5). The Mf scale was not one of the original clinical scales but was devised sometime later to determine the personality characteristics of male homosexuals. It differs from the original clinical scales in that items were not selected against a single criterion. The responses of a normative group of 54 soldiers on a preliminary scale were initially compared to those of a carefully selected group of 13 male sexual inverts judged relatively free of neurosis. The ability of preliminary scale items to differentiate normal males from a group of 67 female airline employees was also investigated. Thirdly, Terman and Miles' Attitude-Interest Analysis Test was administered to identify males with feminine interests and to compare item endorsement of this otherwise normal group with those of the rest of the male group. Of those items chosen for the final form of the Mf scale, 23 were borrowed from the Attitude-Interest Analysis Test while the remaining 37 were retained from the preliminary Mf scale. The content of the scale is

heterogeneous, embracing interests, religious preferences, family relationships, personal sensitivity, social activities, fears, and sexual concerns (Dahlstrom & Welsh, 1960).

An unsuccessful attempt was made to develop a comparable scale to identify female inversion by contrasting female patients and normal women. As a result the Mf scale is routinely used with female subjects. For both male and female subjects 55 items are keyed in the same direction, while 5 items having sexual content are keyed in opposite directions. T-score conversions are reversed for the sexes on the profile sheets so that a high raw score (more feminine) corresponds to a high T-score for males and a low T-score for females. In this way deviations are depicted in a uniform direction for both sexes, i.e. by high T-scores.

It should be noted that inherent in this scheme is the conception of the Mf scale as a bipolar measure. That is, Mf is a continuum with masculinity at one pole and femininity at the other. Therefore scoring in a more feminine direction indicates not only more of femininity, but at the same time, less masculinity and vice versa. As such, masculinity and femininity are represented as interdependent characteristics.

For the basic MMPI scales normative mean scores are depicted on profile sheets so that they fall at or near a T-score of 50. Although the Mf scale was not included at the time of McKinley and Hathaway's initial normative data, a

T-score of 50 is found on standard female profile sheets to correspond to a raw score of 36-37. Weisgerber (1954) suggests student nurses score appreciably higher on MMPI scales and in his proposed revised norms suggests T-50 correspond to a raw score of 34 for the Mf scale. Studies of college females' mean scores on the Mf scale reveal a tendency to fall within several T-score points of one another; 52.80 (Lough, 1947), 53.03 (Brown, 1948) and 49.0 (Sopchak, 1952).

Studies of test-retest stability of MMPI scores indicate that Mf scores remain relatively stable in female students. Correlations for two college samples after a two-year interval reveal r's of .58 and .59 (Mills cited in Dahlstrom & Welsh, 1960) and retest after a four-year interval in high school females shows a correlation of .53 (Hathaway & Monachesi, 1953).

The MMPI consists of three validity scales (L, F, K) and ten clinical scales (Hs, D, Hy, Pd, Mf, Pa, Pt, Sc, Ma, Si). Each of the remaining scales will be briefly discussed in terms of its initial intention and present clinical interpretation. Correlates presented are modal, and are extracted from Graham (1978).

The Lie (L) scale was constructed to detect a deliberate and unsophisticated attempt by a subject to present himself in a favourable light. A high score is indicative of an individual who is socially conforming, rigid, and

conventional while a low score indicates the individual responded frankly to items and was self-confident enough to admit minor flaws and shortcomings.

The F scale is a measure of deviant or atypical responding. In the original sample of normal adults fewer than 10% endorsed these items. Lower scores indicate social conformity or endorsement of a particular problem area by a generally effective individual. As item endorsement increases correlates range from deviant political, social or religious convictions, moody, and dissatisfied to serious neurotic or psychotic conditions.

The K scale was developed to be a subtle indicator of test-taking attitude. Elevations indicate a defensive attitude; a denial of problems and psychopathology. Low scoring indicates self-criticism, dissatisfaction, a plea for help or the possibility of faking-bad.

Scale 1 (hypochondriasis) or Hs was developed to identify patients who manifested body preoccupation and fears of illness and disease. High scorers have excessive bodily concerns and vague somatic symptoms, tending to be pessimistic, complaining and selfish. Low scorers are free of somatic preoccupation and are optimistic and generally effective persons.

Scale 2 (depression) or D was designed to measure the symptomatology associated with depression, primarily poor morale, pessimism, and a general dissatisfaction with one's

own life situation. High scores are suggestive of depression, self-depreciation, worry, tension, lack of confidence, introversion, and overcontrol. Low scorers tend to be relaxed, confident, emotionally stable and optimistic.

Scale 3 (hysteria) or Hy was developed to identify patients who react to stress situations by developing physical symptoms. High scorers tend to lack insight, deny hostility, and are described as emotionally and psychologically immature, enthusiastic, and friendly. Low scorers tend to be conventional, constricted and realistic.

Scale 4 (psychopathic deviate) or Pd was intended to identify those patients diagnosed as psychopathic personality. Elevated scoring indicates a difficulty in incorporating the values of society, a degree of acting-out, rebelliousness, stormy family and marital relationships, immaturity, and narcissism. Low scoring is associated with social conformity, acceptance of authority, passivity and sincerity.

Scale 6 (paranoia) or Pa was developed to identify individuals with paranoid symptoms. High scorers report feelings of persecution, mistreatment, anger and resentment. Moderate elevations indicate excessive sensitivity, rationalization, and a tendency to blame others. Mild elevations are associated with cooperative, frank, generous individuals. Low scores indicate either a mature, balanced, controlled individual or conversely, if there is other

evidence of maladjustment, the individual may be exceptionally evasive, guarded and suspicious.

Scale 7 (psychasthenia) or Pt was constructed to measure the symptom complex of psychasthenia. In present day nosology the label of obsessive-compulsive neurosis appears most related. Elevations are a good index of psychological turmoil and discomfort; high scorers being anxious, tense, high-strung, introspective, shy and lacking in confidence. Low scorers appear capable, well-adjusted, friendly and adaptable.

Scale 8 (schizophrenia) or Sc was designed to identify patients diagnosed as schizophrenic. High scores indicate confusion, alienation, poor judgment and psychological turmoil. Low scorers tend to be conservative, cheerful, submissive and sensitive.

Scale 9 (hypomania) or Ma was developed to identify those patients manifesting hypomanic symptoms. Elevations reveal an individual who is manifesting excessive purposeless activity, is energetic, talkative, and exaggerates his self-worth. Low scores indicate a low activity level and motivation, anxiety, lack of self-confidence and an overcontrol of feelings.

Scale 0 (social introversion) or Si was designed to assess the tendency to withdraw from social contacts and responsibility. High scores indicate social introversion; shy, retiring, self-effacing, sensitive and over-controlled.

Low scorers are sociable, extroverted, verbally fluent, competitive, self-indulgent, impulsive and manipulative.

The Motivation Analysis Test

The Motivation Analysis Test (MAT) developed by Cattell, Horn, Sweney and Radcliffe (1959) was constructed as an objective device for measuring the ten dynamic structures implicated as being most representative of adult motivations. Cattell et al. have categorized these motivational sources as basic drives (ergs) or sentiments. The ergs are described as sources of "reactive energy ... directed toward a particular goal", while the five sentiments are "an acquired set of attitudes influenced by learning and social experience but also a source of motivation and interest" (p. 2).

Four test devices or subtests are used to determine these ten dynamic structures; End-for-Means (Projection), Autism, Ready Association, and Means-End knowledge. These subtests are respectively labelled on the test forms as Uses, Estimates, Paired Words, and Information. Scores from these subtests can be combined differentially to provide separate strength measures for (1) Integrated or conscious component (Information plus Paired Words) and (2) the Unintegrated or unconscious component (Estimates plus Uses). A final score for each of the factors (Total Motivation) is derived by summation over the four devices and is, essentially, a combination of the aforementioned two scores. Five

additional or experimental scores can be determined from raw scores: Total Conflict - degree of conflict in dynamic life; Total Personal Interest - total capacity to get interested in world (object libido investment); Total Integration - general level of integration in dynamic life; Information/Intelligence - general index of intelligence; General Autism/Optimism - related to happy go lucky characteristics, surgency.

What follows is the authors' description of the 5 basic drives (ergs) and 5 sentiment structures. Under each heading is a brief description followed by statements which attempt to convey the content and meaning of the attitudes reflected in each factor. Correlations of attitudes with the corresponding dynamic factor are bracketed (Cattell et al., 1962).

Ergs

1. Mating (sexual love) Strength of the normal, heterosexual or mating drive
 - (a) I want to fall in love with a beautiful woman/handsome man (.68)
 - (b) I want to satisfy my sexual needs (.60)
2. Assertiveness (vanity) Strength of the drive to self-assertion, mastery and achievement
 - (a) I want to be smartly dressed with an appearance that commands admiration (.67)
 - (b) I want to increase my salary and social status (.47)
3. Fear (escape) Level of alertness to external dangers

- (a) I want my home better protected against the terror of an atomic bomb attack (.55)
 - (b) I want to see the danger of death from disease and accidents reduced (.84)
4. Narcism-comfort Level of drive to sensuous, self-indulgent satisfactions
- (a) I want to lie in bed in the mornings and have a very easy time in life (.24)
 - (b) I want to enjoy fine foods, fine drinks, candies, and delicacies (.58)
5. Pugnacity-sadism Strength of destructive, hostile impulses
- (a) I want my country to go all out to destroy the enemy (.80)
 - (b) I want to see movies or plays showing gangster fights and violence, where many people are injured or slain (.38) (Cattell et al., 1959, pp. 3-4)

Sentiments

6. Self-concept Level of concern about the self-concept, social reputé, and more remote rewards
- (1) The Social Reputation Component of the Self
 - (a) I want to maintain a good reputation and command respect in my community (.58)
 - (b) I want a normal, socially-approved relation to a person of the opposite sex (.47)
 - (c) I want to look after my family so that it reaches proper social standards (.16)
 - (d) I want to be proficient in my career (.45)
 - (11) Control and Understanding of the Self, per se
 - (a) I want to keep my impulses under sufficient and proper control (.42)
 - (b) I want never to damage my sense of self-respect (.90)
 - (c) I want never to lose my mind (become insane) (.84)
 - (d) I want to know myself better (to be wise about myself) (.43)

7. The Superego (socio-parental sanctions, moral ethical ideal self) Strength of the development of conscience
 - (a) I want to satisfy a sense of duty to my community, my country, and my God (.61)
 - (b) I want to see an end to gambling, idleness, excessive drinking, prostitution, and all other forms of vice (.55)
 - (c) I want to be unselfish in my acts (.73)
 - (d) I want to avoid sinful, improper occasions of sexual expression (.82)
8. Career (profession)
 - (a) I want to learn more about the technical skills in my job or job-to-be (.79).
 - (b) I want to stick with my job or chosen career (.58)
9. Sweetheart-spouse Strength of attachment to wife/husband or sweetheart
 - (a) I want to spend time with my sweetheart, enjoying our common interests (.83)
 - (b) I want to bring gifts to my sweetheart, to share in his/her delight in them (.83)
10. Home-parental Strength of attitudes attaching to the parental home
 - (a) I am proud of my parents and want them to be proud of me (.80)
 - (b) I want to turn to my parents for affection, comradeship, and guidance (.87) (Cattell et al., 1959, pp. 3-4)

Testing time requires approximately one hour and although only one subtest is paced (Paired Words), verbal statements read by the examiner at designated times are meant to deter straggling.

The basis of the procedure for changing raw scores to standard scores takes into account the unwanted contributions of the "vehicle" itself on which the motivation measure is carried. Thus the method of attenuation is inherent in the

steps for scoring. The accumulation of any one vehicle effect is similarly attenuated by the inclusion in the MAT of four to six subtests. Scores for each factor are profiled as standard scores in tens; equal units on a ten-point range. This follows a normal distribution with a mean of 5.5, a sigma of 2, and a range of 1 through 10.

The authors have chosen not to have separate male and female norms on the basis that statistical control of sex differences may obscure the possibility of observing real sex differences. However, there are some factors which do significantly correlate with sex. Point biserial correlation with maleness and femaleness indicates a greater relationship of Sweetheart-spouse sentiment with femaleness while the Mating and Pugnacity ergs correlate more highly with maleness.

The standardization group of 1,847 consists of 1,094 males and 753 women. These individuals were mostly young adults ($M=21.54$ years), the majority being college students (866; 526 males, 340 females). The remaining subjects were 156 air force service men as well as 412 men and 413 women from a variety of occupational fields representative of semi-skilled and skilled levels.

