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ANXIETY CORRELATES OF SEX ROLE IDENTITY

by

Mary Kay Biaggio

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

MASTER OF SCIENCE

in

Psychology

Approved :

UTAH STATE UNIVERSITY  
Logan, Utah

1975

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Abstract

Anxiety Correlates of Sex Role Identity

by

Mary Kay Biaggio, Master of Science

Utah State University, 1975

Major Professor: Dr. Elwin Nielsen  
Department: Psychology

The purpose of this study was to examine differences in anxiety levels between the sexes and between sex role identification groups (as defined by scores on a test of masculinity-femininity). Possible explanations for these differences were explored using a questionnaire made up of an openness versus closedness scale, a liberalism versus conservatism scale, and a cross-sex versus same-sex parent identification scale.

A sample of 108 females and 71 males was administered Gough's Femininity Scale, Cattell's IPAT Anxiety Scale Questionnaire, Taylor's Manifest Anxiety Scale, and a questionnaire devised for this particular study.

The sexes did not differ significantly in anxiety level but it was found that feminine persons of both sexes had higher anxiety levels on both of the anxiety scales employed. Females were more open than males on the openness

versus closedness scale and feminine persons of both sexes were more open than masculine persons. This study suggests the possibility that higher anxiety levels in females and feminine persons may be due to greater openness.

(60 pages)

## Introduction

A substantial body of evidence has determined that females score higher on measures of anxiety than do males. Some studies on anxiety level differences have categorized the sexes according to sex role identification groups, that is, masculine and feminine groups. It has generally been determined that feminine persons of both sexes have higher anxiety scores. A few isolated studies have attempted to explain this phenomena but no consensus has been reached.

The problem, then, is to determine possible explanations for higher anxiety levels in females and feminine persons.

When the presence of anxiety is interpreted loosely as an indicator of one's level of adaptation, other implications of this group of studies become evident. All the social sciences are now dealing with the pressing questions growing out of the woman's liberation movement. Two antagonistic camps can be identified as a result of this movement. One group would have it that there are no differences between the sexes other than the obvious physical ones. To them, the adoption of sex roles is no longer functional. They believe that some women who are pushed into the feminine role are deprived of the opportunity to find self-fulfillment. Opponents of this view maintain that there are distinct dif-

ferences between the sexes as far as abilities and needs are concerned. According to them, one's self-fulfillment or greatest adaptability is found in congruence between one's sex and sex role identity. Research, such as this study, which deals with the relationship between sex role identity and anxiety, can help in answering the question "Is there a relationship between sex role identity and adaptability and, if so, what is it?"

Scientific research has much to offer in that it can begin to answer some of the questions which have grown out of these two opposing viewpoints. Hopefully, research of this type will be valuable in settling some of the issues.

## Review of Literature

### Determinants of Sex Role Orientation

A keynote issue in the study of sex roles is concerned with the determinants of sex role orientation. Do men and women differ because of different learning experiences or are we in fact in the grips of biological determinism? With the advent of the woman's liberation movement this has become an important question. The functional value of adhering to the traditional rules of sex role assignment is now a matter for debate. A well defined division of labor between the sexes is certainly not as vital to survival now as it was in the days, for instance, of primitive hunting man. In the course of this debate more questions have been asked than there are answers for. Have sexual differences evolved for survival purposes and are they now genetically ingrained? And if so, has our level of culturalization outgrown the survival value of these differences? Or, are we simply ignorant of the necessity of differences between the sexes? And, the question closest to this research, are those individuals who do not conform to the traditional sex role more anxious or less adaptive than those that do?

Evidence from studies of the effects of sex hormones on lower animals presents a strong case in favor of biological determinism. Harlow (1965) found that immature female

rhesus monkeys that were prenatally exposed to the male sex hormone androgen showed evidence of masculine patterns of infant and youthful play. Similarly, when male rats were prenatally exposed to a substance that counteracted their own sex hormone they displayed female copulatory behavior in adulthood (Brecher, 1971). The study of two female pseudohermaphroditic monkeys suggests that prenatal hormonal action is responsible for the establishment of sex-related behavior that is not directly linked to reproductive functions (Young et al., 1965). There is also a new and more specific body of evidence accumulating that points to sexual differentiation of the brain as a result of hormonal activity. That is, during gender differentiation hormones act upon the central nervous system in such a way as to organize an undifferentiated brain into a "male" or "female" type, thus mediating male or female behavior patterns (Harris and Levine, 1962; Harris, 1964; Levine, 1966; Brecher, 1971; and Money, 1972).

Experimental manipulation of hormones in humans has, of course, not been possible. Researchers have, however, carried out ex post facto investigations of possible biological anomalies in hermaphrodites and homosexuals. An old theory of homosexuality contends that male homosexuals are "... real male sex intergrades which are genetically female but have lost all morphological sex characteristics except their chromosome formula (Lang, 1940, p. 59)." Methods of examining chromosomal patterns have since been refined and several researchers report no agreement between male homo-



sexuality and female nuclear sex, thus disproving Lang's theory (Blueyer and Wiedemann, 1956; Pare, 1956; Raboch and Nedoma, 1958; and Gentile et al., 1960). Furthermore, Perloff (1965, p. 57) states that "In our experience, no patient, either male or female, has shown any consistent reversal of endocrine pattern to explain homosexual tendencies. We have never observed any correlation between the choice of sex object and the level of hormonal secretion." In view of these results one might easily be led to completely discount the validity of a theory of genetic determination of homosexuality. The evidence is, however, inconclusive. A forceful study by Kallman (1952a, 1952b) examined the differences between forty pairs of monozygotic twins and forty-five pairs of dizygotic twins in which one member of each pair was a known overt homosexual. Kallman found one hundred per cent concordance in homosexuality for the monozygotic twins but the frequency of occurrence of homosexuality in the dizygotic pairs was similar to that of the general male population. This study, however, lacks adequate controls and has not been replicated. Marmor (1965) warns against accepting its conclusion of genetically determined maleness and femaleness in view of the amount of evidence from behavioral and biological sciences pointing to the importance of exogenous factors in the determination of homosexuality. A sample of this evidence comes from Hampson and Hampson who have done extensive research with hermaphrodites. It is their thesis that "One can conclude that an individual's gender role and orientation as boy or girl,



