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The relationship of sport involvement and sex role classification of college females

Patricia Eleanor Kieffer
Ithaca College

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THE RELATIONSHIP OF SPORT INVOLVEMENT
AND SEX ROLE CLASSIFICATION
OF COLLEGE FEMALES

by

Patricia Eleanor Kieffer

An Abstract

of a thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Science in the School
of Health, Physical Education
and Recreation at
Ithaca College

September 1979

Thesis Advisor: Dr. Veronica L. Eskridge

ABSTRACT

The relationship of female sport involvement and class based on the BSRI median-split sex role classifications as well as differences in sport involvement and class based on actual BSRI masculinity and femininity scale scores were examined. The Bem Sex Role Inventory and median-split method were utilized to classify subjects as androgynous, masculine, feminine, or undifferentiated. Ithaca College freshmen and senior females (N=104) were administered the self-descriptive BSRI. All subjects were volunteers and were grouped by degree of sport involvement and class. One week following the initial testing, 39 subjects were readministered the BSRI. Acceptable test-retest reliability was determined by the Pearson product-moment correlation method. Chi-square analyses were performed to determine the relationship of sport involvement and class based on each BSRI median-split classification. No relationship was found between sport involvement and the BSRI sex role classifications. The null hypothesis concerning the relationship between class and the sex role classifications was rejected. Significantly more freshmen than seniors were identified as feminine. Bivariate and univariate two-way analyses of variance were utilized to determine differences between sport involvement and class based on the actual masculinity and femininity scale scores of the BSRI. The null hypothesis concerning differences in sport involvement and class based on the masculine scale score of the BSRI was rejected. Univariate analyses of variance were performed on the masculinity scale scores and also the femininity scale scores of the sport involved and sport uninvolved subjects. Sport involved subjects as compared to sport uninvolved subjects had

significantly higher masculinity scores. Discussion was presented with reference to the appropriateness of using the median-split method as compared with the actual masculinity and femininity scale scores of the BSRI in sex role research.

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AND SEX ROLE CLASSIFICATION
OF COLLEGE FEMALES

A Thesis Presented to the Faculty of
the School of Health, Physical
Education and Recreation
Ithaca College

In Partial Fulfillment of the
Requirements for the Degree
Master of Science

by
Patricia Eleanor Kieffer
September 1979

Ithaca College
School of Health, Physical Education and Recreation
Ithaca, New York

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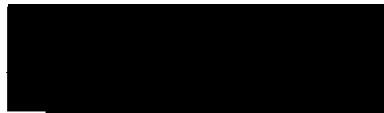
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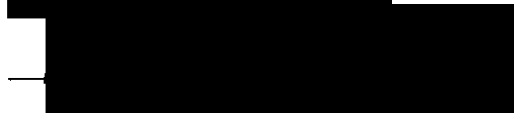
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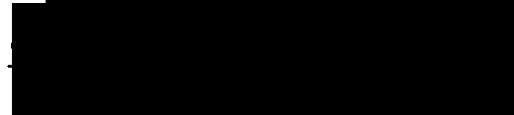
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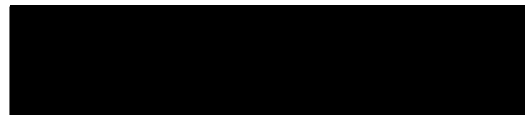
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Chapter 1

INTRODUCTION

Socialization is the process by which an individual learns the cultural attitudes, values, and roles of one's group and thus acquires a unique personality and becomes a member of society. This activity of socialization is called cultural transmission. Cultural transmission is the means by which a society preserves its norms and perpetuates itself. Every society expects its new members to learn the standard rules of conduct. Sex roles, learned by members of society, provide a predetermined conglomeration of acceptable behaviors. Unfortunately, females have been discriminated against by the restrictions that society's concept of femininity entails. Femininity attributes such as dependency, submissiveness, and weakness simply are not conducive to the fullest development of human potential.

Yet, all things change. The concepts of sex-typing and sex roles are not exceptions to the rule. The personal and social aspects of the female in America are currently among the most lively topics in the social sciences. The role of the female is taking on new dimensions. This role change is evident in the realm of sport. Sport is considered a microcosm of society and has been a predominantly masculine domain. Since roles that femininity and sport involvement entail are not consistent, females that are involved in sport may experience some degree of sex role conflict.

There are clear implications from practically every sector of society that the public is no longer willing to accept sexism in sport. In 1972 the Federal government, in response to mounting pressure, passed the

Elementary and Secondary Education Amendment. Title IX of this amendment was designed to secure equal rights for female sport participants. With the contemporary broadening of sex roles, alternative roles are increasingly available and those females who have developed a sense of autonomy and positive self-esteem may be better able to select their roles and enjoy a freedom of choice. Perhaps social change has already advanced to the stage where the properties of sex roles require a social redefinition of consequences of female participation in sport.

Scope of Problem

Empirical research is needed to provide knowledge of the sex role identifications of sport involved females. The Bem Sex Role Inventory (BSRI) (Bem, 1974) is one of several tests used specifically for measuring sex role identification. There are four sex roles that are ascribed to the subjects by self-reported data. These sex role attributes are masculinity, femininity, androgyny, and undifferentiation. Statistical evidence may determine whether the conflict of female sport participation is fading. Perhaps positive consequences exist for females who choose to participate. The sport involved female is faced with the role conflict of how to be successful when the traits that are stereotyped as masculine, such as strength, aggression, self-confidence, leadership, and achievement, are those that are associated with sport involvement. Perhaps females who engage in sport do not lose their femininity, but instead are androgynous. Androgyny is the integration of both high masculine and high feminine characteristics within an individual regardless of gender.