The MAT was developed using the principles of factor analytic research. To establish construct validity each factor had to first demonstrate its existence as a unitary dynamic structure in adults of this culture, the pattern

therefore being experimentally replicable with different populations. Scales were then composed, utilizing at least four objective devices, for the measurement of each factor. The range of attitudes measured for each factor and their respective relationships to the particular erg or sentiment was presented earlier. Construct validity was then established by the correlation of each of the ten scale scores with the corresponding pure factor. The multiple correlations derived for all ten factors show validities in the .90's (Cattell et al., 1959).

Independence of these motivational factors from common population variables was investigated, revealing the factors to be essentially free from such a device measure as autism and except for a significant correlation of verbal intelligence with Self-sentiment (.54), are largely independent of verbal intelligence as well.

Burdsal (1976) investigated the relationship of the MAT factors and personality traits as measured by Cattell's 16 Personality Factor Questionnaire. Factor analysis of matched questionnaires for 691 subjects revealed thirteen factors of which five were primarily personality while four were motivational, thus attesting to the relative independence of the two areas.

Reliability was established by short term retest (dependability) and homogeneity coefficients using four separate samples. Dependability coefficients for 156 air force enlisted men ranged from .53 to .81 for the ten

factors. Alpha coefficients based on 227 adults varied from .33 to .71. Arbitrary split-half reliabilities obtained for 151 college students ranged from .33 to .70 for the factors. Cattell et al. (1959) note that this split was arbitrary, both halves not conceived of as parallel, but presented as a measure of internal test construction.

The authors noted that one implication of a valid dynamic measure is that the stability of drive tension or traits will not necessarily be high. Changes of circumstantial stimuli and internal conditions should be reflected in the level of factors if the test is to be considered sensitive to fluctuations within the individual. Stability coefficients, revealing the amount of fluctuation in the traits per se, indicate not surprisingly that those factors involving a learning component (sentiments) are more stable (.39-.69) than ergs (.41-.53).

Although not widely used as a research tool, it was felt that the MAT offers unique information by reflecting the relative strengths of the 10 dynamic factors shown to be most representative of adult motivation. Despite the empirical derivation of the 10 scales and their real structural existence few studies have attempted to correlate trait scales with external criteria. However, an evaluation of the inventory described the test as holding promise for future research in motivation (Alker, 1975).

The Personal Attributes Questionnaire

The Personal Attributes Questionnaire (PAQ; Spence, Helmreich & Stapp, 1974, 1975; Spence & Helmreich, 1978) is a measure which assesses the psychological dimensions of masculinity and femininity. That is, it reflects the respondent's self-evaluation on a number of psychological attributes which research has revealed as differentially associated with the sexes. It is a self-report inventory consisting, in its short form (1978), of 24 trait descriptions each set up on a bipolar 5-point scale. Respondents are asked to indicate self-ratings by circling the appropriate point. The 24 randomly ordered bipolar items compose three eight-item scales; masculinity (M), femininity (F) and masculinity-femininity (M-F). Each item is scored from 0 to 4, a high score on items assigned to the M and M-F scales indicating an extreme masculine response and a high score on F scale items indicating an extreme feminine response. An individual's total score for each scale is derived by adding the scores on the eight respective items. The range of possible values for each scale is therefore 0 to 32.

The full initial version of the PAQ contained 55 bipolar items derived from a pool assembled by Rosenkrantz et al. (1968) in their study of student perceptions of sex-role stereotypes. Spence et al. (1974) replicated and extended their study, instructing different groups of college students to rate themselves, the typical adult male and female,

college students for each sex, or the ideal individual of each sex, for each of the initial 130 items. Those items that exhibited a consistent stereotype about sex differences were chosen for inclusion in the PAQ. Therefore, mean ratings for males and females (whether the ideal, typical student or adult, or self was rated) differed significantly for those items. As mean ratings for the ideal male and female both lay on the same side of the scale mid-point (although often closer to the extreme pole) as the ratings for the typical member of each sex, it could be inferred that these stereotypes were favourably regarded, socially desirable attributes (Spence & Helmreich, 1978). The ideal ratings were used to divide PAQ items into the three scales previously mentioned.

The masculinity scale (M) contains items defined as attributes socially desirable in both sexes but which are believed to occur to a greater degree in males. Therefore, items were chosen if mean ratings of the ideal man and ideal woman fell on the same side of the scale mid-point and towards the stereotypically masculine pole. Of the 23 items which met this criterion, eight were retained for the shortened version of the PAQ, chosen primarily on the basis of the magnitude of the part-whole correlation between the item and the scale. Item content refers largely to instrumental, agentic characteristics (e.g. independence).

The femininity scale (F) contains items defined as socially desirable for both sexes but believed to be more

common in females. Thus, ideal ratings for men and women were on the same side of the scale mid-point and towards the stereotypically feminine pole. Eighteen items met this criterion and were chosen in a like manner. Communal, expressive attributes (e.g. gentleness) comprise item content.

Items assigned to the masculinity-femininity¹ scale (M-F) differed in that the mean ratings for the ideal man and woman fell at opposite sides of the mid-point, suggesting that the desirability of the trait was dependent upon sex. Thirteen items demonstrating this effect made up the full version of the PAQ. The content of the eight items retained falls into two major groups; agentic, instrumental qualities (e.g. aggressiveness and dominance) and a cluster of characteristics suggesting emotional vulnerability and the need for emotional support (e.g. cries easily, strong need for security, feelings easily hurt).

Correlations of the shortened version of each PAQ scale with its initial longer form indicated r 's between .91 and .93. The Cronbach alphas for each scale in a sample given the short form were .85(M), .82 (F), and .78(M-F) (Spence & Helmreich, 1978).

Examination of intercorrelations among PAQ scales within

1 Earlier publications (Spence et al., 1974, 1975) called this scale "Sex-specific", the term "Masculinity-Femininity (M-F)" being more recently adopted to reflect the scales' bipolar nature (Spence & Helmreich, 1978).

varied ethnic groups (Lebanese, Brazilian, Israeli and American) consistently reveals a low but positive correlation between the M and F scales indicating the relative independence of masculinity and femininity and thereby supporting a dualistic model. A bipolar view would posit a strongly negative correlation. The M-F scale, however, was found (in all but the Brazilian sample) to have a moderately high positive correlation with M and a lower, but substantially negative correlation with F, lending some support to a bipolar model. Data for the female members of two American student samples totally 1,466 (Spence et al., 1975; Spence & Helmreich, 1978) indicate positive correlations between M and F, and M and M-F at the $p < .05$ level as well as a consistent negative correlation between M-F and F. Despite the conceptual disparity, the M-F scale was retained as it seemed to yield information not available

from M and F scales alone. The Marlowe-Crowne Social Desirability Scale was administered to determine response bias in endorsing PAQ attributes. Correlations with the PAQ scales ranged from .08 to .36, and while some correlations reached statistical significance, their magnitude was deemed unimpressive (Spence et al., 1975).

Subjects' stereotypic perceptions of male and female characteristics did not appear to unduly influence self-ratings. A stereotype score, derived from each subject's rating of the typical adult male and female, was

compared to the subject's self-perceptions for each of the same attributes. Results revealed low and mostly nonsignificant correlations indicating distortion was not operative (Spence, et al., 1975).

The influence of intelligence in the acquisition of desirable characteristics or in presenting oneself as such was investigated (Spence et al., 1975) by correlating matched Scholastic Aptitude Verbal and Quantitative Scales with PAQ scores for over 500 college students. Results were essentially orthogonal, ranging from .02 with M, to -.12 with F.

Spence and Helmreich (1978) have devised a method whereby subjects can be described jointly on all three PAQ scales. The scheme for such a classification is the median split method. Based upon a total sample or normative group, median scores on the M, M-F and F scales are determined. Two sets of normative values for the purpose of such classification were established. Based upon the rounded means of the median scores for a high school sample of 1,500 males and females (means of medians used because of unequal numbers of males and females) values were M=20, M-F=15, and F=23. The second group, 715 college students of both sexes, produced identical medians for the M-F and F scales, while the value for the M scale was one point higher, M=21. For use in this study, the latter general college norms were deemed more appropriate. The authors suggest that subtle

relationships may be more clearly revealed if median values established for the population under investigation are employed. However, recomputation of such medians would require a sample composed of both sexes.

Using the M and F scores subjects can be classified by means of a 2 by 2 table into one of four groups depending on their position above or below the median on the two scales. These four groups have been designated androgynous (high on M and F), masculine (the "conventional" male, high on M, low on F, or the cross-sex female), feminine (the "conventional" female, high on F, low on M, or the cross-sex male) and undifferentiated (low on both M and F). Within each category a further division can be made based upon an individual's position above or below the median on the M-F scale.

Not surprisingly, classification by median split reveals the greatest percentage of subjects are conventionally typed (masculine males, feminine females) and the lowest percentage as cross-typed (feminine males, masculine females). When subdivided in relation to the overall median of M-F, females tend to fall below the median while males, except when cross-typed, are generally above.

PAQ scores for two samples were correlated with social competence and self-esteem as measured by the Texas Social Behavior Inventory. Greater self-esteem and social competence were found to be significantly correlated with higher levels of masculinity and femininity for both sexes

(Spence et al., 1975; Spence & Helmreich, 1978). This finding contradicts the common assumption that only sex-appropriate behaviors and attributes are associated with psychological well-being. When subjects were divided into four categorical groups as determined by the median scores on the PAQ M and F scales, levels of self-esteem were highest for androgynous individuals, followed by masculine, feminine, with undifferentiated subjects having the lowest scores. Further subdivision including M-F scores indicated high M-F students scored higher on self-esteem within each of the four categories (Spence & Helmreich, 1978).

The nature of the M-F scale was clarified in a study relating PAQ scores to empathy, operationally defined according to Mehrabian and Epstein's empathy scale as heightened responsiveness to another's emotional experience. A slightly modified version of this scale was administered to 215 male and female students. The PAQ F scale was found to be positively correlated with empathy ($p < .01$) while both the M ($p < .05$) and M-F ($p < .01$) scales revealed negative correlations. Item analysis indicated those PAQ characteristics which related most strongly with the empathy scale conveyed a sense of emotionality and emotional vulnerability and were most often embedded in the M-F scale (e.g. excitable in a major crisis, feelings easily hurt, needs approval) (Foushee, Davis & Archer cited in Spence &

Helmreich, 1978). Therefore high scores on the M-F scale seem to indicate a lack of emotionality and personal vulnerability as well as an endorsement of aggressive, dominant traits.

PAQ data from unique populations provide substantial evidence that the self-reports of masculinity and femininity have important implications for real-life behaviors. The distribution of PAQ categories for various samples reveal distinct differences when compared to student populations. As such, female varsity athletes were classified most often in masculine and androgynous categories and were underrepresented in the feminine grouping (Spence & Helmreich, 1978). Similar distributions were found for both male and female academic scientists and engineers holding PhD degrees (Beane cited in Spence & Helmreich, 1978). Male homosexuals, when compared with samples of unselected college males, scored significantly lower on PAQ M and M-F scales and higher on the F scale. As well, homosexuals classified in the feminine and undifferentiated groups reported greater participation in psychotherapy (Ward cited in Spence & Helmreich, 1978). However, it must be noted that the origins of these personality characteristics, whether they are prior, or developed as a result of actual participation in various fields or activities, is an area open to speculation.

Parental Attributes Questionnaire

The Parental Attributes Questionnaire is identical to the Personal Attributes Questionnaire in content, differing only with respect to instructions. Subjects are requested to use their own perceptions in rating each parent on all 24 attributes. "Parent" was loosely defined to include any adult or guardian responsible for the upbringing of the individual. Subjects raised in single parent homes without the regular presence of an adult of the complementary sex who was also responsible for their upbringing, were asked to omit the non-relevant section.

Responses on this questionnaire reveal information about subjects' perceptions of their mothers' and fathers' masculine and feminine attributes. Spence and Helmreich (1978) found parent-child resemblance on PAQ scales to be minimal, although significant (but low in magnitude) correlations existed between M and F scores and perceptions of the same sex parent on the same scales. When parents were asked to rate themselves on the PAQ scales, comparisons of their self-ratings with student self-ratings revealed even lower correlations. However, correlations were highly significant ($r=.20-.51$) between parents' self-ratings and student ratings of parents. This was particularly marked in female students and for relationships involving the M and M-F scales. Hence, there is some veridicality between students' perceptions of their parents and their parents' self-image.

All three types of ratings (student ratings of self and

parents, parent self-ratings) produced highly comparable means as well demonstrating similar correlations between the PAQ scales. In all cases, M-F was positively related with M and correlated in a negative direction with F, while M and F showed a very low relationship. The finding that the same relationship among PAQ scales holds for different generations, as well as for types of ratings, demonstrates the continuing validity of the dualistic conception of psychological masculinity and femininity.