man or woman, does not have an innate, preformed, instinctive basis as some have maintained. Instead, the evidence supports the view that psychologic sex is undifferentiated at birth, a sexual neutrality in place of the Freudian bisexuality, and that the individual becomes differentiated as masculine or feminine, psychologically, in the course of the many experiences of growing up (Hampson and Hampson, 1961, p. 1413)." Another study of eight cases of hermaphrodites concludes that the psychological factor is more important than any other factor in determining psychosexual orientation (Kreisler, 1970). These conclusions also must be viewed with skepticism as they were formulated on abnormal samples. That is, the very ambiguity of the hermaphroditic identity may be the basis for the law of psychological determination of that identity.

There are several theoreticians who strongly defend a social learning explanation of psychosexual development. For instance, while Bandura and Walters (1963) recognize that sexual behavior in infrahuman species is largely controlled by hormones, they believe that in humans nonhormonal factors are of greatest importance in determining sexual behavior. Indeed, when one considers the variation in sexual behavior not only across cultures but within them as well, one is tempted to agree with social learning theorists. As Margaret Mead (1935) has famously demonstrated, there are marked differences among cultures in the activities and characteristics assigned to the sexes and the degrees of differentiation

between males and females. For instance, in one of the tribes she studied, the Tchambuli, the roles of males and females were the reverse of those typically found in our own culture. The phenomenon of socially acquired sex roles has been put in many different frames. According to D'Andrade (1966), sex roles grew out of the need for a viable division of labor and have since become institutionalized statuses. Parsons (1955) states that the allocation of sex roles is based on the practical value of the biological attributes of the sexes. A fairly recent view contends that the patterning of sex roles begins with a child's cognition of his body, the physical beings around him, and the cultural use of sex categories (Kohlberg, 1966). The most straightforward approach simply states that the differences in sex roles are attributable to socialization processes (Rosenberg, 1973 and Staples, 1973).

These viewpoints have been dichotomized for the sake of elucidating the issues. It would be unfair not to say that each approach recognizes the validity of the other and the real debate is over the relative importance of the forces that contribute to gender development. Recent theoretical formulations have taken a more sophisticated stance, using an interaction framework.

In the theory of psychosexual differentiation, it is now outmoded to juxtapose nature versus nurture, the genetic versus the environmental, the innate versus the acquired, the biological versus the psychological, or the instinctive versus the learned. Modern genetic theory avoids these antiquated dichotomies, and postulates a genetic norm of reaction, which for its proper expression, requires phyletically prescribed

environmental boundaries. If these boundaries are either too constricted, or too diffuse, then the environment is lethal, and the genetic code cannot express itself, for the cells carrying it are nonviable (Money and Ehrhardt, 1972, p. 1).

Thus, these theories state, in general, that we are predisposed at birth toward masculinity or femininity and this foundation is overlaid by environmental influences (Diamond, 1965; Stoller, 1968; and Money, 1970). We have come practically full circle in our effort to pin down the important factors in sex role development. Each approach has proven itself in its own realm and yet neither one can stand by itself. The interaction theorists try to resolve the issue with an obvious compromise that really does not add to our knowledge. At this time we do not know to what extent behavioral differentiation between the sexes is a function of biological properties or different childrearing practices (Sears, 1965). Nor do we completely understand how these forces interact in the case of specific behaviors.

#### Parental Identification and Sex Role Learning

An integral part of social learning theory is concerned with the process of identification. Does a child need to identify with the same-sex parent in order to affect an appropriate sex identity? Is identification with the culturally prescribed sex role sufficient and/or necessary? Is identification with the parent of the opposite sex accompanied by cross-sex identification in general? There are various theories explaining the processes of parental iden-

tification and sex-role identification.

A well-known longitudinal study examining the stability of sex-related behaviors concluded that "The individual's desire to mold his overt behavior in concordance with the culture's definition of sex-appropriate responses is a major determinant of the patterns of continuity and discontinuity in his development (Kagan and Moss, 1962, p. 269)." In other words, if a childhood behavior is in agreement with the sex role standards it is likely to be predictive of similar adult behaviors. If, however, the behavior does not agree with the standards, then it is likely to find its expression in more acceptable substitute behaviors. This finding has not gone unsupported. Rabban (1950) and Ward (1972) found differences between social classes in the development of sex-role patterns, thus supporting the notion that such behavior is under some cultural influence.

David Lynn (1966) has formulated a list of hypotheses based on his own research and that of others into parental and sex role identification. According to Lynn, children of both sexes initially identify with the mother. Thus, for the girl sex role development begins with mother identification and proceeds along these lines. The process for males is not as straightforward. Eventually the young boy learns to switch from mother identification to identification with a culturally defined masculine role (Lynn, 1966 and Ward, 1973). Thus, the male does not learn sex role development through father identification but rather through a gradual

learning of what behaviors are or are not acceptable for him. Sex role development would then involve different learning processes for both sexes. Lynn postulates that successful sex role identification does not go hand in hand with same-sex parent identification and vice versa. Males have greater difficulty achieving same-sex parent identification than females and they are more likely to fail to make a complete same-sex identification. Cohen (1973) agrees that the development of sex role related aspects of life style is more problematic for males than females.