The BSRI was utilized for this research in order to examine class year differences and sport involvement differences of female college students. Subjects (N=104) were equally grouped into four categories: sport involved

freshmen, sport involved seniors, sport uninvolved freshmen, and sport uninvolved seniors. A 2 x 2 design for sport involvement and class was utilized.

The median-split method of the BSRI was employed in order to classify each of the 104 subjects as either masculine, androgynous, feminine, or undifferentiated. Relative occurrences of these sex role classifications within the sport involvement and class groups were determined by chi-square analyses.

There is a problem associated with the median-split method. At present, there is not an established median norm that is used to split and categorize all samples. Medians must be obtained from the actual sample that is being examined. By splitting the sample by its own median, relatively equal numbers result in each of the four classifications.

The same hypotheses that were tested using the median-split BSRI classifications and chi-square analyses were tested again with another statistical method. The same BSRI data were utilized for the second analysis. The subjects were not classified into sex roles by the median-split method. Actual masculinity and femininity scale scores within the BSRI of the 104 subjects served as the variables that were examined. Differences in sport involvement and class were found for masculinity and femininity scale scores by employing a bivariate analysis of variance. A univariate two-way analysis of variance was used for the masculinity score and the femininity score for sport involvement and class.

It was expected that the results obtained from the median-split and subsequent chi-square analyses might differ from the results obtained from the actual masculine and feminine scale scores of the BSRI. Bivariate analysis of variance of sport involvement and class for the masculinity

and femininity scale scores was utilized.

A comparison was made of the results obtained from the median-split and chi-square analyses and the bivariate and univariate two-way analyses of variance of the masculinity and femininity scale scores.

Statement of Problem

This investigation was undertaken in an attempt to determine the relationship of sport involvement and class in the median-split sex role classifications and differences in the actual masculine and feminine scale scores of the Bem Sex Role Inventory. The sex role attributes of 104 freshmen and senior females at Ithaca College were identified from self-reported BSRI data. Differences in the expected and observed distributions of BSRI median-split classifications for sport involvement and class were determined. Bivariate and univariate two-way analyses of variance of the actual masculinity and femininity scale scores were also utilized rather than the median-split BSRI classifications. The same hypotheses were tested for each method of data analysis. A comparison of the results of the chi-square analyses of median-split classifications and the bivariate and univariate two-way analyses of variance on actual masculine and feminine scale scores was made.

Theoretical Hypotheses

Sport is an activity that requires assertive and achievement-oriented behavior. Society has labeled this behavior as "masculine." Females that characterize themselves as feminine may lack flexibility in responding to situations that necessitate assertive and achievement-oriented behavior. Bem and Lenny (1976) have found that feminine females report feeling uncomfortable while performing masculine activities.

It is logical to assume that females that are sport involved are likely

to identify with masculine characteristics and those that are not involved in sport are not likely to identify with masculine characteristics. This study examined the following sport involvement hypotheses. There would be:

1. More sport involved subjects than sport uninvolved subjects classified as androgynous.
2. More sport involved subjects than sport uninvolved subjects classified as masculine.
3. More sport uninvolved subjects than sport involved subjects classified as feminine.
4. More sport uninvolved subjects than sport involved subjects classified as undifferentiated.

Competitive behavior is characteristic of and necessary for survival in a college environment. Living within this achievement-oriented environment is likely to have caused some change within individuals that find adaptation a necessity. Seniors, having functioned for over three years within this environment, are likely to have changed because of the college experience. Seniors are approximately three years older than freshmen and are expected to be more competent, self-reliant, and independent.

It is therefore logical to expect senior females to ascribe more often to masculine characteristics when compared to freshmen females. The following hypotheses were made concerning class year. There would be:

1. More seniors than freshmen categorized as androgynous.
2. More seniors than freshmen categorized as masculine.
3. More freshmen than seniors categorized as feminine.
4. More freshmen than seniors categorized as undifferentiated.

The above hypotheses concerning differences in sex role classification for sport involvement and class were tested by chi-square analyses.

The median-split procedure of the BSRI is used to classify subjects into one of the four sex role categories. Individual masculinity and femininity scale scores are lost in this process. It was thought that the results of the BSRI median-split analyses would differ from the bivariate analysis of variance of actual masculine and feminine scale scores. For this reason, the bivariate analysis of variance and univariate two-way analysis of variance for class and sport involvement were utilized. It was hypothesized that a difference existed for sport involvement and class in the masculine scale and the feminine scale of the BSRI. Seniors and sport involved subjects were expected to possess higher masculinity scale scores than the freshmen and students that were not sport involved. Freshmen and subjects that were sport uninvolved were expected to have higher femininity scale scores.

Assumptions

The following assumptions were made for this investigation:

1. The BSRI self-report measure is representative of actual behavior.
2. Subjects were able to identify with the choices given them on the androgyny measurement test.

Definition of Terms

A brief definition of terms is presented here for the purpose of clarification:

1. Androgyny: The integration of both high masculinity and high femininity characteristics as measured by the BSRI within an individual regardless of gender.
2. Sport Involved: Female students at Ithaca College who report having been a member of at least one varsity intercollegiate athletic

team during every year of enrollment or having engaged in a sport activity at least three times a week during every year of enrollment at Ithaca College.