The Parental Attitude Questionnaire

The Parental Attitude Questionnaire (Spence & Helmreich, 1978) was devised to obtain a description of parental child-rearing attitudes, behaviors and family atmosphere as experienced by the child, i.e. student. Prior investigations of parent-child relations utilizing objective questionnaires suggested that parental behaviors (e.g. praise, consistency, affection, etc.) have an important impact on family harmony and the development of different personality variables. Examination of existing questionnaires yielded 100 items, Spence and Helmreich then retaining those 58 which at face value showed most promise of being related to students' masculinity, femininity and self-esteem.

Those 58 items were administered to 1,500 high school students of both sexes. Alpha factor analyses with the equimax rotation technique done separately for each sex revealed nine factors for each sex, seven highly comparable

and two less so. Items for which loadings were .30 or higher were used to develop seven scales to reflect each of factors. Scale labels, reflecting the high end of the scale, are Father Positivity, Mother Positivity, Father Democracy, Mother Democracy, Rule Enforcement, Family Protectiveness, and Sex-Role Enforcement. These seven, as well as the two remaining scales specific to females (Female Family Harmony and Mother Supportiveness, Female Standards) were used for the purposes of this study. An additional scale used, based upon four items, was designed to determine which parent the respondent most resembles in ideals and personality as well as to whom the subject feels closer. Mother Identification was arbitrarily labeled as the high end of the scale for use in this investigation.

The final form of the questionnaire contains in its first section eight items relating to both parents and family life. These are followed by 25 statements about the mother and a parallel set about the father. Parent (mother or father) was loosely defined in this questionnaire as well to include any consistently present adult guardian. Each item is followed by a 5-point scale ranging from "very uncharacteristic" to "very characteristic", respondents having to simply circle the appropriate point. The last section is used for deriving the measure of Parental Identification. As such, subjects raised in single parent homes were instructed to omit this section.

Description of the Scales

1. Father Positivity: father encouraging and supportive, consistent, physically affectionate, praises, uses reason
2. Mother Positivity: mother nonpunitive and noncritical, encourages discussion, interested, consistent, few arguments
3. Father Democracy: father uses reason, not strict, encourages discussion, allows questioning, noncritical
4. Mother Democracy: mother encouraging, uses reason, does not insist on her own way, mother and father encourage questioning of rules
5. Rule Enforcement: many family rules, mother strict, mother and father care about rule enforcement
6. Family Protectiveness: mother and father cautious about child for fear of hurt, knew what child was up to
7. Sex-Role Enforcement: father and mother unsympathetic to "women's lib", minded child playing with opposite-sex toys
8. Female Family Harmony and Mother Supportiveness: family close, parents will be pleased by child having a career, encourage child to stick up for rights; mother affectionate, praising, interested, encouraging, uses reason; respondent will bring up children same way
9. Female Standards: child has daily schedule, mother strict and critical, mother and father set high standards
10. Mother Identification: (additional scale) personality and ideals similar to mother, felt closer to mother, confided in mother (Spence & Helmreich, 1978, p.42).

A further study of this high school sample revealed parallel results from a second-order factor analysis based

upon the scale scores derived from the original factor analyses and computed by the principal axis technique with varimax rotation. Three similar factors found for both sexes were labeled Mother and Family Acceptance, Father Acceptance, and Strictness of Family Rules and Standards. For females, scales loading highest on the Mother-Family Acceptance factor were Mother Positivity (.81), Mother Democracy (.83) and Female Family Harmony (.95). Scales for females contributing most to the Father Acceptance factor were Father Positivity (.85) and Father Democracy (.80). Those scales loading highest on Strictness of Family Rules and Standards were Rule Enforcement (.49), Family Protectiveness (.38) and Female Family Standards (.68).

Intercorrelations of PAQ scales and the Parental Attitude Questionnaire yielded low but usually significant positive relationships between the M scale and the second-order factors previously mentioned. Similar correlations, although magnitudes were even lower, were obtained with students' F scores.

The relationship of parental attitude scales and students' identification with their mother or father was examined by comparing mean z scores on each scale for subjects choosing different alternatives in response to the question about similarity to father's or mother's ideals. Females who chose the father alternative had the highest means on the Father Democracy and Positivity scales, while

those who identified with mother rated their fathers as lowest. For the mother scales the reverse pattern was found; those selecting the mother alternative scoring higher on Mother Democracy and Positivity, whereas those selecting the father alternative had the lowest means.

The relationship of parent attitude scales to females as grouped by the PAQ median split method revealed nonsignificant differences for the Protectiveness scale and borderline differences on Sex-Role Enforcement (Feminine girls having the highest means). For the remaining parent scales, androgynous females tended to have the highest means, followed by the feminine, masculine and undifferentiated groups. Of note was that the masculine group was strikingly high on the Female Standards scale.

Procedure

Student volunteers participated in two testing sessions approximately three weeks apart. To accommodate subjects' schedules, testing group sizes varied from 12 to 55 participants. Testing took place in university classrooms and tests were administered according to standard procedures. After the first session students were notified by telephone of the scheduling of the second meeting and were advised of personal codes to be substituted for names on the next group of tests. They were also told that names on previous tests were deleted in favour of the codes. The MMPI was

administered at the first session, while the second included all the PAQ scales and the MAT. Upon completion materials were collected and the subjects were thanked for their participation.

Data Analysis

Data for 185 subjects were coded onto scanning sheets and a series of computer analyses of the data was carried out. Table 1 shows a complete list of all variables. An initial analysis focused upon assessing the interrelationships among the data and identifying the significant clusters, particularly as related to the Mf scale. Consequent analyses assessed interrelationships and differences on selected scales, identified by the initial statistical procedure and specific hypotheses, between three sample subgroups formed on the basis of MMPI Mf scores; low, mid, and high Mf groups.

The general and specific hypotheses were tested using four major statistical analyses: a) a principle-component factor analysis using all 57 scales for the total sample; b) a oneway analysis of variance between the three Mf groups comparing group mean scores for each of 57 scales; c) a Pearson product-moment correlation within each Mf group for scales identified by the preceding analyses as well as those designated by specific hypotheses; and d) a series of chi-square analyses contrasting each Mf group to the total

sample with respect to the frequency of subjects within each group falling into each of the PAQ sex-type categories.

These analyses were performed in four major steps:

a. Factor Analysis

Principal-component factor analysis (BMDP4M - Factor Analysis, University of California, 1977) was utilized to assess the interrelationships in the data and to identify the more significant clusters of variables. Scores for subjects on each of 57 scales were entered in the analysis. The principal-component analysis with iteration, orthogonal varimax rotation and Kaiser's normalization produced a matrix of Sorted Rotated Factor Loadings. Each factor group was renamed on the basis of its contents.

Formation of Three Mf Subgroups

Using the sample mean and standard deviation of the Mf scale three groups of subjects were formed. Subjects were assigned to the Low Mf and High Mf groups by virtue of obtaining Mf raw scores greater than one standard deviation (rounded to the nearest whole number) below or above respectively, the sample Mf mean.

b. Oneway Analysis of Variance Between Mf Groups

A series of analyses of variance (SPSS Version H) was performed to contrast the three Mf groups on each scale and

thus identify the dependent variables for which mean group scores differed. Scheffé's a posteriori test was used to reveal the source and degree of difference among the three groups.

c. Pearson Correlation for Each Mf Group

Three Pearson product-moment correlations (SPSS Version H) were performed to determine the interrelationships among selected scales within each of the three Mf groups. Entered into the correlation were 30 scales; those identified by the previous analyses or designated by specific hypotheses. In particular this would reveal any differential relationships between Mf and the other scales within each Mf group. One-tailed test was applied to each coefficient to derive significance levels.

d. Chi-Square Analyses Comparing Each Mf Group to the Total Sample with Respect to the PAQ Sex-Type Proportions

Subjects were classified into one of four sex-type categories (androgynous, undifferentiated, masculine, feminine) depending on their joint scores on the PAQ M(self) and F(self) scales relative to the normative medians proposed by Spence and Helmreich (1978). The frequency of subjects classified into each category was computed for the total sample as well as for subjects when subdivided into each Mf group. The relative frequency of subjects falling within each PAQ category for each Mf group was compared to the

proportions found in the total sample using a chi-square procedure.

The following chapter presents the results of these analyses.

Table 1
IDENTIFICATION OF VARIABLES

Scale	Description
L	MMPI Scale L (lie).
F	MMPI Scale F
K	MMPI Scale K
Hs	MMPI Scale Hs (hypochondriasis)
D	MMPI Scale D (depression)
Hy	MMPI Scale Hy (hysteria)
Pd	MMPI Scale Pd (psychopathic deviate)
Mf	MMPI Scale Mf (masculinity-femininity)
Pa	MMPI Scale Pa (paranoia)
Pt	MMPI Scale Pt (psychasthenia)
Sc	MMPI Scale Sc (schizophrenia)
Ma	MMPI Scale Ma (hypomania)
Si	MMPI Scale Si (social introversion)

Personal Attributes Questionnaire (PAQ)

Mself	PAQ self-ratings on masculinity (M)
M-Fself	PAQ self-ratings on masculinity-femininity (M-F)
Fself	PAQ self-ratings on femininity (F)
Mmother	PAQ ratings of mother on masculinity (M)
M-Fmother	PAQ ratings of mother on masculinity-femininity (M-F)
Fmother	PAQ ratings of mother on femininity (F)
Mfather	PAQ ratings of father on masculinity (M)
M-Ffather	PAQ ratings of father on masculinity-femininity (M-F)
Ffather	PAQ ratings of father on femininity (F)

Parental Attitudes Questionnaire

Harmony	Female Family Harmony and Mother Supportiveness
Rules	Rule Enforcement
Prot	Family Protectiveness
Faposit	Father Positivity
Stand	Female Standards
Momposit	Mother Positivity
Fademoc	Father Democracy
Srole	Sex-Role Enforcement
Momdemoc	Mother Democracy
Momid	Mother Identification

Motivation Analysis Test

Ca	MAT Career sentiment - unintegrated
Ho	MAT Home-parental sentiment - unintegrated
Fr	MAT Fear erg - unintegrated
Na	MAT Narcism- confort erg - unintegrated
Se	MAT Superego sentiment - unintegrated
Ss	MAT Self-concept sentiment - unintegrated
Mate	MAT Mating erg - unintegrated
Pg	MAT Pugnacity-sadism erg - unintegrated
As	MAT Assertiveness erg - unintegrated
Sw	MAT Sweetheart-spouse sentiment - unintegrated
Cal	MAT Career sentiment - integrated
Hol	MAT Home-parental sentiment - integrated
Frl	MAT Fear erg - integrated
Nal	MAT Narcism-comfort erg - integrated
Sel	MAT Superego sentiment - integrated
Ssl	MAT Self-concept sentiment - integrated
Matel	MAT Mating erg - integrated
Pgl	MAT Pugnacity-sadism erg - integrated
Asl	MAT Assertiveness erg - integrated
Swl	MAT Sweetheart-spouse sentiment - integrated
Aut	MAT General Autism
Infor	MAT Information-intelligence
Totint	MAT Total Integration
Persint	MAT Total Personal Interest
Conflict	MAT Total Conflict

CHAPTER III

RESULTS

This chapter presents the results of the data analyses described in the previous section.

Factor Analysis

The principal-component factor analysis using an eigenvalue of 1.000, 15 iterations and varimax orthogonal rotation generated 18 factors accounting for 75% of the total variance. The matrix of 18 Sorted Rotated Factor Loadings greater than .25 is presented in Table 2. Those scales grouped under each factor and having a communality value of positive or negative .30-or higher were selected as representative of that factor. The scales thereby subsumed within each factor were examined and the following labels applied. Those factors appearing more complex or of particular relevance to the Mf scale are discussed in greater detail.

Factor 1 - Admission of Emotional Instability and Agitation (Sc, Pt, F, Ma, Hs, Pd, D, Hy). This factor is composed of all the MMPI clinical scales with highest positive loadings on Sc, Pt, F, Ma and Hs and a strong negative loading on K.