A somewhat different theoretical orientation (Johnson, 1963) holds that fathers differentiate their own sex role behavior toward boys and girls more than mothers do. Thus, it is identification with the father that is crucial in affecting an appropriate sexual identity for both sexes. The female learns her role by internalizing a reciprocal role relationship with her father. Several studies can be cited that lend credence to Johnson's notion that the father plays the most important part in the child's acquisition of the appropriate sex role. Rosenberg and Sutton-Smith's study of family interaction effects (1968) suggests that fathers play a more critical role in the development of children's sex role preference than mothers. In another study, enhanced masculinity in sons and daughters was found to be linked to identification with an instrumental father (Heilbrun, 1965). Sopchak (1952) also found that failure to identify with the father was more closely related to abnor-



mality in men and women than was failure to identify with the mother. Studies have illustrated greater maladjustment in males who identified with mothers or grew up without fathers (Bieber et al., 1962 and Biller, 1971). Or, as identification shifts to the use of a less masculine father, the probability of disruptive behavior problems in males increases (Heilbrun and Fromme, 1965).

The most straightforward theory states that the child learns the appropriate sex role by identifying with the same-sex parent (Kagan, 1964). According to Mowrer (1950), normal persons tend to identify with the parent of the same sex and neurotic persons tend to show a confused sexual identification. For women it was found that low identification with one's mother was related to low ego strength while high maternal identification was associated with strong ego identity (Dignan, 1965). Lazowich (1955) goes on to say that identification with the parent of the opposite sex is not necessarily linked to neuroticism, as not all behavior is sex-typed. A study by Reiter (1950) found, in fact, that cross-sexed identification is common among college females.

It appears that the process of parental and sex role identification is quite complex and any conclusive theory needs to consider a large number of possibly relevant variables. There has been much research carried out on this subject but our knowledge of the actual processes is piecemeal. The formulation of theories concerning these processes,

such as those of Lynn (1966) and Johnson (1963), will be helpful in directing research efforts.

#### Anxiety Level Differences

When scores on various anxiety scales are examined it is generally found for children and adults that females score higher than males (Goodstein and Goldberger, 1955; Castenada et al., 1956; Sinick, 1956; Rosenblum and Callahan, 1958; Sarnoff et al., 1958; Sarason et al., 1958b; Sarason et al., 1960; Brim and Glass, 1962; and Sarason, 1963). Some studies have reported no significant differences in anxiety levels between the sexes (Taylor, 1953; Bendig, 1954; Lazowich, 1955; Bendig, 1960; and Wrightsman, 1962) but there is certainly evidence lacking for the case that men have higher anxiety scores. Reasons for this apparent difference have not been investigated to any great extent. A factor analysis study concluded that the tendency for women to score higher than men in anxiety is at least partly due to differential sex role expectations in response to the items (Jahnke et al., 1964). Phillips (1966), in an attempt to check the hypothesis that defensiveness accounted for the sex differences in anxiety, came up with results that supported an acquiescence rationale better than the original defensiveness rationale. The most popular explanation posits a cultural influence whereby men are urged to suppress anxiety and fears and women are given more freedom to express such emotions (Sarason et al., 1958a; Sarason et

el., 1958b; Sarnoff et al., 1958; Sarason, 1963; Kagan, 1964; and Manesovitz, 1965).

It seems to be the case that anxiety has differential effects on the sexes. There is evidence that anxiety affects the performance of females negatively under all conditions, while it is likely to increase the achievement motivation of males (Garai and Scheinfeld, 1968). Increased anxiety causes lower achievement among girls and higher achievement among boys (Phillips, 1962). Furthermore, women with high test anxiety are more handicapped in problem solving than are men at the same level (Russell and Sarason, 1965). In a critical review of research findings to date, Garai (1970, p. 126) states that "...women's anxiety tends to lower their level of performance in problem solving and intellectual activities, whereas the anxiety of males was usually found to be lower than that of females and serving as an incentive rather than as an impediment to successful task solution." L'abate (1960) found that girls who were anxious were also more dependent and maladjusted, whereas no positive correlations were found between anxiety and various measures of adjustment for boys. It is also reported that girls with high anxiety had higher achievement drives but no such correlation was found for boys (Sarason et al., 1958a). Thus, anxiety seems to be more closely linked to personality variables such as achievement drive, measures of maladjustment, and problem solving abilities in females than in males. Anxiety also has a more debilitating effect on the female.



Masculinity-Femininity Studies

Several researchers have examined sex role preferences and attitudes toward the masculine and feminine roles. It has generally been the case among children that boys have a greater preference for the masculine role than girls have for the feminine role (Brown, 1958; Hartup and Zook, 1960; Hall and Keith, 1964; Ward, 1968; and Ward, 1973). DeLucia (1963), using the toy preference test, found that both boys and girls preferred the male role. The tendency for the male role to be preferred may be understandable when one considers our social attitudes toward these sex roles. The existence of sex role stereotypes whereby men and women are attributed different characteristics solely on the basis of their sex is well documented (Seward, 1946; Fernberger, 1948; Anastasi and Folley, 1949; Komarovsky, 1950; McKee and Sherriffs, 1949; Wylie, 1961; and Rosencrantz, et al., 1968). The tendency of these sex role stereotypes to ascribe greater social desirability to male traits than female traits is also well established (Kitay, 1940; White, 1950; Sherriffs and Jarrett, 1953; McKee and Sherriffs, 1959; and Broverman et al., 1972). Interestingly enough, one study found that clinicians have different concepts of health for men and women and that these differences are in line with those of sex role stereotypes in general (Broverman et al., 1970). All this evidence points out a certain favoritism for the masculine role. Paradoxically, it has been noted that more men adopt the feminine role than

do women the masculine role (Kinsey et al., 1953 and Linton, 1956). The evidence suggests, however, that this phenomenon is not due to greater preference by men for the feminine role. It is possible that it is more difficult for women to assume the masculine role because of their own functional disabilities or because of the higher status of the male role (Linton, 1956). Or the phenomenon may be attributable to the fact that for males the process of sex role development seems to be more complicated than it is for females (Lynn, 1966).