3. Sport Uninvolved: Female nonphysical education majors at Ithaca College who reported never having been a member of a college, junior college, or high school varsity athletic team and never having engaged in a single sport activity three or more times a week.

Delimitations

The following delimitations served as the perimeter of this study:

1. All of the subjects used in the study were females and volunteer subjects.
2. All of the subjects used in this study were freshmen and senior students at Ithaca College.
3. The Bem Sex Role Inventory was utilized as the tool for measuring androgyny.

Limitations

The generalizability of the results of this investigation may be limited by the characteristics of the population sampled. Subjects were all students of Ithaca College and may represent a high socioeconomic population.

It must be noted that a population median for the BSRI was unavailable. Therefore, the sample median was determined and was used for the median-split process of classification. By using the median obtained from the actual sample, relatively equal numbers of subjects were forced into each of the four sex role categories. The acceptance and rejection of hypotheses concerning differences in sex role classification should be considered in light of this fact.

Chapter 2

REVIEW OF LITERATURE

This investigation examined the relationship of sex role attributes between female sport involved and sport uninvolved college freshmen and seniors. In order to understand the background and context of this problem, a review of relevant literature was necessitated. This chapter was subdivided and will thus be discussed under the subheadings: the androgynous and sex-typed roles, androgyny implications, and the female in the sport environment.

The Androgynous and Sex-Typed Roles

It has only been within the last decade that theorists have taken a quite unique approach in attempting to understand the concepts of sex-typing and sex roles. Traditional formulations of masculinity and femininity surmised a single bipolar dimension. These bipolar theorists defined masculinity and femininity as relatively enduring traits that were considered to be rooted in anatomy, physiology, and early experience, and that served to distinguish males from females in appearance, attitudes, and behavior. According to traditionalists, high masculinity implied low femininity. The presence of feminine characteristics, by definition, excluded the presence of masculine ones. Constantinople (1973), in her critique of the traditional measurement of sex role characteristics, noted that the Masculinity-Femininity (MF) Scale was based on three principles. First, since the item selection was based on the scale's ability to discriminate between the responses of males and females, there was a dependence on sex alone as the criterion for an item's MF relevance.

Second, tests with only two options provided implied that a masculine response excluded femininity and designated masculinity. Last, a single MF score based on the algebraic summation of masculine and feminine responses situated an individual on a single bipolar dimension. A person was classified as being masculine or feminine strictly on the number of responses endorsed.

Several researchers (Bem, 1974; Berzins, Welling, & Wetter, 1978; Spence, Helmreich & Stapp, 1975b) have recently relied on a different set of assumptions. In contrast to the traditionalists, they assume an orthogonal two-dimensional model of masculinity-femininity, a sociocultural definition of sex roles, socially desirable characteristics for masculinity and femininity, and a predetermined set of responses indicative of sex role style (Kelly & Worrell, 1977). The two-dimensional model of masculinity-femininity allowed a person to possess varying degrees of both masculinity and femininity regardless of gender. An individual was considered sex-typed to the extent that s/he endorsed sex-stereotyped characteristics of the other variety. If a person endorsed an equal number of sex-stereotyped characteristics of each variety, that person was given the designation, androgynous.

Bakan (1966) devised sociocultural definitions of masculinity and femininity. Masculinity denoted an "agentic" quality characterized by concern for oneself and the attainment of one's goals. Femininity, on the other hand, denoted a communal quality of concern for others intermingled with concern for oneself. Bem (1974) further associated masculinity with assertiveness and determined the overriding feminine quality as "yielding."

Four self-report measures of androgyny have recently been developed. Of these the Bem Sex Role Inventory (BSRI) (Bem, 1974), has been the most

widely used. The Personal Attributes Questionnaire (PAQ) (Spence et al., 1957b) is similar to the BSRI but has made use of a different scoring method for classifying androgyny. From the Personality Research Form, Berzins et al. (1978) derived a list of items and composed the PRF ANDRO Scale for classifying persons as androgynous or sex-typed. Heilbrun (1967) extracted Masculinity and Femininity subscales based on the Adjective Check List (Cosentino & Heilbrun, 1964).

The BSRI includes separate masculinity and femininity scales, each of which contains 20 personality characteristics. The BSRI asks the individual to indicate on a 7-point scale how well each of 60 personality characteristics describes him or her as an individual. The scale ranges from 1 ("Never or almost never true") to 7 ("Always or almost always true"). Masculinity, femininity, and androgyny scores are assigned as a result of the selected responses. Arithmetic averages on the masculine and feminine scales determine the masculinity and femininity scores, respectively.

Androgyny was originally scored as the relative balance, determined by a negligible t ratio, between masculine and feminine sex-typed characteristics (Bem, 1974). The number of responses endorsed by the individual did not affect the classification of androgyny. The essential ingredient was the approximately equal number of masculine and feminine attributes.

This original operational definition of androgyny has been challenged by Berzins et al., 1978; Spence et al., 1975b; Strahan, 1975. These investigators asserted that if an androgynous person has been defined as adaptive, flexible, and effective in particular interpersonal contexts, then the number of responses will be increased with the increased number

of endorsements of masculine and feminine attributes. Bem (1977) has since revised her scoring procedure and has advocated consideration of the absolute quantity of masculine and feminine items endorsed.