Table 2

Sorted Rotated Factor Loadings (Pattern)

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Sc	0.880	0.0	0.0	0.0	0.0	0.0	0.0
Pt	0.812	0.0	0.0	0.0	0.411	0.0	0.0
F	0.743	0.0	0.0	0.0	0.0	0.0	0.0
Ma	0.740	0.0	0.0	0.0	-0.468	0.0	0.0
Hs	0.728	0.0	0.0	0.0	0.288	0.0	0.0
K	-0.715	0.0	0.0	0.0	0.0	0.0	0.0
Pd	0.571	0.0	0.0	-0.253	0.0	0.0	0.0
Momdemoc	0.0	0.882	0.0	0.0	0.0	0.0	0.0
Harmony	0.0	0.875	0.0	0.0	0.0	0.0	0.0
Momposit	-0.284	0.819	0.0	0.0	0.0	0.0	-0.261
Fmother	0.0	0.808	0.0	0.0	0.0	0.0	0.0
Totint	0.0	0.0	0.918	0.0	0.0	0.0	0.0
Conflict	0.0	0.0	-0.910	0.0	0.0	0.0	0.0
Info	0.0	0.0	0.727	0.0	0.0	0.527	0.0
Aut	0.0	0.0	-0.588	0.0	0.0	0.537	0.0
Faposit	0.0	0.331	0.0	0.838	0.0	0.0	0.0
Ffather	0.0	0.0	0.0	0.836	0.0	0.0	0.0
Fademoc	0.0	0.0	0.0	0.806	0.0	0.0	0.0
Momid	0.0	0.360	0.0	-0.758	0.0	0.0	0.0
Si	0.0	0.0	0.0	0.0	0.828	0.0	0.0
D	0.343	0.0	0.0	0.0	0.747	0.0	0.0
Nself	0.0	0.0	0.0	0.0	-0.696	0.0	0.0
Persint	0.0	0.0	0.0	0.0	0.0	0.872	0.0
Rules	0.0	0.0	0.0	0.0	0.0	0.0	0.789

Note. The factor loading matrix has been rearranged so that the columns appear in decreasing order of variance explained by factors. The rows have been rearranged so that for each successive factor, loadings greater than 0.5000 appear first. Loadings less than 0.2500 have been replaced by zero.

Table 2

Sorted Rotated Factor Loadings (Pattern)

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Stand	0.0	-0.268	0.0	0.0	0.0	0.0	0.726
Protect	0.0	0.0	0.0	0.0	0.0	0.0	0.615
M-Fmother	0.0	0.0	0.0	0.0	0.0	0.0	0.0
M-mother	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sel	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sw1	0.0	0.0	0.0	0.0	0.0	0.378	0.0
Nal	0.0	0.0	0.390	0.0	0.0	0.291	0.0
Pgl	0.0	0.0	0.0	0.0	0.0	0.276	0.0
Ssl	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Se	0.0	0.0	0.0	0.0	0.0	0.0	0.0
M-Ffather	0.0	0.0	0.0	0.0	0.0	0.0	0.0
M-father	0.0	0.0	0.0	0.393	0.309	0.0	0.0
MF	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fself *	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ss	0.0	0.0	0.0	0.0	0.0	0.254	0.0
Mate	0.0	0.0	0.0	0.0	0.0	0.0	0.0
As	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.347	0.0	0.0	0.0	0.0	0.0	0.0
Hy	-0.283	0.0	0.0	0.0	0.0	0.0	0.0
L	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Frl	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ca	0.0	0.0	0.0	-0.250	0.0	0.345	0.0
Pg	0.0	0.428	0.0	0.0	0.0	0.0	0.0
Ho	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Matel	0.279	0.0	0.0	0.0	0.0	0.0	0.0
Hol	0.0	0.0	0.397	0.0	0.0	0.0	0.0
Asl	0.0	0.0	0.0	-0.279	0.0	0.0	0.0
Srole	0.0	0.0	0.0	0.0	-0.434	0.0	0.0
M-Fself	0.0	0.0	0.274	0.0	0.0	0.0	0.0
Cal	0.0	0.0	-0.342	0.0	0.0	0.280	0.0
Fr	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pa	0.486	0.0	0.0	0.0	0.0	0.0	0.0
Na	0.0	0.0	0.0	0.0	0.0	0.476	0.0

2.135

2.477

2.971

3.293

3.688

3.990

5.186

vp a

a The vp is the variance explained by that factor

Table 2

Sorted Rotated Factor Loadings (Pattern)

	Factor 8	Factor 9	Factor 10	Factor 11	Factor 12	Factor 13	Factor 14	Factor 15	Factor 16	Factor 17	Factor 18
Sc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ma	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ms	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
K	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pd	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.253	0.0	0.0
Momdemoc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Harmony	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Momposit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fmother	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Totint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Conflict	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Info	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aut	0.0	0.0	0.0	0.0	0.0	0.0	0.280	0.0	0.0	0.0	0.0
Faposit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ffather	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fademoc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Momid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Si	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mself	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Persint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rules	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stand	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Protect	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
N-Fmother	0.888	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mmother	0.845	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note. The factor loading matrix has been rearranged so that the columns appear in decreasing order of variance explained by factors. The rows have been rearranged so that for each successive factor, loadings greater than 0.5000 appear first. Loadings less than 0.2500 have been replaced by zero.

Table 2

Sorted Rotated Factor Loadings (Pattern)

	Factor 8	Factor 9	Factor 10	Factor 11	Factor 12	Factor 13	Factor 14	Factor 15	Factor 16	Factor 17	Factor 18
Sel	0.0	0.691	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sw1	0.0	0.599	0.0	0.0	0.0	0.358	0.0	0.0	0.0	0.0	0.0
Nal	0.0	-0.544	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pgl	0.0	0.0	-0.748	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ssl	0.0	-0.256	0.731	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Se	0.0	0.0	0.0	0.765	0.0	0.0	0.0	0.0	0.0	0.0	0.0
M-Ffather	0.0	0.0	0.0	0.0	0.846	0.0	0.0	0.0	0.0	0.0	0.0
Mfather	0.0	0.0	0.0	0.0	0.688	0.0	0.0	0.0	0.0	0.0	0.0
Mf	0.0	0.0	0.0	0.0	0.0	0.607	0.0	0.0	0.0	0.0	0.0
Fself	0.0	0.0	0.0	0.0	-0.285	0.515	0.276	0.0	0.0	0.0	0.0
Ss	0.0	0.0	0.0	0.0	0.0	0.0	0.814	0.0	0.0	0.0	0.0
Mate	0.0	0.0	0.0	0.0	0.0	0.0	-0.522	0.344	0.0	0.0	0.0
As	0.0	0.0	0.0	-0.403	0.0	0.330	-0.514	0.0	0.0	0.0	0.0
Sw	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.756	0.0	0.0	0.0
Hy	0.0	0.0	0.285	0.0	0.0	0.0	0.0	0.0	0.697	0.0	0.0
L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.696	0.0	0.0
Frl	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.861	0.0
Ca	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.847
Pg	0.0	0.0	0.0	-0.377	0.0	0.0	0.0	0.0	0.0	0.0	-0.315
Ho	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.353	0.0	-0.292	0.0
Katel	-0.251	-0.351	0.371	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hol	0.0	0.277	0.0	0.485	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Asl	0.0	-0.475	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.343	0.0
Srole	-0.392	0.0	0.0	0.330	0.0	0.0	0.0	0.0	0.0	-0.273	0.0
M-Fself	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cal	0.0	0.0	0.0	-0.308	0.0	-0.479	0.0	-0.276	0.0	0.0	0.0
Fr	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.345	0.432
Pa	0.0	0.0	0.0	0.391	0.0	0.0	0.0	-0.492	0.0	0.0	0.0
Na	0.0	0.0	0.0	0.0	-0.346	-0.453	0.0	0.282	0.0	0.0	0.0
								0.0	0.0	0.0	-0.266
Vp ^a	2.098	2.000	1.894	1.864	1.836	1.757	1.653	1.648	1.611	1.411	1.396

^a The VP is the variance explained by that factor

Factor 2 - Mother and Family Acceptance (Momdemoc, Harmony, Momposit, Fmother, Hol, Momid, Faposit, Stand).

This factor is virtually identical to one so-named by Spence and Helmreich (1978) in their factor analysis of the Parental Attitude Questionnaire in a high school sample. Differences in the present factor are the inclusion of perceived communal and expressive qualities in the mother (Fmother), attachment to parental home (Hol), and acknowledged similarity and closeness to mother (Momid).

Factor 3 - Ego Expansiveness and Investment with Some Emphasis on Self-Gratification (Totint, Info, Asl, Nal, Conflict, Aut, Fr, Cal). This factor appears to reflect a successful integration of motivational dynamic life.

Factor 4 - Father Acceptance (Faposit, Ffather, Fademoc, Mfather, Momid). This factor was also named for one similarly revealed by the analysis of Spence and Helmreich previously mentioned. Again, communal, expressive attributes load highly, but this time it is the perception of these qualities in the father (Ffather). The perceived agentic qualities of the father (Mfather) are present to a lesser extent. Negatively loaded on this factor is attachment to mother (Momid).

Factor 5 - Depression, Anxiety and Personal Insecurity

(Si, D, Pt, Mf, Ma, Mself, M-Fself). This factor is of considerable importance due to the inclusion of the Mf scale with measures such as D, Pt and Si; indicating social introversion, self-dissatisfaction, self-criticism, and lack of self-confidence. The negative loading of the PAQ self-rating on the M scale (Mself) and the MMPI Ma scale further indicate a passivity, a lower activity level and lower self-confidence, while the negative loading of the PAQ M-F self-rating again reveals sensitivity, emotional vulnerability, and the need for emotional support.

Factor 6 - Capacity for Object Libido Investment; Interest in Meeting One's Needs (Persint, Info, Na, Nal, Aut, Pg, Pgl, Ssl, Ma, Fr). This factor contains most of the MAT erg scales.

Factor 7 - Strictness of Family Rules and Standards (Rules, Stand, Protect, Momposit). This factor again replicates one so-named by Spence and Helmreich in the analysis already mentioned.

Factor 8 - Mothers' Deviation from Stereotypic Feminine Attributes and Denial of Emotional Vulnerability (M-Fmother, Mmother, Srole). This factor is composed of ratings of mother on the PAQ M and M-F scales contrasted with a negative loading on parental enforcement of child's adherence to

stereotypic sex-role behavior.

Factor 9 - Positive Socialization Learning (Sel, Swl, Nal, Matel, Asl). This factor is comprised of sentiments influenced by socio-parental conventions and negatively loading on sentiments and ergs implicated in self-serving motivations.

Factor 10 - Concern with Maintenance of Self-Repute and Acceptable Self-Concept (Ssl, Matel, Pgl).

Factor 11 - Acceptance and Adherence to Traditional Socio-parental Expectations (Ss, Hol, Srole, Pa, Cal, Pg, As).

Factor 12 - Father's Adherence to Stereotypic Masculine Attributes and Emotional Toughness (M-Ffather, Mfather, Nal). Highly similar to Factor 8.

Factor 13 - Emotional Vulnerability, Sensitivity, Concern for and Attachment to Others; Insecurity Manifested as a Need for Admiration (Mf, Fself, Swl, As, M-Fself). Scales loading were self-ratings on communal, expressive attributes, admission of emotional vulnerability, attachment to others, as well as the MMPI Mf scale.

Factor 14 - Concern with Social-Repute, Self-Control and More Remote Rewards (Ss, Mate, As).

Factor 15 - Strength of Heterosexual Attachment and Satisfaction and Lesser Attachment to Parents (Sw, Mate, Fr, Ho).

Factor 16 - Primary Defences Factor (Hy, L). Encompasses denial, repression and suppression.

Factor 17 - Sense of Personal Vulnerability and Motivation Towards Security (Frl, Hol, Asl, Cal).

Factor 18 - Career Motivation (Ca, Cal, Pg).

Formation of Three Mf Groups

Univariate statistics on the Mf scale for the total sample and the three Mf subgroups are presented in Table 3. All further analyses were undertaken using these three groups.

Oneway Analysis of Variance

Table 4 represents those results for a series of oneway analysis of variance which reached the significance level of $p < .05$. For five scales, analyses showed significant differences between the Low Mf and High Mf groups; group Low

Table 3

MMPI MF SCALE UNIVARIATE STATISTICS FOR TOTAL SAMPLE
AND SUBDIVISION INTO THREE MF GROUPS

Mf Scale	Total Sample (N=185)	GROUP		
		Low Mf (N=33)	Mid Mf (N=118)	High Mf (N=34)
<u>M</u>	38.16	44.12	38.39	31.59
<u>SD</u>	4.33	2.06	1.99	2.48
Mode	39	42	39	34
Range	24-51	42-51	35-41	24-34

Mf scored higher on an index of intelligence (Info); reported higher levels of self-dissatisfaction, tension and depression (D); self-reported more communal, expressive qualities (Fself); less agentic, instrumental attributes (Mself), and more concern with self-repute, self-concept and more remote rewards (Ssl). Additionally, the Low Mf group revealed significantly higher levels on conscious drive to sensual self-indulgence (Nal) in comparison to group Mid Mf. In one case the Low Mf and Mid Mf groups were both significantly difference from group High Mf; the latter group reporting higher levels of dominance, aggressiveness and emotional toughness (M-Fself).