There is some suggestion that sex roles and attitudes toward them are in a state of transition. Brown (1958) refers to the broadening in definitions of both the male and female roles and the increasing overlap between these roles. Seward (1956) states that there is more freedom for the individual now and fewer restrictions governing sex-typed behaviors. A study contrasting present day game preferences with those of a 1926 study concluded that the feminine self-concept is becoming more masculinized (Rosenberg and Sutton-Smith, 1960). These generalizations have held for individual cases, also. It was found in one study that disapproval of traditional sex-determined role standards was related to liberalism (Ellis and Bantler, 1973). Gump (1972) found women with a more masculine orientation (more purposive and resourceful) to be less traditional in their sex role orientation.

The question closest to this research asks if there

is any relationship between sex role identity and degree of adjustment or amount of anxiety. There are those that contend that adjustment in the individual is accompanied by a sex role identity congruent with one's sex. For example, in two studies, highly masculine boys had more positive self-concepts and greater self-confidence than less masculine boys and the highly masculine group exceeded all other groups in overall adjustment (Mowrer, 1950 and Mussen, 1961). It has also been shown that male adolescents whose behaviors tend to conform to cultural stereotypes of masculinity show higher perceived role consistency than less masculine males (Heilbrun, 1964). Other researchers dealing with parental identification found that the psychologically more adjustive pattern for boys is identification with a more masculine father (Heilbrun and Fromme, 1965) and highly masculine boys tend to portray their relationships with their fathers as positive and rewarding (Mussen, 1961). Mowrer (1950) holds that normal persons tend to identify with the parent of the same sex while neurotics tend to show a confused sexual identification. Maladjusted females have been shown in one study to be characterized by a renunciation of their feminine component (Brown and Marks, 1969). A study of schizophrenic patients found that those who conformed to the sex-appropriate stereotypes of masculinity and femininity responded better in therapy (Distler et al., 1964). The theory of congruence of sex role identity as it relates to adjustment is expressed this way by Garai (1970, p. 131):

With men tending toward greater activity, dominance, aggression, achievement orientation, and work proficiency, a breakdown in their mental health is likely to lead to the adoption of the more feminine pattern of passivity, withdrawal, submissiveness, and retreat from exposure to threat and danger... Women, on the other hand, tend to move toward increased activity and mobility and are more likely to resort to the adoption of masculine patterns of aggression and hyperactivity as a result of mental illness.

Another theory that has not gone unsupported holds that extreme femininity in both sexes is related to maladjustment or higher anxiety level. In a study of children, game choices of highly anxious boys were found to be more feminine and immature than those of low anxious boys (Sutton-Smith and Rosenberg, 1960). It seems to be the case when masculinity-femininity is correlated with anxiety that more feminine persons of both sexes are more anxious (Cosentino and Heilbrun, 1964 and Gall, 1969). For girls, extremely high anxiety was associated with high femininity (Webb, 1963). Heilbrun (1968a) advances the theory that the dual capacity for both expressive (typically feminine) and instrumental (typically masculine) behavior facilitates the adjustment of women - at least in the college environment. He also found, in a sample of college women, that maladjusted females were more lacking in instrumental behavior than were adjusted females (Heilbrun, 1968b). Another study found that for females identification with a low feminine mother was associated with the best adjustment while poorer adjustment went along with use of a more feminine maternal model (Heilbrun and Fromme, 1965).

Of late, the notion that the traditional feminine role

is of low status value and may even be nonadaptive has received much popularity. Block (1973) notes that our culturally determined socialization process broadens the sex role definitions and behavioral options of males while limiting those of females. In a review of literature on sex differences, Bardwick (1971, p. 108) concludes that "The early stress on boys will either tend to result in independence, self-confidence, and a strong sense of self-identity, or it will tend to produce pathology. The route to maturity for girls has far fewer dangers, but the attainment of an independent sense of self-esteem is less likely." After studying autobiographical documents, Komarovsky (1946) found that most women are confused about their identities as they face mutually exclusive expectations from different sources. In the words of the feminist Betty Friedan (1963, p. 77):

It is my thesis that the core of the problem for women is not sexual but a problem of identity - a stunting or evasion of growth that is perpetuated by the feminine mystique. It is my thesis that as the Victorian culture did not permit women to accept or gratify their basic sexual needs, our culture does not permit women to accept or gratify their basic need to grow and fulfill their potentialities as human beings, a need which is not solely defined by their sexual role.

Most of these statements are of a subjective nature. More controlled studies have found that women express greater feelings of helplessness, timidity, and fearfulness than men (Bennett and Cohen, 1959) and that women outnumber men in terms of in- and out-patient psychiatric care (Tandau, 1973). The Broverman study (Broverman et al., 1970) found



that clinicians were less likely to attribute traits characteristic of the healthy adult to a healthy woman than to a healthy man.

An interesting observation has it that our experimentation and the measures we use are biased in favor of males. One study surveyed 298 empirical studies and found an overwhelming use of males as compared with female subjects. Guttman (1965) examines the construct ego strength and contends that it has more relevance for men than for women and its use may lead to inaccurate judgments of female ego functioning. In a similar study, it was found that the differences between males and females on the ego strength scale of the Minnesota Multiphasic Personality Inventory cancel out when items relating to sex role identification are omitted (Holmes, 1967). It would be no exaggeration to state that most research and work on construction of measures is carried out by men. So, to carry the analysis one step further, it could be posited that these pursuits are male-oriented and speak from the masculine point of view. In this process, it is masculine values, masculine characteristics that have received emphasis and taken on popularity for the whole population.