The Personal Attributes Questionnaire (Spence et al., 1975b) measures stereotypes by requiring subjects to compare directly the typical male and female rather than asking for independent ratings of each sex, as in the Sex Role Stereotype Questionnaire (Rosenkrantz, Vogel, Bee, Broverman, & Broverman, 1968). Male-valued, female-valued, and sex-specific scales comprise the Personal Attributes Questionnaire. Of the 55 items that were rated by college students, 18 were judged to be characteristic of the typical female and 23 were judged to be characteristic of the typical male. The sex-specific scale contained the remaining items that were rated as ideal and typical for only one gender.

The PAQ procedure for determining sex-typing and androgyny is similar to that currently proposed by Bem (1977). Spence et al. (1975b) believe that the absolute strengths of masculine and feminine attributes influence attitudinal and behavioral outcomes for the individual. Their definition of androgyny includes absolute strength as well as the relative balance of masculinity and femininity scores. As an approach to quantifying the additive concept of androgyny, a four-point masculinity-femininity androgyny index was developed. The total subject population was split at the median on both the male-valued and female-valued scales. Four groups thus resulted from this median-split. This is presented in Figure 1. A high score was assigned if the score fell above the median whereas a low score was assigned if the score fell below the median. The high masculine low feminine individuals were classified into a masculine group. Low masculine high feminine individuals were classified into a

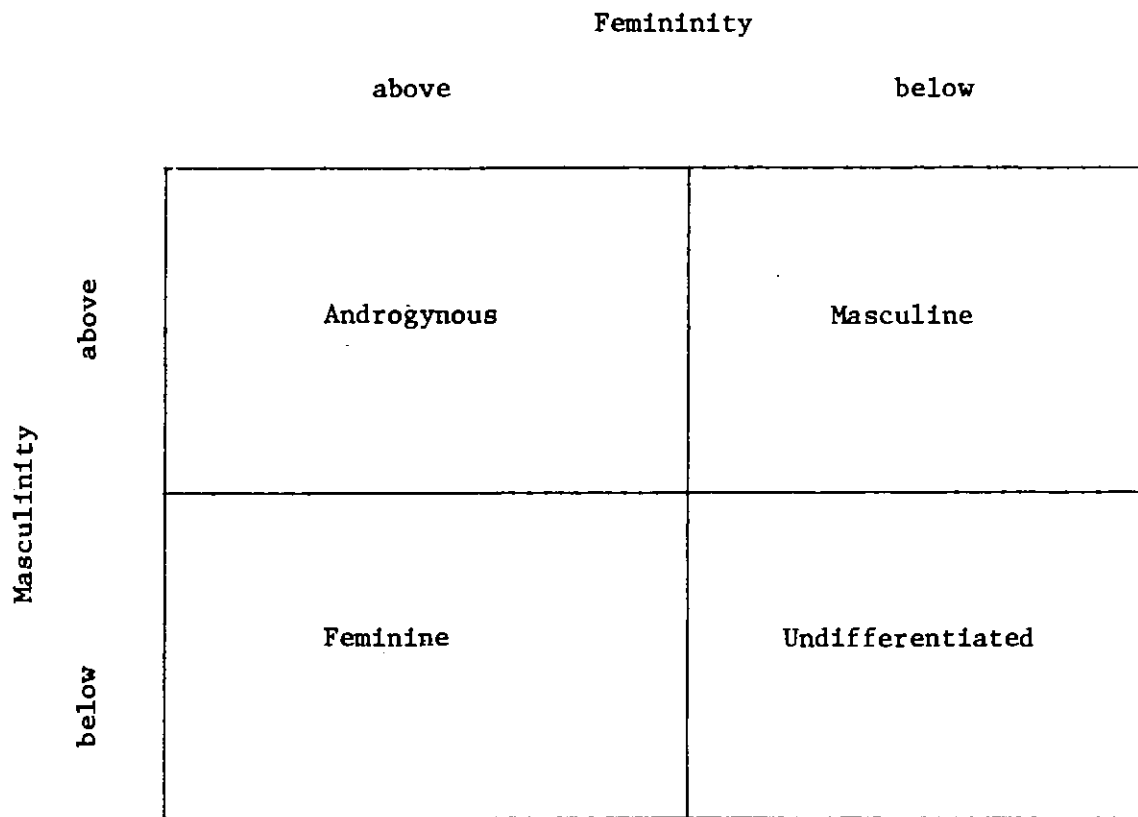


Figure 1. Four Quadrant Classification of Sex Role Identity Using a Median-Split and Adding the Dimensions of Masculinity and Femininity.

feminine group. The remaining two categories endorsed equal feminine and masculine attributes. The low masculine low feminine individuals were labeled as "undifferentiated." Only those who were high masculine high feminine were considered androgynous.

In the correlations between the PAQ and a measurement of self-esteem, the usefulness of the fourfold scoring system was shown. Using the Spence et al. (1975b) definition of androgyny, androgynous persons scored the highest in self-esteem. They were followed by the high masculine low feminine group. When the same data were recategorized and used according to the Bem balance method, androgynous persons scored at only moderate levels of self-esteem. These implications have led Berzins et al. (1978) and Heilbrun (1976) to adopt the four-quadrant scoring system (Worrell, 1978). Although most researchers have preferred to use both absolute strength and balance method, the balance method has been defended (Jones, Chernovetz & Hansson, 1978; Wiggins & Holzmueller, 1978). Kelly, Furman, and Young (1978) assert that there is little empirical basis for combining masculinity and femininity scores into broad, typological categories based on median-splits. Persons classified as androgynous, sex-typed, or undifferentiated by one sex role scale may be very different than persons with the same designations based on another scale. Subsequently, these researchers advocate the use of multiple linear measurement or multiple regression analyses.