Pearson Correlation for Each Mf Group

Table 5 (Appendix D) presents the complete results of the Pearson product-moment correlation for 30 variables for each of the three Mf groups. To avoid repetition, only those results directly pertinent to the stated hypotheses or which elucidate the nature of particular variables will be discussed.

Low Mf group. The MMPI Mf scale showed negative relationships with perception of mother's communal and expressive attributes (Fmother; $-.42, p < .007$), with ratings of mother's nonpunitiveness, noncriticalness, encouragement, interest, and consistency as a parent (Momposit; $-.48,$

$p < .002$), and to a lesser degree with ratings of family closeness, encouragement and support; mother's interest, praise, and affection, and the intention to bring up one's own children in the same way (Harmony; $-.35$, $p < .03$). Positive relationships with Mf, although modest in magnitude, were concern with self-concept and self-repute (Ssl; $.36$, $p < .02$) and sense of duty (Sel; $.33$, $p < .03$). Self-ratings on agentic, instrumental attributes (Mself) showed relatively high negative correlations with self-ratings on self-depreciation and depression (D; $-.63$, $p < .000$), anxiety (Pt; $-.54$, $p < .001$) and social introversion and lack of self-confidence (Si; $-.57$, $p < .000$).

Mid Mf group. In this group the Mf scale was related to self-report of anxiety and psychological turmoil (Pt; $.32$, $p < .000$). Self-report of agentic, instrumental qualities (Mself) showed results not unlike those of group Low Mf; revealing negative correlations with social introversion and lack of self-confidence (Si; $-.54$, $p < .000$) and showing a positive relationship to aggressiveness, dominance and emotional toughness (M-Fself; $.56$, $p < .000$).

High Mf group. There were no significant correlations for the Mf scale in this group. Self-report of agentic, instrumental qualities (Mself) showed similar relationships to those revealed in the other Mf groups; being negatively

Table 4

VARIABLES SIGNIFICANTLY DIFFERENTIATING AMONG MF GROUPS

Scale	Low MF Group (N=33)		Mid MF Group (N=118)		High MF Group (N=34)		Mean Squares B/W	F. RATIO	F. PROB.
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>			
D	23.12	4.50	21.45	5.17	19.26	4.59	126.27/24.53	5.147	.01*
Mself	18.67	4.05	19.94	4.43	21.79	4.78	84.00/19.67	4.271	.05*
Info	7.36	1.58	6.74	1.40	6.35	1.20	8.83/1.97	4.485	.05*
Ssl	6.06	1.58	5.68	1.33	5.00	1.41	9.94/1.93	5.143	.01*
Fself	25.39	3.67	24.45	3.40	22.53	4.24	74.23/13.05	5.687	.01*
Nal	8.15	1.56	7.20	1.91	7.06	1.91	13.31/3.45	3.861	.05**
M-Fself	11.09	3.58	12.73	3.96	15.32	4.48	155.56/15.99	9.731	.0001***

Note. Oneway Analysis of Variance, Scheffé's a posteriori test, df 2, 182

* Low MF and High MF groups significantly different

** Low MF and Mid MF groups significantly different

*** High MF Group significantly different from Low MF and Mid MF Groups

related to reported anxiety (Pt; $-.49$, $p < .002$) social introversion and lack of self-confidence (Si; $-.56$, $p < .000$) and being positively correlated with dominance, aggressiveness and emotional invulnerability (M-Fself; $.68$, $p < .000$). Additionally, this latter scale (M-Fself) revealed negative correlations with anxiety (Pt; $-.67$, $p < .000$) and attachment to and investment in a heterosexual relationship (Sw; $-.44$, $p < .004$).

Chi-Square Analyses of Mf Groups with Total Sample, on PAQ Categories

Table 6 presents the absolute frequencies and percentages of subjects classified in each PAQ sex-type category for each Mf group and for the total sample. Classification of subjects into each PAQ sex-type category was based on the median split method and norms proposed by Spence and Helmreich (1978). Median scores for self-ratings on Mself and Fself are 21 and 23 respectively. The androgynous classification included subjects who scored above the medians for both scales (Mself > 21 , Fself > 23); the undifferentiated group comprised those who scored below both medians (Mself < 21 , Fself < 23); masculine-typed subjects scored above the median on M but below on F (Mself > 21 , Fself < 23); those classified as feminine scored below the median on M and above the median on F (Mself < 21 , Fself > 23). Results of a series of chi-square analyses as shown in Table 7, indicate no differences between the sample

Table 6

ABSOLUTE AND RELATIVE FREQUENCIES (%) OF PAQ SEX-TYPE
CLASSIFICATION FOR TOTAL SAMPLE AND THREE Mf GROUPS

	Total Sample (N=185)		Groups					
			Low Mf (N=33)		Mid Mf (N=118)		High Mf (N=34)	
	ABS. F.	REL.F. %	ABS. F.	REL.F. %	ABS. F.	REL.F. %	ABS. F.	REL.F. %
ANDRO	33	17.84	6	18.20	22	18.60	5	14.70
UNDIFF	50	27.03	7	21.20	31	26.30	12	35.30
MASC	33	17.84	4	12.10	20	16.90	9	26.50
FEM	69	37.30	16	48.50	45	38.10	8	23.50

Table 7

Chi² COMPARISONS OF SAMPLE
WITH EACH Mf GROUP

Group	X ² a	Level of Significance
Low Mf	2.13	.50
Mid Mf	.142	.20
High Mf	4.18	.98

^adf = 3 for each group

proportions and the frequency of subjects similarly
classified in each of the Mf groups.

CHAPTER IV

DISCUSSION AND SUMMARY

The intention of this chapter is to summarize and interpret the results of the present study of the MMPI Mf scale. This will include a summary of the purpose of the research and a review of the experimental hypotheses and results of the data analysis.

This study was undertaken to investigate the validity of the numerous clinical correlates attributed to females who obtain low T-scores on the Mf scale of the MMPI. There has been little previous research which attempted to determine the behavioral and psychological correlates of the Mf scale through empirical investigation. Yet, there exists a well-established body of literature which clearly specifies psychological and behavioral correlates of low Mf T-scores in females. The focus of this study, therefore, was to determine the extent to which the well-ensconced clinical correlates would be revealed in a selected group of female university students who obtained low Mf T-scores. In view of the widespread use of the MMPI as a measure of personality dynamics and the tacit acceptance of Mf scale clinical correlates despite any empirical substantiation, it was felt that this research would serve as an initial step in bridging the gap between clinically observed scale correlates and the empirical verification of such descriptors.

Directional hypotheses consistent with the flavour of the clinical correlates were proposed. Specifically, it was expected that low Mf females would be different from females obtaining average or high Mf T-scores with respect to a number of variables: 1) higher D (depression) and Pt (psychasthenia) scores; 2) lower PAQ self-ratings on Mself (masculinity) and M-Fself (masculinity-femininity) and not different with respect to Fself (femininity); 3) higher scores on the MAT Mating and Narcism ergs and Sweetheart-spouse sentiment; 4) less positive perceptions of family atmosphere and parental child-rearing behaviors, and 5) more frequently sex-typed as feminine and undifferentiated and least often as masculine and androgynous in comparison to expected sample proportions.

Results obtained in this study provide evidence that the Mf scale is related to endorsement of stereotypic femininity. That is, Factor 13 showed the Mf scale clustered with self-ratings on communal, expressive attributes, admission of emotional vulnerability and security needs, as well as a need for attachment to others. The additional loading on the need to be noticed and admired may be interpreted as a compensation for insecurity and self-doubts. This interpretation is reinforced by the inclusion of the Mf scale on Factor 5 with measures reflecting social introversion, self-dissatisfaction, lack of self-confidence, passivity and again, emotional vulnerability and the need for emotional

support.¹

Division of the subjects into three Mf groups; Low, Mid and High revealed that endorsement of the above-mentioned characteristics, as well as others not predicted, occurred most often for females with low Mf T-scores. Mean scores on variables differentiating groups typically ranged from low to medium to high (in either direction) corresponding to Low, Mid, and High Mf groups respectively. In all but one case significant differences were between the Low and High Mf groups only. This is consistent with the bipolar nature of other MMPI scale descriptors; modal characteristics typically suggested for the relative poles on most scales (see Instruments of the Study; MMPI, for examples of such descriptions).

As such, in contrast with the High Mf group, the low Mf female describes herself as more dissatisfied, tense, lacking in self-confidence, reports herself as having more stereotypically feminine communal and expressive attributes, less stereotypically masculine agentic and instrumental attributes and is more concerned with her self-concept and self-repute. As well, the Low Mf group reported a greater degree of sensual self-indulgence in comparison to the Mid-range Mf group. The Low and Mid Mf groups both reported themselves as more emotionally vulnerable and insecure as compared to those in the High Mf group who described themselves as more aggressive, dominant and emotionally

¹ An optimal subject pool for the amount of variables used in the factor analysis would be approximately 5,700.

tough. A final distinction was the higher scores of the Low Mf group on information-intelligence.

Therefore, with respect to the first three hypotheses, low Mf females did report higher D (depression) scores, did rate themselves lower on M (masculinity) and M-F (masculinity-femininity) and higher on Narcism (Nal).

Contrary to expectations, they did not score higher on the Mating (Mal) and Sweetheart-spouse (Swl) scales of the MAT, although Sweetheart-spouse was clustered with the Mf scale on Factor 13. As well, the Low Mf group did not obtain higher Pt scores. Although this discrepancy is difficult to explain, it may be that the Pt scale indicates a more-agitated anxiety and tension, while the D scale may be reflecting basic, chronic difficulties with self-esteem and a self-concern without the energy investment of Pt. The Low Mf group did report significantly higher self-ratings on expressive, communal attributes (F; femininity) in comparison to the High Mf group. On reflection, their higher endorsement of feminine attributes when compared to the other polar group is consistent, but it should be noted that there were not significant differences in this case between the Low and Mid Mf groups; both groups endorsing a relatively higher degree of feminine characteristics.

These findings are consistent with the conception of the low Mf female as self-dissatisfied and having a poorer self-image along with endorsing more stereotypically feminine

characteristics. These results are similar to those of Black (1956) who found self-ratings by low Mf females to consist of, adjectives such as self-dissatisfied, self-distrusting, sensitive, neurotic, and moody. Ratings by peers of these same individuals suggested a generally effective person in comparison to the low Mf females' unfavourable self-perceptions.

Examination of inter-variable correlations within each Mf group served to clarify the nature and differential relationships of the Mf scale.¹ The Low Mf group showed the most distinct relationships of the Mf scale to several of the other variables. Of particular note is the moderate negative relationships of the Mf scale to ratings of mother on stereotypically feminine attributes and as manifesting positive child-rearing practices, and the lesser negative relationship to family harmony, togetherness and mother acceptance. Therefore, with higher Mf scores (lower T-scores), the mother is perceived as having less nurturant, expressive and communal qualities, as being more critical and punitive, and less encouraging, praising, affectionate, interested, and consistent. In addition, the family is perceived as being less close and supportive; not the way the respondent would want to bring up her own children. Hence, with respect to the fourth hypothesis, low Mf females did not have lower scores on these scales per se, but within the low Mf group lower Mf T-scores were related to less positive

¹ It should be noted that due to the number of variables, chance correlations are expected. However the consistency in the pattern of results supports the proposed interpretation.

perceptions of family atmosphere and mother's child-rearing behaviors. It is consistent that this relationship extended to ratings of mother on feminine attributes (Fmother). Although a negative relationship with the Mf scale was shown as well for ratings of mother's democracy (Momdemoc), the correlation was of a lesser magnitude.

The relationship of negative mother perceptions to the Mf scale may clarify the significance of higher scores on self-indulgence (Nal) in the Low Mf group. It may be hypothesized that a lesser level of mother nurturance, interest, expressiveness and consistency, etc. may be a factor in motivating the child to administer the "caring" to herself via self-indulgence. Further, according to Deutsch (1946) narcissism intensifies during adolescence and functions to protect the ego from feelings of weakness, from being diffused in identifications, and supplies the sexes with the capacity for self-observation. Deutsch notes that the "continuation of narcissism beyond adolescence is a specific and differentiating trait of femininity" (p. 146).