### Conclusions

The women's liberation movement is the woman's expression of the injustice she feels has been her lot. She has come to feel "devalued" because she has not been able to pursue those goals that have become popular via masculine expres-

sion. For example, one important masculine value holds that a person needs to discover what type of work he can find fulfillment in so that he can consider himself an individual with a purpose and one with a service to render others. Now, the woman feels she has not had the freedom to fulfill herself in this respect because she has been trapped by a husband, home, and children. The woman does not consider the traditional feminine role (the feminine mystique) a source of fulfillment because she has come to value masculine goals. She also believes that the differences between the sexes are learned. In other words, she has been shaped to be satisfied with staying at home. This belief feeds the fire of her anger, for she feels she has been forced into a position of secondary status by the male world. Out of this first movement, women's liberation, has grown the more sophisticated idea of people's liberation. According to this view, all individuals, men and women, are restricted by the sex roles they have been forced into during their upbringing. Breaking out of sex role expectations will result in greater freedom for both sexes.

It is my thesis that we are confused about the functional value of the differentiation between the sexes. It is popular to believe that the sexes are equal in all but the most obvious aspects. Yet there is much research illustrating differences between the sexes in many domains - possible differences in the brain, the presence of different hormones and hormonal actions, differences in the processes

of parental identification and learning of sex roles, and differences in anxiety levels and the effects of anxiety upon performance. Due to popularization by males of the masculine role and the values that are a part of it, women have come to envy the status men have assigned to themselves.



### Purpose and Objectives

The major objective of this study was to determine if there is any difference between males and females or between sex role identification groups (masculine, middle, and feminine categories) on anxiety scales. Possible interactions between the three categories sex, sex role identification, or anxiety level and the variables openness versus closedness, liberalism versus conservatism, and cross-sex versus same-sex parent identification were also investigated.

Hypotheses formulated on the basis of the preceding objectives were:

#### Main hypotheses:

- 1) There will be no significant difference between males and females on anxiety scales (IPAT Anxiety Questionnaire and Manifest Anxiety Scales).
- 2) There will be no significant difference between sex role identification groups (masculine, middle, and feminine) on anxiety scales.
- 3) There will be no significant interaction effect between sex and/or sex role identification on anxiety scales.

#### Subhypotheses:

- 4) There will be no significant difference between males and females on openness-closedness.
- 5) There will be no significant difference between sex role identification groups on openness-closedness.

6) There will be no significant difference between anxiety trichotomies (high, medium, and low) on openness-closedness.

7) There will be no significant interaction effect between sex and/or sex role identification on openness-closedness.

8) There will be no significant interaction effect between sex and/or anxiety on openness-closedness.

9) There will be no significant interaction effect between sex role identification and/or anxiety on openness-closedness.

10) There will be no significant interaction effect between sex, sex role identification, and/or anxiety on openness-closedness.

11) There will be no significant difference between males and females on liberalism-conservatism.

12) There will be no significant difference between sex role identification groups on liberalism-conservatism.

13) There will be no significant difference between anxiety trichotomies (high, medium, and low) on liberalism-conservatism.

14) There will be no significant interaction effect between sex and/or sex role identification on liberalism-conservatism.

15) There will be no significant interaction effect between sex and/or anxiety on liberalism-conservatism.

16) There will be no significant interaction effect

between sex role identification and/or anxiety on liberalism-conservatism.

17) There will be no significant interaction effect between sex, sex role identification, and/or anxiety on liberalism-conservatism.

18) There will be no significant difference between males and females on cross-sex - same-sex parent identification.

19) There will be no significant difference between sex role identification groups on cross-sex - same-sex parent identification.

20) There will be no significant difference between anxiety trichotomies on cross-sex - same-sex parent identification.

21) There will be no significant interaction effect between sex and/or sex role identification on cross-sex - same-sex parent identification.

22) There will be no significant interaction effect between sex and/or anxiety on cross-sex - same-sex parent identification.

23) There will be no significant interaction effect between sex role identification and/or anxiety on cross-sex - same-sex parent identification.

24) There will be no significant interaction effect between sex, sex role identification, and/or anxiety on cross-sex - same-sex parent identification.

## Research Design

### Sample

Subjects for this study were 108 females and 71 males enrolled in an Introductory Sociology class at Utah State University, fall quarter, 1974. The majority of students were freshmen or sophomores.

### Measures

This study employed Gough's Femininity Scale, Cattell's IPAT Anxiety Scale Questionnaire, Taylor's Manifest Anxiety Scale, and a questionnaire devised for this particular study (see Appendix A).

Gough (1952) developed the Femininity Scale with the intention of designing an instrument which would be brief, easy to administer, relatively subtle and unthreatening in content, and which would differentiate men from women and sexual deviates from normals. Fifty-eight items were selected from an original pool of 500 according to their content and ability to differentiate between the sexes. The femininity scale of the CPI is a subset of these items. The scale was validated on samples of high school and college students and the separation of males and females was found to be fairly adequate (differences in overlap are signifi-

cant beyond the one per cent level of confidence). The discriminating power of the test in cross-validating samples was found to be nearly equivalent to its effectiveness in the original groups. The scale was also found to differentiate to a significant degree between a group of male homosexuals and a control group.

The IPAT Anxiety Scale Questionnaire was devised after much research to meet the need for a brief, accurate, and easily administered and scored indicator of free anxiety level. It consists of forty items which can be grouped in terms of five anxiety components. The author claims it is very satisfactory for supplementary clinical diagnosis.