The PRF ANDRO Scale (Berzins et al., 1978) is derived from the Personality Research Form, a multiscale personality inventory. The PRF ANDRO Scale yields similar results to the BSRI with reported androgyny correlations ranging from .50 to .65. Responses for the ANDRO Scale are true or false for each of the self-descriptive statements and are scored

from the PRF answer sheet. Although the content range is limited by the original PRF, the ANDRO Scale makes it possible to reanalyze prior personality inventory studies in terms of sex role categories.

The Adjective Check List (ACL) is composed of a set of self-descriptive adjectives. Item selection was based on those endorsed adjectives that distinguished male college subjects identified with masculine fathers from female college subjects identified with feminine mothers. This assessment procedure of Heilbrun (1976) differed from those previously mentioned in that the items of the Heilbrun inventory's masculinity scale and femininity scale included presumably undesirable sex-typed traits as well as socially desirable ones. The inclusion of undesirable attributes has an important effect on the data accumulated. Broverman, Broverman, Clarkson, Rosenkrantz & Vogel (1970) report that stereotypically masculine traits were more often perceived as socially desirable than were attributes that were stereotypically feminine. This implies that undesirable feminine attributes are viewed more negatively than undesirable masculine attributes.

The effect of negatively valued traits on sex role categories and correlates was examined by Kelly, Caudill, Hathorn, and O'Brien (1977). After deriving sets of 20 masculine and 20 feminine undesirable sex-type characteristics, they incorporated these into the BSRI and administered the test. The subjects were divided into groups by using the four-quadrant sex role index. Each group was then individually compared with its undesirable scale score. It was found that although all of the groups ascribed to some undesirable attributes, the androgynous group ascribed to the fewest number. Considerable interest was generated by the recognition of the undifferentiated group as the group that used the

greatest number of undesirable self-descriptors. By incorporating these undesirable characteristics, an undifferentiated person decreased his/her probability of successful social interaction. Since sex-typed females endorsed the fewest undesirable masculine traits among the females, it appeared that these devalued characteristics related differently to sex role types.

Androgyny Implications

According to Bem (1975, 1976, 1977), the androgynous person can be both instrumental (assertive, competent, forceful, independent) and expressive (nurturant, warm, supportive, compassionate), depending on the demands of the situation. This is why an androgynous person was described as being more adaptable than a sex-typed individual. A sex-typed male may be uncomfortable while exhibiting warmth, even though the situation may demand it. Conversely, a sex-typed female may be uncomfortable in a situation requiring assertive behavior. In a series of behavior validation studies using the BSRI, Bem and associates set out to provide some support for their androgyny theory.

Bem (1975) collected data from subjects involved in two distinctly different situations. The subject population was composed of male and female college students. The students were administered the BSRI and those classified according to their self-attributes as either masculine-typed, feminine-typed, or androgynous were used in this study. The first situation was designed to determine the degree of conformity to which the subject would ascribe. The subjects were asked to rate cartoons on "how funny" they thought the cartoons were. Cartoons that were objectively judged as rating low were presented to the subjects as though they actually were funny. Results of this experiment suggest that feminine-typed

persons are more likely to be influenced by the pressure to conform than are the masculine-typed and androgynous persons.

The second situation involved a stereotypically feminine response. The subjects were asked to play with a kitten for a set amount of time and then were left alone with the kitten. Bem hypothesized that the masculine-typed person would be reluctant to exhibit this type of response and this hypothesis was supported. Bem, however, was surprised to find that among females, the feminine-typed persons spent less time on spontaneous play with the kitten. The sex-typed females spent actually less time than the sex-typed males.

Because of these conflicting results, two additional studies were carried out (Bem, Martyne, & Watson, 1976). It was speculated that individuals react differently to animals than they do to humans. For this reason, two situations that involved human interaction were employed. In the first situation, the subject was placed in the same room as a human infant. Coders behind a one-way mirror observed the behavior exhibited. Androgynous and feminine-typed males were more responsive than were masculine-typed males. Feminine-typed females, however, were no more responsive to the infant than the androgynous and masculine-typed females.

The second situation was designed to determine the amount of comfort the subject was willing to express to a same-sex partner. Unknowingly each of the partners involved a confederate of the experimenters who was told to openly discuss his/her personal life with the subject. The subject was told to remain focused on that which the partner was willing to convey. The confederate's story started out being autobiographical, but as the conversation progressed, very personal and lonely feelings were conveyed. Again, the subject's consoling responses, such as a head nod or pat on the

back were recorded and coded. The feminine and androgynous males and females were significantly more responsive than the masculine males and females.

Bem and Lenny (1976) attempted to determine the relationship of sex-typing and the avoidance of cross-sex behavior. It was hypothesized that sex-typed persons would avoid engaging in opposite sex-typed behaviors. Those categorized persons were asked to perform a number of tasks and were informed that they would be photographed while they performed. The subjects chose from 30 pairs of activities. Subjects were paid less if they chose a more sex-appropriate activity of the pair presented. Results showed that the sex-typed individuals chose the sex-appropriate activities even though it meant a loss of money. When performing less sex-appropriate activities, these individuals reported feeling uncomfortable with themselves and the environment.