Within the Low Mf group were additional but lesser relationships of the Mf scale to concern with self-concept, self-repute and sense of duty. Although the concern with one's self-concept and repute is consistent with a general worry about oneself, i.e. self-concern, self-criticism, it is more difficult to account for the sense of duty (socialization) as the latter is conventionally considered

the developmental outcome of socio-parental influences. One can propose that in the case of low Mf females the societal influence carries more weight than the parental aspect, reliance on conventional roles and criteria of success when an internal sense of satisfaction and self-trust is lacking. Kohlberg (1966) has proposed that societal expectations may be most influential in sex-role development. It may be speculated that the Low Mf group, scoring highest on general information and intelligence, may be more aware of such expectations. In addition, although strict comparisons are precluded because of different measures, it is of interest that Block (1973) described women categorized as both highly feminine and socialized as having stereotypically feminine traits but also as dissatisfied, indecisive, vulnerable, and lacking in spontaneity. Again, there is a notable similarity to the adjective self-ratings in Black (1956).

Within the Mid Mf group the highest (although modest) correlation with the Mf scale was a self-report of anxiety and psychological turmoil (Pt). This result was expected but not revealed in the Low Mf group. On reflection this finding is explicable in that the Mid Mf group has been unnaturally separated from the Low Mf group by virtue of a mathematical procedure (standard deviation). In a real sense then, the separation of raw scores of 41 and 42 into different groups was pragmatic. As such, the edges between groups should be conceptualized as blurry; the scale being a continuum, not

segmental. There were no significant correlations with the Mf scale in the High Mf group.

In all groups endorsement of stereotypically masculine traits was negatively related to ratings of anxiety, social introversion and lack of self-confidence. This supports the findings that in this culture masculine attributes are related to self-esteem (Spence et al., 1975; Spence and Helmreich, 1978). In view of the Low Mf group reporting the least amount of instrumental qualities, their significantly higher scores on self-dissatisfaction and depression are not surprising.

Results of chi-square analyses showed no differences of PAQ sex-type proportions between each Mf group and the sample as a whole. Therefore, counter to expectations, low Mf females were not disproportionately classified as undifferentiated and feminine. It may be that because of the sample size, the use of proposed values for PAQ categorization by median-split may not be a refined enough measure. Spence and Helmreich (1978) did note that subtle relationships may be more clearly revealed if median values established for the population under investigation are employed. However, this was not possible here, as recomputation of median values requires a sample composed of both sexes.

In conclusion, the salient result of this study is the depiction of the low Mf female as self-dissatisfied;

concerned about herself, insecure, and self-critical. This picture is similar to the self-effacing mode of adjustment described by Leary (1957); his adjectives of socially fearful, modest, reserved, self-critical, and self-depreciative applicable as well to the Low Mf group in this study. His conceptualization of a continuum in the use of any security operation may explain the moderate as opposed to very strong interrelationships among variables in the Low Mf group. Using his framework, it may be hypothesized that although the Low Mf group may be rather homogeneous in terms of the prevalent type of security operation used; the extent and degree (i.e. adaptive-maladaptive) to which any group member manifests this mode of adjustment undoubtedly varies.

The self-depreciation and insecurity of the Low Mf group would seem to be logically extended to one's self-conception as a woman, certainly a major focus of self-definition for any female person. The relationship of the Mf scale within this group to concern with self-concept, self-repute, sense of duty as well as endorsement of stereotypically feminine attributes indicate the influence of socialization. As such, this lends support to the contention of those Mf scale correlates which describe the endorsement of stereotypically feminine attitudes and behaviors as an overcompensation for felt inadequacies; reliance on conventional role behaviors and attitudes (role-playing) as an attempt to alleviate the anxiety of a lack of a sense of ease with oneself as a

woman (role-taking).

As previously discussed, there were indications that the mothers of Low Mf group females were perceived as less than adequate in their parental roles; their nurturance and democracy being inversely related to Mf scores in this group. In view of the literature concerned with parental antecedents in the development of sex-related personality characteristics, the feminine endorsement of these Low Mf daughters cannot be viewed as an outcome of modelling. Identification with such mothers (as perceived by daughters) would posit similar deficiencies in the daughters. As such, the Low Mf female's endorsement of stereotypically feminine attitudes and behaviors would then be a logical compensation for these inadequacies.

This study has supported the accepted interpretation of Low Mf scale T-scores in females on the MMPI, and additionally, verifies the meaningfulness of the MMPI scales in a normal population. Further investigations of the hypotheses discussed here and validation of these results in different populations are warranted before absolute faith in the clinical correlates is justified.

Ancillary Findings of Note

1. As denoted by the factor analysis, the scales of the MMPI and the MAT were shown to be relatively independent. The absence of notable overlap supports the contention that the MAT is a measure of motivational dynamics and hence, is separate from personality factors.
2. Inclusion of the Home-parental sentiment (Hol) on Factor 2 (Mother and Family Acceptance) lends validity to that scale as a measure of positive attitudes towards the parental home.
3. Intercorrelations of self-ratings on the scales of the Personal Attributes Questionnaire (PAQ) in the present study were highly similar to the normative data reported by Spence and Helmreich (1978); thereby supporting the scales as relatively independent measures of masculinity and femininity (see Table 8, Appendix E).

Implications for Further Research

This investigation has been an initial step in determining the validity of the Mf scale clinical correlates in females. Its findings are restricted by the nature of the sample, college students, and the choice of measures.

A valuable direction for future research may be investigating self-ratings on sexual adjustment and satisfaction and self-reports using other measures of self-esteem and self-confidence. Additionally, although scales are not yet available, it would be of interest to examine the relationship between the Mf scale and stereotypical but socially-undesirable sex-related attributes.

Results have indicated that attitudes toward the family and especially mother, bear a relationship to the Mf scale. Investigations focusing on clarifying this relationship, perhaps by comparing self-ratings by mothers and daughters on such measures as sex-related personality attributes and self-esteem would be of value.

BIBLIOGRAPHY

- Alker, H.A. (review of Motivation Analysis Test) In O.K. Buros (Ed.), Personality Tests and Reviews II, New York: The Gryphon Press, 1975.
- Bakan, D. The duality of human existence. Chicago: Rand McNally, 1966.
- Bardwick, J.M. Psychology of women. New York: Harper & Row, 1971.
- Barry, H., Bacon, M.K., & Child, I.L. A cross-cultural survey of some sex differences in socialization. Journal of Abnormal and Social Psychology, 1957, 55, 527-534.
- Bem, S.L. The measurement of psychological androgyny. Journal of Consulting and Clinical Psychology, 1974, 42, 155-162.
- Bem, S.L. Sex role adaptability: One consequence of psychological androgyny. Journal of Personality and Social Psychology, 1975, 31, 634-643.
- Bem, S.L., & Lenney, E. Sex-typing and the avoidance of cross-sex behavior. Journal of Personality and Social Psychology, 1976, 33, 48-54.
- Berliner, B. On some psychodynamics of masochism. The Psychoanalytic Quarterly, 1947, 16, 459-471.
- Berzins, J.I., Welling, M.A., & Wetter, R.E. A new measure of psychological androgyny based on the Personality Research Form. Journal of Consulting and Clinical Psychology, 1978, 46, 128-138.
- Black, J.D. Adjectives associated with various MMPI codes. In G.S. Welsh & W.G. Dahlstrom (Eds.), Basic readings on the MMPI in psychology and medicine. Minneapolis: University of Minnesota Press, 1956.
- Block, J.H. Conceptions of sex role some cross-cultural and longitudinal perspectives. American Psychologist, 1973, 28, 512-526.
- Broverman, I.K., Broverman, D.M. Clarkson, F.E., Rosenkrantz, P.S., & Vogel, S.R. Sex-role stereotypes and clinical judgements of mental health. Journal of Consulting and Clinical Psychology, 1970, 34, 1-7.

- Brown, H. Similarities and differences in college populations on the Minnesota Multiphasic Personality Inventory. Journal of Applied Psychology, 1948, 32, 541-549.
- Burdsal, Jr. C. An examination of the relationship between personality traits and motivational dynamics. The Journal of Psychology, 1976, 94, 264-267.
- Burger, G.K., Armentrout, J.A., & Rapfogel, R.G. Recalled parental behavior and objective personality measures: a canonical analysis. Journal of Personality Assessment, 1975, 39(5), 514-522.
- Butcher, J.N. (Ed.). Objective personality assessment. New York: Academic Press, 1972.
- Butcher, J.N., & Tellegen, A. Common methodological problems in MMPI research. Journal of Consulting and Clinical Psychology, 1978, 46(4), 620-628.
- Carlson, R. Sex differences in ego functioning. Journal of Consulting and Clinical Psychology, 1971, 37, 267-277.
- Carson, R.C. Interpretive manual to the MMPI. In J.N. Butcher (Ed.), MMPI, research developments and clinical applications. New York: McGraw-Hill Book Co., 1969.
- Cattell, R.B., Horn, J.L., & Butcher, J. The dynamic structure of attitudes in adults: a description of some established factors and of their measurement by the Motivation Analysis Test. British Journal of Psychology, 1962, 53, 57-69.
- Cattell, R.B., Horn, J.L., Sweney, A.B., & Radcliffe, J.A. The Motivation Analysis Test "MAT" for High School Seniors and the Adult Age Range. Institute for Personality and Ability Testing, Champaign, Illinois, 1959, 1964.
- Constantinople, A. Masculinity-femininity: an exception to a famous-dictum? Psychological Bulletin, 1973, 80, 389-407.
- Dahlstrom, W.G., & Welsh, G.S. An MMPI handbook. A guide to use in clinical practice and research. Minneapolis: The University of Minnesota Press, 1960.
- Dahlstrom, W.G., Welsh, G.S., & Dahlstrom, L.B. (Eds.). An MMPI handbook. Volume 1: clinical interpretation. Minneapolis: University of Minnesota Press, 1972.

D'Andrade, R.G. Sex differences and cultural institutions. In E. Maccoby (Ed.), The development of sex differences. Stanford: Stanford University Press, 1966.

Deutsch, C.J., & Gilbert, L.A. Sex role stereotypes: effect on perceptions of self and others and on personal adjustment. Journal of Counselling Psychology, 1976, 23, 373-379.

Deutsch, H. The psychology of women. A psychoanalytic interpretation (Vol. 1). London: Research Books Ltd., 1946.

Drake, L.E., & Oetting, E.R. An MMPI codebook for counsellors. Minneapolis: University of Minnesota Press, 1959.

Duckworth, E. & Duckworth, J. MMPI interpretation manual for counsellors and clinicians. Muncie: Accelerated Development, 1977.

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

Ford, C.F., Castelnuovo-Tedesco, P., & Long, K.D. Women who seek therapeutic abortion: a comparison with women who complete their pregnancies. American Journal of Psychiatry, 1972, 129(5), 546-552.

Good, P. King-Ellison, & Brantner, J.P. A practical guide to the MMPI. Minneapolis: University of Minnesota Press, 1974.

Gonen, J.Y., & Lansky, L.M. Masculinity, femininity, and masculinity-femininity: a phenomenological study of the Mf Scale of the MMPI. Psychological Reports, 1968, 23, 183-194.

Graham, R. The MMPI: A Practical Guide. New York: Oxford University Press, 1977.

Graham, R. The Minnesota Multiphasic Personality Inventory (MMPI). In B. Wolman (Ed.), Clinical diagnostic of mental disorders, handbook. New York: Plenum Press, 1978.

Graham, J.R., Schroeder, H.E., & Lilly, R.S. Factor analysis of the social-introversion and masculinity-femininity scales of the MMPI. Journal of Clinical Psychology, 1971, 27, 367-370.