Validity coefficients for the total scale, obtained by three different methods, range from .85 to .90. Test-retest reliability coefficients for one-week and two-week intervals are .93 and .85 respectively. Internal consistency reliabilities for the five anxiety components are fairly low, ranging from .26 to .60. Norms, based upon fairly large samples, are given for different populations and reported separately for males and females.

Because of the low reliabilities of the component scores their use is not recommended. However, the total score is fairly valid and has high reliability. The test's brevity and accuracy warrant its use in scanning large populations. Thus, this test suits the purpose of the present research project rather conveniently.

The Manifest Anxiety Scale was constructed by Taylor

(1953) from approximately 200 items of the Minnesota Multiphasic Personality Inventory. These items were submitted to judges who were asked to designate those items indicative of manifest anxiety. After several modifications fifty items came to compose the test. The scale was administered to 1971 college students, 683 airmen, 201 university night-school students, and 103 psychiatric patients. Information on the frequency distributions for these groups is provided (Taylor, 1953). Because the difference between means for men and women was not statistically significant, both sexes have been included in a single distribution. Test-retest reliability coefficients are .89 after three weeks and .82 after five months. Extensive data on validity are not available but distributions of scores for the psychiatric patients and the normal group were found to be markedly different. Thus, there appears to be some relationship between the anxiety scale scores and clinical observations of manifest anxiety.

In this study, a Pearson product-moment correlation coefficient of .81 was obtained for the IPAT Anxiety Scale Questionnaire and the Manifest Anxiety Scale. When a correction for attenuation was performed, a true correlation of .93 was obtained. These high correlations and the results of the study in general indicate that these two tests are measuring essentially the same feature.

The dimensions covered by the questionnaire include openness versus closedness, liberalism versus conservatism,



and cross-sex versus same-sex parent identification. Two scales from Cattell's Sixteen Personality Factor Test made up part of the questionnaire. The 16 PF, which was designed using factor analytic techniques, has been criticized by Rorer (1972) for having scales of "indeterminate origin and unknown significance." The openness versus closedness dimension was made up of the 16 PF's factor A (reserved versus outgoing). The manual reports test-retest reliability of this factor is .81 after six days (form A) and .85 after two months (form A and B). A significant negative correlation between the 16 PF's factor A and the MMPI's Social introversion has been found to exist (Karson and Pool, 1957 and Laforge, 1962). The liberalism versus conservatism dimension consisted of the 16 PF's factor Q<sub>1</sub> (conservative versus experimenting). Test-retest reliability was .73 after six days (form A) and .83 after two months (form A and B). In a study of interrelationships between personality inventories, a correlation of .48 was obtained for the 16 PF's factor Q<sub>1</sub> and the second-order factor defined as cool rationality (Hundleby and Connor, 1968). Scales were taken from form A only. The cross-sex versus same-sex parent identification scale was devised by the researcher. No reliability or validity data is available for it. For an inspection of face validity, see Appendix A, questions number 2,5,8,11,14,and 17.

### Procedure

Data for this research were collected fall quarter, 1974. The instructor of the class to whom the four test measures were administered was not informed of the nature of the experiment. He was asked only to inform the class that they have been asked to help out in a research project. Test instructions were presented according to standard procedures and students were told to fill out the tests anonymously. Students first took the Femininity Scale, next the IPAT Anxiety Scale, then the Manifest Anxiety Scale, and last the questionnaire. Tests were presented in order of importance. That is, those pertaining to the main hypotheses were administered first. The fact that the results obtained in this study agree with those of previous studies argues against the presence of an ordering effect due to the manner in which the tests were presented.

### Statistical Analysis

Males and females were classified according to their scores on the Femininity Scale. The approximate top and bottom twenty-five per cent were the feminine and masculine groups, the remaining fifty per cent were classed as the middle group. Thus, for each sex there were three different sex role identification groupings. The mean score obtained for males is comparable to that found in other studies but the mean for females is slightly higher than reported elsewhere.



Whereas Gough (1952) obtained a mean of 33.2 and Vaught (1965) a mean of 33.56 for college females, this study obtained a mean of 35.31.

A two-way analysis of variance was performed with sex role identification and sex as independent variables and the IPAT Anxiety Scale Questionnaire and Taylor's Manifest Anxiety Scale as the dependent variables.

On the basis of combined anxiety scores, three groups were formed and defined as high, medium, and low anxiety. A three-way analysis of variance had for its independent variables sex, sex role identification, and anxiety level. The dependent variables were openness-closedness, liberalism-conservatism, and cross-sex versus same-sex parent identification.

A null hypothesis was rejected if its statistical probability exceeded the .05 level of confidence.

When significant F values were obtained for the analyses of variance, Scheffé tests were employed to pinpoint significant differences between groups.

### Results

In order to test the three main hypotheses (Is there a significant difference between males and females on anxiety scales?, Is there a significant difference between sex role identification groups on anxiety scales?, and Is there a significant interaction effect between sex and/or sex role identification on anxiety scales?) a two-way analysis of variance was computed in which sex and sex role identification were independent variables. These results are shown in Tables 1 and 2.

Table 1

Two-way Analysis of Variance with Sex and Sex Role Identification as Independent Variables and IPAT Anxiety Scale Questionnaire as the Dependent Variable.

Source	df	m.s.	F	Probability
Total	175	145.66		
Sex	1	6.03	.04	p>.05
Sex Role Id.	2	561.15	3.92	p<.05
Sex X Sex Role Id.	2	7.35	.05	p>.05
Error	170	143.29		

Table 2

Two-way Analysis of Variance with Sex and Sex Role Identification as Independent Variables and Taylor's Manifest Anxiety Scale as the Dependent Variable.