These series of behavioral validation studies have proven fruitful. When sex role styles were assessed by the BSRI, it was possible to predict the subject's choice of sex-stereotyped activities. Support was also given to the conceptualization of the restrictions in behavior that sex-typed individuals possessed.

Wiggins and Holzmuller (1978) investigated the variables of psychological androgyny and interpersonal behavior. Results reveal that androgynous males may be more flexible in their interpersonal behavior than androgynous females. It is important to note that the possibility of differences in self-perception between males and females may account for these results.

Results have recently been found that question the association of androgyny with greater behavior flexibility. Using a variety of methods,

Jones, Chernovetz, and Hansson (1978) compared androgynous persons to sex-typed persons across dimensions involving locus of control, sexual maturity, confidence in one's own ability, self-esteem, helplessness, political awareness, introversion-extroversion, neurosis, gender identification, and attitudes toward women's issues. Findings indicate that across both sexes, adaptability and flexibility are associated with masculinity. The higher the degree of sex-typing, the greater the adaptability found among males. For females, the more masculine in orientation, the more adaptive, competent, and secure they are.

The self-reported characteristics and behaviors of sex role (BSRI) were compared between female athletes and nonparticipants by Campbell (1977). This investigation concluded that female athletes are more likely than nonparticipants to be androgynous. By using the median-split procedure, distribution percentages were calculated. For female nonparticipants, the distribution was as follows: 18% androgynous, 18% masculine, 36% feminine, and 28% undifferentiated. Female athletes were 35% androgynous, 35% masculine, 19% feminine, and 11% undifferentiated.

Using the PAQ, Millar (1978) investigated the attributes of androgyny of female athletes and nonathletes. Findings for the athletes were distributed as 50% androgynous, 15% masculine, 19% feminine, and 15% undifferentiated. Nonathletes were distributed as 32% androgynous, 19% masculine, 35% feminine, and 15% undifferentiated. The study concluded that involvement with sport enhances or attracts the androgynous sex role identity of the female.

Wilcoxon (1978) examined the attributes of androgyny among female athletes using the BSRI and found no significant differences between team and individual sport athletes. Members of highly competitive teams,

however, had higher masculinity scores when compared with less skilled teams.

In conclusion, the concept of masculinity and femininity is spoken of in terms of orthogonal, nonexclusive domains. Instead of a person being labeled as either masculine or feminine, a new category has been considered viable. This concept is androgyny and has been considered as the possession of both high masculine qualities and high feminine qualities within the same person. Androgyny has implied social flexibility and adjustability. The possession of a diverse response repertoire has enabled the androgynous individual to adjust to the demands of the situation. Past research has suggested that society has attributed different values to masculine characteristics than to feminine characteristics. Masculinity has been the most desirable and influential quality a person may possess. Thus, both androgynous and masculine-typed persons may have an increased opportunity for the attainment of success (Jones, Chernovetz, & Hansson, 1978). Contrarily, the feminine-typed person and the undifferentiated person may have to overcome societal pressure in order to achieve success.

The Female in the Sport Environment

Until quite recently, females played a minor role in the history of sport. Several factors accounted for this insignificant role. First, in most societies, females were responsible for raising the children so that very little "free" time was on hand. Even as children, their time was preoccupied with playing house and taking care of younger brothers and sisters. Second, it was also generally believed that vigorous sports were hazardous to the health of females and that sport participation might be detrimental to the child-bearing ability. Finally, social mores of masculine-feminine sex roles have been a powerful influence in discouraging

females from participating in sports, particularly highly competitive activities (Sage, 1974).

As early as 776 B.C. females were excluded from sport. They were not allowed to view the Olympic Games of Greece and if they were caught they were severely punished. Because of the exclusion, the females created their own sports program. The Heraea Games, in honor of Hera, the wife of Zeus, were held every four years and acknowledged only female competitors. Metheny (1972) pointed out that our image of masculinity and the female athlete is rooted in ancient history. The Greeks assigned supermasculine characteristics to their male gods and superfeminine characteristics to their female goddesses. The gods possessed great strength whereas the female goddesses were almost totally devoid of physical strength. Metheny (1972) has emphasized the following:

The fact that these early Greeks could not reconcile feminine desirability with athletic prowess is underlined in the legends of Artemis and Athena. Artemis, the beautiful goddess of the hunt, was fleet of foot, and none excelled her in the use of bow and arrow--but men did not find her lovely body desirable. Athena, goddess of wisdom, and of all goddesses the most respected, carried her own spear as she led men into battle. But alas, she too was denied the love of men. (pp. 279-280)

Sport has long been considered a masculine domain. Sutton-Smith, Rosenberg, and Morgan (1974) examined sex differences of play choices of children. They concluded that boys' increased interest in sports was associated with the male sex role in American society. Beisser (1967) suggested that it was in the realm of sports that males were able to exert their biological dominance of strength. Since modern technology has toned

down the importance of strength in our society as a means of livelihood, males have found comfort with the thought that sport was the only remaining testing ground. With so many aspects of our environment being feminized, there was a strong need for the masculine orientation of sport. Fisher (1972) urged that the masculine concepts of some sports be maintained. Scott (1974), however, considered this to be an obsession.

The female entering the sport environment was faced with a role conflict. She was a female entering a masculine world. Females have chosen to participate in sport because they were secure in their own sense of femininity or because they may have felt as though the rewards were worth the conflict (Harris, 1975). It has been hypothesized that a female does not participate if she is insecure in her own sense of femininity. Jerome (1969) studied personality characteristics, as measured by the California Psychological Inventory, of female 8th-12th grade athletes and nonparticipants. Nonparticipants had more of those interests classified as feminine by our culture than had athletes. Griffin (1973) noted that females with active roles were perceived as being more masculine, more aggressive, more intelligent, less interesting, less attractive, and more competitive when compared to the "ideal" female.