- Gravitz, M.A. Masculinity-femininity orientation on the MMPI and marital status. Psychological Reports, 1968, 23, 1330.
- Gutman, D.L. Women and the conception of ego strength. Merrill-Palmer Quarterly, 1965, 11, 229-240.
- Hanvik, L.J., & Byrum, M. MMPI profiles of parents of child psychiatric patients. Journal of Clinical Psychology, 1959, 15, 427-431.
- Hathaway, S.R., & McKinley, J.C. Minnesota Multiphasic Personality Inventory. New York: The Psychological Corporation, 1943.
- Hathaway, S.R., & Meehl, P.E. An atlas for the clinical use of the MMPI. Minneapolis: University of Minnesota Press, 1951.
- Hathaway, S.R., & Monachesi, E.D. (Eds.). Analyzing and predicting juvenile delinquency with the MMPI. Minneapolis: University of Minnesota Press, 1953.
- Heilbrun, A.B., Jr. Measurement of masculine and feminine sex role identities as independent dimensions. Journal of Consulting and Clinical Psychology, 1976, 44, 183-190.
- Horrocks, J.E., & Jackson, D.W. Self and role: a theory of self-process and role behavior. Boston: Houghton Mifflin, 1972.
- Johnson, M.M. Sex role learning in the nuclear family. Child Development, 1963, 34, 319-333.
- Jones, W.H., O'C. Chernovetz, M.E., & Hansson, R.O. The enigma of androgyny: differential implications for males and females? Journal of Consulting and Clinical Psychology, 1978, 46(2), 298-313.
- Kelly, J.A., Caudill, M.S., Hathorn, S., & O'Brien, C.G. Socially undesirable sex-correlated characteristics: implications for androgyny and adjustment. Journal of Consulting and Clinical Psychology, 1977, 45(6), 1185-1186.
- Kelly, J.A., & Worell, L. Parent behaviors related to masculine, feminine and androgynous sex role orientations. Journal of Consulting and Clinical Psychology, 1976, 44, 5, 843-851.

- Kelly, J.A., & Worell, J. New formulations of sex roles and androgyny: a critical review. Journal of Consulting and Clinical Psychology, 1977, 45(6), 1101-1115.
- King, G.D., & Kelley, C.K. MMPI behavioral correlates of spike-5 and two-point code types with scale 5 as one elevation. Journal of Clinical Psychology, 1977, 33, 180-185.
- Kohlberg, L.A. Cognitive-developmental analysis of children's sex-role concepts and attitudes. In E.E. Maccoby (Ed.), The development of sex differences. Stanford: Stanford University Press, 1966.
- Lachar, D. The MMPI: clinical assessment and automated interpretation. Los Angeles: Western Psychological Services, 1974.
- Leary, T. Interpersonal diagnosis of personality. New York: The Ronald Press Co., 1957.
- Lough, O.M. Women students in liberal arts, nursing and teacher training curricula and the Minnesota Multiphasic Inventory. Journal of Applied Psychology, 1947, 31, 437-445.
- Maccoby, E.E., & Jacklin, C.N. The psychology of sex differences. Stanford: Stanford University Press, 1974.
- Marks, P.A., & Seeman, W. The actuarial description of abnormal personality. Baltimore: The William & Wilkins Co., 1963.
- Marks, P.A., Seeman, W., & Haller, D.L. The actuarial use of the MMPI with adolescents and adults. Baltimore: The William & Wilkins Co., 1974.
- Marzolf, S.S. Parent behavior as reported by college students. Journal of Clinical Psychology, 1965, 21, 360-366.
- Mowrer, O.H. Learning theory and personality dynamics. New York: The Ronald Press, 1950.
- Osborne, D. An MMPI index of disturbed marital interaction. Psychological Reports, 1971, 29, 852-854.
- Parsons, T., & Bales, R.F. Family socialization and interaction process. Glencoe: Free Press, 1955.

- Pearson, J.S., & Swenson, W.M. A user's guide to the Mayo clinic automated MMPI program. New York: Psychological Corporation, 1967.
- Rosenkrantz, P.S., Vogel, S.R., Bee, H., Broverman, I.K., & Broverman, D.M. Sex role stereotypes and self-concepts in college students. Journal of Consulting and Clinical Psychology, 1968, 32, 287-295.
- Simon, N.M., Senturia, A.G., & Rothman, D. Psychiatric illness following therapeutic abortion. American Journal of Psychiatry, ~~1967~~, 124, 59-65.
- Sopchak, A.L. College student norms for the MMPI. Journal of Consulting Psychology, 1952, 16, 445-448.
- Spence, J.T., & Helmreich, R.L. Masculinity-femininity: their psychological dimensions, correlates, & antecedents. Austin: University of Texas Press, 1978.
- Spence, J.T., Helmreich, R., & Stapp, J. The Personal Attributes Questionnaire: A measure of sex role stereotypes and masculinity-femininity. Journal Supplement Abstract Service Catalog of Selected Documents in Psychology, 1974, 4, 43. (Ms. NO. 617).
- Spence, J.T., Helmreich, R., & Stapp, J. Ratings of self and peers on sex-role attributes and their relation to self-esteem and conceptions of masculinity and femininity. Journal of Personality and Social Psychology, 1975, 32, 29-39.
- Stansell, V., Beutler, L.E., Neville Jr., C.W., & Johnson, D.T. MMPI correlates of extreme field independence and field dependence in a psychiatric population. Perceptual and Motor Skills, 1975, 40, 539-544.
- Stoppard, J.M., & Kalin, R. Can gender stereotypes and sex-role conceptions be distinguished? British Journal of Social and Clinical Psychology, 1978, 17, 211-217.
- Tiger, L., & Fox, R. The imperial animal. New York: Holt, Rinehart & Winston, 1971.
- Weisgerber, C.A. Norms for the MMPI with student nurses. Journal of Clinical Psychology, 1954, 10, 192-194.
- Welsh, G.S., & Dahlstrom, W.G. (Eds.). Basic readings in the MMPI in psychology and medicine. Minneapolis: The University of Minnesota Press, 1956.

Wiggins, J.S., & Holzmuller, A. Psychological androgyny and interpersonal behavior. Journal of Consulting and Clinical Psychology, 1978, 46(1), 40-52.

Winer, F. The relationship of certain attitudes toward the mother to sex-role identity (Doctoral dissertation, New York University, 1961). Dissertation Abstracts, 1962, 22(12), 4416 (University Microfilms NO. 62-1436).

Witkin, H.A. Social conformity and psychological differentiation. International Journal of Psychology, 1974, 9, 11-29.

Worell, J. Sex roles and psychological well-being: perspectives on methodology. Journal of Consulting and Clinical Psychology, 1978, 46(4), 777-781.

PREVIOUSLY COPYRIGHTED MATERIAL
IN APPENDICES A, B, and C NOT
MICROFILMED

Appendix A - Motivation Analysis Test (MAT)

MAY BE OBTAINED FROM

Institute for Personality and Ability Testing
1602-04 Coronado Drive
Champaign, Illinois
(Catalogue No. MM 181)

Appendix B - Personal Attributes Questionnaire (short form)

TO BE FOUND IN: Spence, Janet T. and Helmreich, Robert L. Masculinity & Femininity: Their Psychological Dimensions, Correlates & Antecedents. Austin: University of Texas Press, 1978. Appendix A, table II, pp. 231-233.

Appendix C - Parental Attitude Questionnaire

TO BE FOUND IN: Spence and Helmreich, op. cit. Made up of Family Information Sheet, Appendix A, Table I; and Appendix A, Table XII, pp. 230; 250-253.

APPENDIX D

APPENDIX D

Table 5
Inter-Scale Correlation Coefficients Within Low HIF Group

	D	Pd	Hf	Pa	Pt	SI	Hself	M-Fself	Pself	Mother	H-Father	Fmother	Hfather	M-Ffather	Ffather
D	1.000														
Pd	0.486	1.000													
Hf	0.133	0.631	1.000												
Pa	0.356	0.442	0.173	1.000											
Pt	0.635	0.080	0.181	-0.068	0.596	1.000									
SI	0.609	-0.627	-0.291	-0.242	-0.276	-0.221	1.000								
Hself	-0.363	0.105	-0.082	-0.092	-0.092	-0.198	0.433	1.000							
M-Fself	0.008	0.105	0.275	0.294	0.106	-0.012	0.314	-0.196	1.000						
Fself	-0.054	-0.170	-0.081	-0.101	-0.045	0.012	0.050	-0.107	0.207	1.000					
Mother	0.101	0.063	0.075	0.091	-0.010	0.066	-0.111	-0.017	0.113	0.809	1.000				
H-Father	-0.057	-0.075	-0.421	-0.020	0.049	0.062	-0.011	-0.084	-0.049	0.114	-0.186	1.000			
M-Father	-0.078	-0.213	-0.107	-0.187	0.049	-0.005	0.034	-0.190	-0.184	-0.128	-0.323	0.426	1.000		
M-Ffather	0.093	-0.025	-0.202	-0.230	0.246	0.210	-0.243	-0.094	-0.322	-0.010	-0.084	-0.066	0.445	1.000	
Ffather	-0.293	-0.206	0.031	0.091	-0.118	-0.191	0.150	0.034	0.270	0.093	-0.006	0.111	0.670	-0.358	1.000
Fposit	-0.019	-0.357	0.124	-0.144	0.060	0.183	-0.009	-0.062	0.019	0.078	-0.082	0.681	0.369	0.014	0.637
Momposit	-0.022	-0.382	-0.481	-0.278	-0.159	-0.039	0.099	0.049	0.008	0.123	-0.159	0.068	0.359	0.325	-0.015
Momdeoc	0.049	-0.343	-0.283	-0.274	0.008	0.107	-0.049	-0.002	0.068	0.365	-0.002	0.046	0.365	0.067	0.560
Momsony	0.002	-0.289	-0.349	-0.165	0.024	0.039	-0.007	-0.027	0.046	0.274	-0.027	0.537	0.274	-0.055	0.664
Momid	0.081	0.109	-0.272	0.162	0.003	-0.115	0.012	-0.172	0.169	0.014	0.118	-0.003	-0.448	0.168	-0.487
Cal	-0.184	0.046	-0.206	0.041	-0.155	-0.113	-0.008	-0.313	-0.045	0.421	0.364	0.248	0.274	-0.287	-0.219
Hol	0.053	-0.054	-0.044	0.192	0.133	0.090	-0.303	-0.095	-0.139	-0.089	-0.083	0.000	0.004	0.105	-0.082
Frl	0.071	0.107	-0.146	0.092	-0.012	-0.076	-0.095	0.196	-0.044	0.273	-0.235	-0.272	-0.117	-0.185	0.107
Hal	-0.176	-0.028	0.033	0.119	-0.149	-0.182	0.082	0.109	-0.044	0.103	-0.006	-0.243	0.065	-0.040	-0.166
Sel	0.181	-0.181	0.325	-0.193	-0.096	0.060	-0.094	-0.127	-0.039	-0.103	-0.086	-0.043	0.007	-0.026	-0.065
Ssl	0.069	0.312	0.363	0.199	-0.030	-0.082	0.164	0.374	-0.047	-0.149	-0.109	0.047	0.273	0.428	-0.305
Natel	0.201	0.066	-0.175	0.023	0.196	-0.000	-0.074	-0.058	-0.110	-0.017	-0.109	0.088	0.187	0.146	-0.260
Pgl	0.123	-0.203	0.010	0.001	0.011	0.158	-0.330	-0.634	0.038	0.104	0.034	0.088	0.187	0.146	-0.260
Asl	0.174	0.004	0.186	-0.203	-0.031	0.166	-0.313	-0.023	-0.106	0.086	0.195	-0.176	-0.209	-0.025	-0.229
Ssl	0.060	0.102	-0.050	-0.005	0.001	0.012	-0.215	-0.273	-0.141	0.044	0.063	0.289	0.193	0.055	0.057

Note. Coefficients have been rounded to three decimal places.
N = 33 unless otherwise denoted

Table 5
Inter-Scale Correlation Coefficients Within Low HF Group

	Faposit (32)	Homposit	Homemec	Harmony	Homid (30)	Cal	Hom	Fr1	Nal	Sel	Ssl	Marel	Pgl	Asl	Swl
Faposit	1.000														
Homposit	0.312	1.000													
Homemec	0.514	0.776	1.000												
Harmony	0.530	0.820	0.939	1.000											
Homid	-0.389	0.421	0.309	0.323	1.000										
Cal	-0.358	0.019	0.070	0.029	0.262	1.000									
Hom	0.366	0.252	0.275	0.310	0.049	-0.141	1.000								
Fr1	-0.116	-0.122	-0.005	-0.053	0.106	-0.020	-0.189	1.000							
Nal	-0.208	-0.394	-0.335	-0.356	-0.097	-0.033	0.032	0.432	1.000						
Sel	0.074	0.014	-0.109	-0.106	0.029	-0.123	-0.025	0.028	0.058	1.000					
Ssl	-0.101	-0.307	0.192	-0.223	-0.137	-0.193	-0.385	0.296	0.312	-0.122	1.000				
Marel	-0.101	-0.052	0.633	0.038	0.096	-0.044	-0.372	0.243	0.030	0.028	0.297	1.000			
Pgl	-0.093	0.115	0.011	0.045	0.352	-0.054	0.237	-0.149	0.019	0.363	-0.509	-0.032	1.000		
Asl	-0.135	0.052	0.158	0.006	-0.073	0.074	0.061	-0.012	0.010	0.007	0.070	-0.334	0.457	1.000	
Swl	0.227	0.109	0.267	0.298	0.090	-0.133	0.226	-0.034	-0.115	-0.186	-0.086	-0.172	0.115	0.001	1.000