Source	df	m.s.	F	Probability
Total	175	70.56		
Sex	1	86.94	1.30	$p > .05$
Sex Role Id.	2	438.90	6.58	$p < .01$
Sex X Sex Role Id.	2	9.15	.14	$p > .05$
Error	170	66.75		

Thus, in the case of both anxiety scales, a significant difference is found between sex role identification groups. Since there are three categories for sex role identification, Scheffé tests were computed to pinpoint the between group differences. Results were consistent across both anxiety measures. That is, feminine persons of both sexes had significantly higher anxiety scores than masculine persons ( $p < .05$ ) but there were no significant differences between either the middle and masculine groups or the middle and feminine groups.

In order to test the subhypotheses, three-way analyses of variance were performed. In addition to the independent variables sex and sex role identification, an anxiety trichotomy was formed on the basis of combined anxiety scores. The dependent variables are the questionnaire

scales: openness versus closedness, liberalism versus conservatism, and cross-sex versus same-sex parent identification. These results are shown in Tables 3, 4, 5, and 6.

Table 3

Three-way Analysis of Variance with Sex, Sex Role Identification, and Anxiety as Independent Variables, and Openness Versus Closedness as the Dependent Variable.

Source	df	m.s.	F	Probability
Total	175	8.29		
Sex	1	45.35	5.99	p<.05
Sex Role Id.	2	38.15	5.04	p<.01
Anxiety	2	9.10	1.20	p>.05
Sex X Sex Role Id.	2	11.36	1.50	p>.05
Sex X Anxiety	2	4.64	.61	p>.05
Sex Role Id. X Anxiety	4	11.45	1.51	p>.05
Sex X Sex Role Id. X Anxiety	4	1.63	.22	p>.05
Error	158	7.57		

The findings thus indicate that females score significantly higher on openness than do males. Scheffé tests on the sex role identification groups revealed no significant differences between the middle and feminine groups. The masculine group was significantly less open than the middle and feminine groups ( $p<.05$ ).

Table 4

Three-way Analysis of Variance with Sex, Sex Role Identification, and Anxiety as Independent Variables and Liberalism versus Conservatism as the Dependent Variable.

Source	df	m.s.	F	Probability
Total	175	6.58		
Sex	1	32.35	5.01	p<.05
Sex Role Id.	2	9.59	1.48	p>.05
Anxiety	2	13.24	2.05	p>.05
Sex X Sex Role Id.	2	3.68	.57	p>.05
Sex X Anxiety	2	3.29	.51	p>.05
Sex Role Id. X Anxiety	4	4.74	.73	p>.05
Sex X Sex Role Id. X Anxiety	4	1.36	.21	p>.05
Error	158	6.46		

The only significant finding was a difference between the sexes. Males scored higher on liberalism than did females.

Table 5

Three-way Analysis of Variance with Sex, Sex Role Identification, and Anxiety as Independent Variables and Cross-sex Versus Same-Sex Parent Identification as the Dependent Variable.

Source	df	m.s.	F	Probability
Total	175	6.11		
Sex	1	.27	.05	p>.05
Sex Role Id.	2	16.57	3.01	p>.05
Anxiety	2	2.82	.51	p>.05
Sex X Sex Role Id.	2	25.65	4.66	p<.05
Sex X Anxiety	2	6.27	1.14	p>.05
Sex Role Id. X Anxiety	4	11.30	2.05	p>.05
Sex X Sex Role Id. X Anxiety	4	8.64	1.57	p>.05
Error	158	5.51		

There is a significant interaction effect between sex and sex role identification on cross-sex versus same-sex parent identification. Table 6 shows the obtained adjusted means.

As can be seen in Table 6, masculine males are the most same-sex parent identified and feminine males the least. Females in the middle grouping are the most same-sex parent identified and females in the masculine group are the least.



Table 6

Adjusted Means for Cross-sex Versus Same-sex Parent  
Identification According to Sex and Sex Role Identification.

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	Masculine	Middle	Feminine	Totals
Males	7.47	6.98	6.21	6.89
Females	5.85	8.14	6.94	6.98
Totals	6.66	7.56	6.57	

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## Discussion

### Evaluation of Findings

The majority of studies on anxiety level differences have found females to be higher, but this study found no significant difference between the sexes on either the IPAT Anxiety Scale Questionnaire or Taylor's Manifest Anxiety Scale.

There was, however, a definite trend in anxiety level differences between masculine and feminine persons of both sexes. Feminine persons were significantly more anxious than masculine persons on the IPAT Anxiety Scale Questionnaire ( $p < .05$ ) and Taylor's Manifest Anxiety Scale ( $p < .01$ ). This is in agreement with the theory that extreme femininity in both sexes is associated with maladjustment or higher anxiety level (Cosentino and Heilbrun, 1964 and Gall, 1969). There are two possible explanations for this effect. It is conceivable that the present cultural emphasis on assertive, aggressive behavior has had its effect even upon the individual. That is, it may be maladaptive to possess characteristically feminine traits, especially in the setting from which this study took its sample, the university.

The other possible explanation ties in with the finding obtained on the openness versus closedness scale. It

was found that females scored higher on openness than males and that masculine persons of both sexes were less open than those in the middle or feminine sex role identification categories. Another explanation for higher anxiety in feminine persons might posit that they do not necessarily experience more anxiety but that they are more willing to admit their experience of it. That is, they may be more open in expressing their anxiety than are masculine persons. This explanation fits the cultural influence model whereby men are urged to suppress anxiety and fears and women are given more freedom to express such emotions (Sarason et al., 1958a; Sarason et al., 1958b; Sarnoff et al., 1958; Sarason, 1963; Kagan, 1964; and Manesovitz, 1965).