Malumphy (1966) reported that over half of the sampled collegiate golfers and tennis players actually perceived that their feminine image was enhanced by their participation. Small (1973) investigated the perceived feminine role of college female athletes and nonathletes. Resulting data did not support the assumption that feminine role perceptions conflict with sport participation. Female athletes perceived themselves in a positive way. More recent research by Snyder and Kivlin (1975) as well as Kingsley, Brown, and Seilbert (1977) has compared athletes

with nonathletes and their results have contradicted the negative societal view of female sport involvement.

The task of assigning traits to female athletes has been approached. A review of this literature has been provided by Berlin (1974). Balazs (1975) examined the lives of 24 U.S. Olympic female champions. Personal interviews, the EPPS, and personal data questionnaires were used to gather data. Results showed that those females exhibited the following: an intense desire to excel, early goal-setting, a strong self-concept, and supportive parents. The personal profile of the group indicated emotional stability and normal adjustment. O'Connor and Webb (1976) investigated personality traits of college female athletes and nonathletes. There existed significant differences between groups with the athletes scoring higher than the nonathletes on the four factors of intelligence, self-sufficiency, control, and radicalism as measured by the Cattell 16PF Questionnaire. In an attempt to determine whether athletic participation had a positive or negative effect on the athlete, Kukla and Pargman (1976) interviewed 30 female varsity athletes. The athletes identified greater achievement, confidence, self-awareness, and concentration as assets of sport. The responses of the varsity athletes also showed a deep concern for others' views of themselves. Metheny (1972) has philosophized that those sports where strength has not been the major component are those that have been acceptable in the eyes of the public. Some of these sports included archery, gymnastics, diving, shooting, and dance, where females were capable of outperforming males.

To summarize, the sport involved female has functioned in a masculine environment. Researchers have attempted to determine whether the personality of females has changed due to sport participation or whether

females have been attracted to the sport environment because of the personality factors that they possessed. Limited research has been conducted thus far, making "sport type" conclusions unwarranted.

Chapter 3

METHODS AND PROCEDURES

The methods and procedures employed in the collection of data are discussed in this chapter. This chapter has been divided into the following subheadings: preliminary procedures, selection of subjects, selection and description of tests, procedures in collecting data, and treatment of data.

Preliminary Procedures

A set of preliminary procedures was necessitated prior to data collection: Permission was obtained from Sandra Bem for the use of the BSRI; a written proposal was submitted to the thesis advisor for approval; permission was granted from the Ithaca College Human Subjects Committee to conduct the research; 1979 Ithaca College spring course offerings and class distributions were obtained from the Registrar; and permission was granted from professors for use of class time for recruiting volunteer subjects.

Selection of Subjects

The academic components of Ithaca College include the Schools of: Allied Health Professions; Humanities and Sciences; Music; Health, Physical Education, and Recreation; and Communication. A minimum of two classes from each of these schools was visited for the purpose of recruiting volunteer subjects.

Female freshmen and seniors were identified as sport involved or sport uninvolved through self-report questionnaires administered in the classes (see Appendix A). Twenty-six freshmen and 26 seniors were identified as sport uninvolved and 26 freshmen and 26 seniors were identified as sport

involved. All subjects volunteered to participate in the study.

Selection and Description of Tests

The Bem Sex Role Inventory (BSRI) (Bem, 1974) was selected as the measurement of self-perceived sex role. This instrument does not dichotomize masculinity and femininity as the traditional instruments have, and is an established measure of psychological androgyny. Forced choices and out of date conceptualizations of masculinity and femininity are eliminated. The BSRI operationally differentiates people according to their self-descriptions. These people are classified as androgynous, masculine, feminine, or undifferentiated.

In originally developing the masculinity and femininity scales, items in the BSRI were evaluated by both males and females. If both judged the characteristic to be desirable for males but not for females ($p < .05$), that item was considered masculine. If both males and females judged the characteristic to be desirable for females but not for males ($p < .05$), then that item was feminine. Neutral items were those classified by the judges as desirable for either sex. The neutral items composed a Social Desirability scale (see Appendix B).

The BSRI is composed of 60 descriptive adjectives that are believed to be significantly feminine, masculine, or neutral. When taking the BSRI, subjects indicate how well each of the adjectives describes themselves. Responses are indicated on a 7-point Likert scale. The resulting feminine and masculine scores indicate the degree that the subject relates to these concepts through self-description (see Appendix C).

Content validity of the BSRI was determined by correlating the masculinity-femininity scales of the California Psychological Inventory and

the Guilford-Zimmerman Temperament Survey. Both of these inventories have been frequently utilized in previous sex role research. Table 1 presents the correlation determined by Bem (1974) between these two scales and the Androgyny, Masculinity, and Femininity Scales of the BSRI. The fact that none of the correlations is very high indicates that the BSRI is measuring something different from the other two traditional sex role scales.

Product-moment correlations computed between Bem's first and second administrations following a four week interval have proven to be high. Test-retest reliability for the scores are Masculinity $r = .90$, Femininity $r = .90$, Androgyny $r = .93$, and Social Desirability $r = .89$.