APPENDIX D

Table S
Inter-Scale Correlation Coefficients Within Mid HF Group

D	Pd	Hf	Pa	Pt	Sl	Hself	M-Fself	Fself	M-Father (117)	Ffather (117)	Mfather (115)	Ffather (115)
D	1.000											
Pd	0.327	1.000										
Hf	0.176	0.263	1.000									
Pa	0.057	0.283	0.164	1.000								
Pt	0.602	0.514	0.317	0.280	1.000							
Sl	0.690	0.117	0.177	-0.126	0.552	1.000						
Hself	-0.481	-0.212	-0.241	-0.019	-0.415	-0.336	1.000					
M-Fself	-0.338	-0.141	-0.240	-0.124	-0.343	-0.373	-0.280	1.000				
Fself	-0.051	-0.005	0.026	0.145	0.011	-0.115	-0.029	-0.029	1.000			
M-Father	0.037	0.074	-0.030	0.114	0.114	-0.081	0.070	0.070	-0.186	1.000		
Ffather	0.094	0.027	0.018	0.029	0.080	-0.032	0.053	0.053	-0.033	0.148	1.000	
M-Father	-0.253	-0.077	0.009	0.080	-0.131	-0.311	-0.001	-0.001	-0.101	0.075	0.553	1.000
Ffather	-0.002	0.147	0.012	0.079	0.068	-0.004	0.109	0.109	0.122	0.129	0.317	0.690
M-Father	-0.079	-0.314	-0.064	-0.012	-0.060	-0.080	0.237	0.237	0.085	0.232	0.410	0.197
Ffather	-0.063	-0.293	-0.069	-0.082	-0.161	-0.161	0.144	0.144	-0.020	0.155	0.184	0.262
M-Father	-0.246	-0.376	-0.057	-0.082	-0.312	-0.298	0.214	0.214	0.017	0.226	0.258	0.289
Ffather	-0.323	-0.257	-0.022	-0.066	-0.261	-0.388	0.140	0.140	0.086	0.265	0.331	-0.492
M-Father	-0.307	-0.274	-0.030	-0.056	-0.270	-0.379	-0.045	-0.045	0.007	0.138	-0.106	-0.076
Ffather	-0.059	0.051	0.117	-0.012	-0.005	-0.027	-0.029	-0.029	0.074	0.056	0.051	0.052
M-Father	0.032	-0.051	-0.011	-0.001	-0.063	0.041	-0.029	-0.029	-0.040	0.101	-0.041	-0.082
Ffather	-0.089	0.009	0.105	0.078	0.060	0.008	0.231	0.231	0.031	0.064	-0.073	-0.025
M-Father	-0.106	-0.062	0.034	-0.161	-0.226	-0.116	0.301	0.301	-0.076	-0.017	-0.059	-0.106
Ffather	-0.158	-0.055	0.006	-0.083	-0.147	-0.133	-0.124	-0.124	-0.076	0.034	-0.016	-0.015
M-Father	-0.067	-0.109	-0.162	0.031	0.023	0.010	0.021	0.021	-0.186	0.080	0.045	0.168
Ffather	0.056	0.060	-0.036	-0.037	-0.037	-0.066	0.105	0.105	0.003	0.119	0.004	-0.124
M-Father	0.090	0.053	0.024	0.102	0.122	-0.053	0.049	0.049	-0.090	0.180	-0.009	-0.002
Ffather	-0.069	-0.010	0.063	0.004	0.004	-0.020	-0.129	-0.129	0.052	0.017	0.087	
M-Father	-0.167	-0.009	-0.056	-0.081	-0.081	0.218						
Ffather	-0.054	-0.036	-0.039	-0.004	-0.004	0.085						

Note. Coefficients have been rounded to three decimal places.
N = 118 unless otherwise denoted

Table 5
Inter-Scale Correlation Coefficients Within Mid MF Group

	Faposit (114)	Momposit (117)	Momdemoc (117)	Harmony (117)	Momid (110)	Cal	Hol	Frl	Nal	Sel	Ssl	Matel	Pgl	Asl	Swl
Faposit	1.000														
Momposit	0.380	1.000													
Momdemoc	0.485	0.781	1.000												
Harmony	0.516	0.779	0.900	1.000											
Momid	-0.504	0.224	0.152	0.169	1.000										
Cal	0.009	0.141	0.123	0.080	0.194	1.000									
Hol	0.080	0.025	0.091	0.140	0.052	0.143	1.000								
Frl	0.011	0.119	0.157	0.145	-0.008	-0.161	-0.230	1.000							
Nal	-0.112	0.004	0.037	0.049	0.074	-0.069	-0.188	0.086	1.000						
Sel	-0.012	0.057	0.033	0.027	-0.064	0.040	0.171	-0.190	-0.268	1.000					
Ssl	0.005	0.049	0.086	0.111	0.086	0.012	-0.197	-0.021	0.359	-0.218	1.000				
Matel	0.107	0.041	0.068	0.036	0.005	-0.001	-0.252	-0.091	0.246	-0.278	0.305	1.000			
Pgl	0.126	0.094	0.050	0.106	-0.129	-0.013	0.022	0.027	0.118	-0.041	-0.297	0.019	1.000		
Asl	-0.064	0.093	0.050	0.083	0.169	0.019	0.008	-0.045	0.232	-0.163	0.138	0.222	0.191	1.000	
Swl	-0.162	0.029	-0.035	-0.065	0.087	0.120	0.032	-0.002	-0.252	0.256	-0.170	-0.204	-0.882	-0.198	1.000

APPENDIX D

Table 5

Inter-Scale Correlation Coefficients Within High Hf Group

	D	Pd	Hf	Pa	Pt	SI	Mself	M-Fself	Fself	Mother	M-Fmother	Fmother	Mfather	H-Ffather	Ffather
D	1.000														
Pd	0.436	1.000													
Hf	-0.025	0.101	1.000												
Pa	0.454	0.511	0.244	1.000											
Pt	0.537	0.538	0.095	0.627	1.000										
SI	0.577	0.376	-0.276	0.383	0.493	1.000									
Mself	-0.249	-0.320	-0.095	-0.305	-0.485	-0.564	1.000								
M-Fself	-0.330	-0.382	-0.094	-0.455	-0.667	-0.431	-0.215	1.000							
Fself	-0.004	0.249	-0.169	0.263	0.276	-0.288	-0.288	-0.288	1.000						
Mother	-0.230	-0.133	0.158	-0.284	-0.282	-0.074	0.057	0.326	-0.288	1.000					
H-Fmother	-0.232	-0.081	0.172	-0.339	-0.434	-0.116	0.104	0.376	-0.509	0.601	1.000				
Fmother	-0.032	-0.058	-0.012	-0.218	-0.186	-0.025	0.018	-0.147	-0.002	0.624	0.003	1.000			
Mfather	-0.023	-0.011	0.001	-0.176	-0.079	0.101	0.056	0.300	-0.154	0.238	0.112	0.362	1.000		
H-Ffather	-0.191	0.248	-0.199	-0.077	0.152	0.260	0.118	0.234	-0.063	-0.133	-0.184	0.031	0.395	1.000	
Ffather	-0.181	-0.189	0.275	-0.172	-0.136	-0.294	0.233	0.137	-0.293	-0.001	0.111	0.094	0.344	-0.260	1.000
Fposit	-0.158	-0.271	0.161	-0.194	-0.167	-0.273	0.266	0.161	-0.079	0.093	-0.164	0.353	0.413	0.063	0.613
Mposit	-0.212	-0.554	0.078	-0.436	-0.623	-0.237	-0.366	0.436	-0.197	0.437	0.081	0.557	0.182	-0.061	0.111
M-Fposit	-0.285	-0.471	-0.045	-0.534	-0.426	-0.294	0.213	0.251	-0.069	0.520	0.126	0.619	0.231	-0.035	0.113
M-Fmother	-0.371	-0.541	-0.018	-0.437	-0.477	-0.248	0.199	0.263	-0.131	0.550	0.113	0.598	0.240	-0.098	0.042
M-Ffather	-0.169	-0.135	0.062	-0.011	-0.154	-0.001	-0.295	-0.242	0.217	-0.000	-0.033	-0.145	-0.503	-0.237	-0.588
M-Fposit	-0.510	-0.319	0.174	-0.316	-0.596	-0.246	0.254	0.329	-0.113	0.444	0.273	0.347	0.102	-0.245	0.133
M-Fmother	0.008	-0.373	0.352	-0.108	-0.215	-0.069	0.002	0.003	-0.493	0.286	0.435	-0.006	0.055	-0.397	0.554
M-Ffather	0.019	0.035	0.300	0.010	-0.115	0.174	-0.187	-0.065	-0.036	-0.152	0.066	-0.260	-0.090	-0.041	-0.185
M-Fposit	-0.317	0.080	-0.252	-0.017	-0.195	-0.301	0.217	0.168	0.326	0.023	-0.027	0.137	-0.024	-0.189	0.085
M-Fmother	0.073	-0.277	0.021	-0.092	-0.196	0.096	-0.658	0.215	-0.339	0.220	0.145	0.224	0.028	-0.048	-0.069
M-Ffather	-0.037	-0.105	-0.017	0.067	0.060	-0.134	0.278	0.182	0.137	-0.079	-0.150	-0.051	-0.240	0.180	-0.192
M-Fposit	-0.017	0.154	-0.161	0.125	0.083	-0.141	0.256	0.190	0.250	-0.127	-0.294	-0.009	0.053	0.358	-0.270
M-Fmother	0.104	0.217	-0.222	0.069	0.035	0.064	0.050	-0.056	0.109	0.054	0.102	-0.087	-0.056	-0.061	-0.116
M-Ffather	-0.265	-0.204	-0.201	-0.224	-0.133	-0.308	0.151	0.194	0.292	0.115	0.002	0.192	0.094	-0.009	-0.032
M-Fposit	0.161	0.110	0.256	0.192	0.133	0.207	-0.391	-0.442	-0.128	-0.106	0.073	-0.204	-0.222	-0.180	0.130

Note. Coefficients have been rounded to three decimal places
N = 34 unless otherwise denoted

Table 5

Inter-Scale Correlation Coefficients Within High HF Group

	Faposit	Nonposit	Harmonoc	Harmony	Monid	Cal	Hol	Frl	Nal	Sel	Ssl	Matel	Pgl	Asl	Swl
Faposit	1.000														
Nonposit	0.443	1.000													
Harmonoc	0.468	0.794	1.000												
Harmony	0.464	0.888	0.904	1.000											
Monid	-0.606	0.167	0.177	0.187	1.000										
Cal	0.283	0.518	0.358	0.478	0.028	1.000									
Hol	0.290	0.184	0.123	0.170	-0.197	0.125	1.000								
Frl	-0.349	-0.110	-0.127	-0.181	0.301	0.028	0.146	1.000							
Nal	-0.121	-0.003	-0.105	-0.146	-0.010	0.314	-0.272	-0.152	1.000						
Sel	0.289	0.323	0.222	0.433	-0.141	0.245	0.213	-0.116	-0.508	1.000					
Ssl	-0.071	0.046	0.057	-0.040	-0.001	-0.290	-0.253	-0.243	0.124	-0.285	1.000				
Matel	-0.166	0.008	-0.016	-0.014	0.009	-0.224	-0.541	-0.123	0.109	-0.238	0.501	1.000			
Pgl	-0.061	-0.075	-0.057	-0.061	0.023	0.142	-0.110	-0.191	0.255	-0.073	-0.249	-0.273	1.000		
Asl	0.092	0.113	0.172	0.082	0.071	0.247	-0.184	-0.273	0.492	-0.277	-0.230	-0.230	0.258	1.000	
Swl	0.008	-0.130	-0.091	-0.058	0.226	-0.267	0.450	0.089	-0.412	0.106	-0.255	-0.325	-0.096	-0.528	1.000

APPENDIX E

APPENDIX E

Table 8

INTERCORRELATION MATRIX OF PAQ SELF-RATINGS FOR PRESENT(P)
AND NORMATIVE(N) SAMPLES

Scale	Sample					
	M		M-F		F	
	P ^a	N ^b	P	N	P	N
M						
M-F	.56	.56				
F	.04	.09	-.33	-.24		

^aN = 166 due to listwise deletion of variables

^bBased on female proportion of 715 college students
(Spence & Helmreich, 1978)