Males were found to be more liberal than females but there were no differences between sex role identification groups. It was conjectured that liberal persons who were cross-sex identified might be less anxious than conservatives who were cross-sex identified but there was no evidence to support this notion.

A significant interaction effect between sex and sex role identification was obtained on the cross-sex versus same-sex parent identification scale. The findings for males follow a logical pattern. That is, masculine males are the most same-sex parent identified, middle males the next, and feminine males the least. The pattern for females is not as logical. Females in the middle sex role identification category are the most same-sex parent identified,

with the masculine and feminine groups having essentially the same mean score. These findings lend some support to Johnson's theory (1963), which holds that identification with the father is crucial in affecting an appropriate sexual identity for both sexes.

### Limitations

The present research was limited by use of a questionnaire for which validity is not ascertained. Validity of the 16 PF scales employed was discussed in the Measures section of this paper. Construct validity of the 16 PF's scales is questionable because of the factor analytic techniques employed in the construction. Studies of validity of the 16 PF have, however, demonstrated concurrent validity of the scales employed in this study (see p. 28). The cross-sex versus same-sex parent identification scale was composed by the researcher. No preliminary gathering of reliability or validity data was carried out. Results employing these scales must thus be viewed in light of these limitations.

It must also be considered that the sample for this research was a group of college students. Since no systematic sampling procedure was employed, these students cannot be considered representative of the college population as a whole. For convenience, an Introductory Sociology class made up this study's sample.

Scores on the Femininity Scale indicated that the

women in this study were slightly more feminine than other groups for which normative data are available (see pp. 29-30). In all likelihood, shifting the sex role identification grouping for females so that it would more closely correspond with other norms would only result in strengthening the obtained findings. It is concluded, therefore, that this effect is not a serious problem because sex role identification groups were trichotomized and the significant results obtained were consistent across these categories and agree with previous findings.

#### Recommendations for Further Research

Research to date in general seems to point to higher anxiety levels in females and more feminine persons of both sexes. It is recommended that research be undertaken to help explain this phenomenon.

It is recommended that research test out the hypothesis that females and feminine persons receive higher anxiety scores because they are more open in their expression of anxiety.

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Appendixes

Appendix A

Questionnaire

Interest Questionnaire

- | A | B | C |  |
|---|---|---|--|
| - | - | - | 1. I am considered a liberal "dreamer" of new ways rather than a practical follower of well-tried ways.<br>a) true b) uncertain c) false                 |
| - | - | - | 2. Do you feel your are the type of (man, woman) your (father, mother) wanted you to be?<br>a) to a large extent b) in some ways c) cannot be determined |
| - | - | - | 3. It would be good for everyone if vacations (holidays) were longer and everyone had to take them.<br>a) agree b) uncertain c) disagree                 |
| - | - | - | 4. I find that my interest in people and amusement tend to change fairly rapidly.<br>a) yes b) in between c) no  |
| - | - | - | 5. As far as behaviors and attitudes are concerned, do you feel you are more like your<br>a) mother b) cannot be determined c) father?                   |
| - | - | - | 6. With the same hours and pay, I would prefer the life of a a) carpenter or cook b) uncertain c) waiter in a good restaruant.                           |
| - | - | - | 7. I feel a strong need for someone to lean on in times of sadness.<br>a) yes b) in between c) no  |
| - | - | - | 8. When I was a child I spent more time with<br>a) mother than father b) uncertain c) father than mother.  |
| - | - | - | 9. With acquaintances I prefer a) to keep to matter-of-fact impersonal things b) in between c) to chat about people and their feelings.                  |
| - | - | - | 10. I occasionally get puzzled when looking in a mirror as to the meaning of right and left.<br>a) true b) uncertain c) false                            |
| - | - | - | 11. As I am now, my _____ is prouder of me than my _____.<br>a) mother, father b) cannot be determined c) father, mother                                 |
| - | - | - | 12. I would like to be a<br>a) forester b) uncertain c) a grammar or high school teacher.  |

- A B C
- - - 13. As a teenager, if I differed in opinion from my parents, I usually  
a) kept my own opinion b) in between c) accepted their authority.
- - - 14. I get along best with my  
a) mother b) cannot be determined c) father.
- - - 15. For special holidays and birthdays I  
a) like to give personal presents b) uncertain  
c) feel that buying presents is a bit of a nuisance.
- - - 16. Because it is not always possible to get things done by gradual reasonable methods, it is sometimes necessary to use force.  
a) true b) in between c) false
- - - 17. I have more in common with my  
a) mother than father b) uncertain c) father than mother.
- - - 18. In starting a useful invention, I would prefer  
a) working on it in the laboratory b) uncertain  
c) selling it to people.
- - - 19. On a free evening, I like to  
a) see an historical film about past adventures  
b) uncertain c) read science fiction or an essay on "The Future of Science."
- - - 20. I would prefer to work in a business  
a) talking to customer b) in between c) keeping office accounts and records.
- - - 21. I think the spread of birth control is essential to solving the world's economic and peace problems.  
a) yes b) uncertain c) no
- - - 22. If the earnings were the same, I would rather be  
a) a lawyer b) uncertain c) a navigator or pilot.
- - - 23. I think society should let reason lead it to new customs and throw aside old habits or mere traditions.  
a) yes b) in between c) no
- - - 24. I would prefer the life of  
a) an artist b) uncertain c) a secretary running a social club.
- - - 25. My viewpoints change in an uncertain way because I trust my feelings more than logical reasoning.  
a) true b) to some extent c) false
- - - 26. If asked to work with a charity drive, I would  
a) accept b) uncertain c) politely say I'm too busy.



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