Procedures in Collecting Data

Classes were visited and volunteer subjects completed the class and sport involvement questionnaires. Once the subjects had been identified, each subject was notified of potential testing times and 15-minute appointments were subsequently arranged. During each 15-minute appointment, the subject was given an informed consent sheet that the subject read and signed (see Appendix D). Each subject was given a pencil and the test form for the BSRI. After the materials had been distributed, instructions relating to the nature of the study, the anonymity of the subjects, and the need to answer all questions were read. Any questions that were raised were appropriately answered. The completed BSRI was returned to the investigator. Each subject was notified of a retesting time 1 week following the first test administration. This action was necessary for determining the test-retest reliability.

Table 1
 Correlation of the Masculinity-Femininity Scales of the California
 Psychological Inventory (CPI) and Guilford-Zimmerman Scale
 with the Masculinity, Femininity, and Androgyny
 Scales of the BSRI^a

Scale	CPI		Guilford-Zimmerman	
	Males	Females	Males	Females
BSRI Masculinity	-.42	-.25	.11	.15
BSRI Femininity	.27	.25	.04	-.06
BSRI Androgyny	.50	.30	-.04	-.06

^a(Bem, 1974)

Treatment of Data

The BSRI was scored according to the revised scoring packet that utilized the SPSS computer program (Bem, Martyne, & Watson, 1976). This scoring procedure discontinued the use of the androgyny score as the difference between the masculinity and femininity scores. By using the median-split method, the four quadrant classifications were obtained. Frequencies for each classification were calculated for all of the variables. Means and standard deviations were found for the masculinity and femininity scores. A Pearson product-moment correlation was employed to analyze the test-retest reliability over time. Chi-squares were applied to the appropriate variables to test the hypotheses.

The same hypotheses were tested by another method of data analysis. The median-split method was not followed. Actual masculinity and femininity scale scores of the BSRI were used. Bivariate and univariate two-way analyses of variance, for sport involvement by class design, were employed on the masculinity and femininity scale scores. All hypotheses were tested at the .05 level of significance.

Chapter 4

ANALYSIS OF DATA

This chapter includes the results of the investigation. Test-retest reliability was determined and null hypotheses were tested and either accepted or rejected, based upon chi-square analyses and bivariate analysis of variance.

Test-retest reliability was calculated for the masculinity, femininity, and social desirability scales of the BSRI. One week following the initial testing, 37.5% of the sample were retested. The Pearson product-moment correlation yielded correlation coefficients of .94, .84, and .83 for the masculinity, femininity, and social desirability scales, respectively.

Sex role classifications were obtained by use of the median-split method on the masculinity and femininity scale scores found in Appendix E. The calculated median of the masculinity scale was 5.025 and the median of the femininity scale was 5.15. The four quadrant classifications of masculinity, femininity, androgyny, and undifferentiation were determined by using 5.025 as the separating point for high versus low scorers on the masculinity scale. The median of 5.15 for the femininity scale was used to divide the high versus the low scorers on the femininity scale. Subjects with femininity scale scores that fell at the 5.15 median were randomly distributed into the high and low groups. Persons who scored above the median on both scales were classified as androgynous while those who scored below the median on both scales were classified as undifferentiated. Persons that scored high masculine and low feminine were classified as masculine and those that scored low masculine and high feminine were

classified as feminine.

The number of subjects found in the androgynous, masculine, feminine, and undifferentiated sex role classifications of the BSRI for sport involvement and class are presented in Table 2. A trend seems to appear. More seniors than freshmen are classified as androgynous or masculine and more freshmen than seniors are classified as feminine or undifferentiated. When considering sport involvement, it appears that there is a difference in the classification of undifferentiation. When comparing sport involved and sport uninvolved subjects, five more sport uninvolved subjects identify with the undifferentiated sex role.

Median-split Hypotheses

The following are hypotheses concerning the relationship of sport involvement and class based on the median-split classifications of the BSRI:

Null Hypothesis 1. There will be no relationship between sport involvement and the BSRI median-split classifications.

A 4 x 2 chi-square analysis was performed to test the hypothesis. The results are presented in Table 3. A nonsignificant chi-square, $\chi^2 (3) = 1.43$, $p > .05$, resulted in the acceptance of this hypothesis.

Subhypotheses

A set of subhypotheses is proposed in order to examine the relationship of sport involvement with each BSRI classification. The results for each subhypothesis are presented in Table 4. To test each subhypothesis, a simple chi-square analysis was performed.

1. The persons classified as androgynous will be equally distributed between the sport involved and sport uninvolved groups. The hypothesis was accepted with $\chi^2 (1) = 1.44$, $p > .05$.

Table 2
 Subjects Found in Each Classification of the BSRI
 for Sport Involvement and Class

Group	<u>N</u>	Andro	Masc	Fem	Undif
<u>Sport involvement</u>					
Sport involved	52	14	14	13	10
Sport uninvolved	52	11	13	14	15
<u>Class</u>					
Freshman	52	9	8	21	14
Senior	52	16	19	6	11

Table 3
 Chi-square of Sport Involvement by
 Classification of the BSRI

	Sport Involved	Sport Uninvolved	Marginal Total
Androgynous	14	11	25
Masculine	14	13	27
Undifferentiated	10	15	25
Feminine	14	13	27
Marginal Total	52	52	

$\chi^2 (3) = 1.43$

Table 4
 Simple Chi-squares of Sport Involvement and Each
 Median-split BSRI Classification

	Sport Involved	Sport Uninvolved	df	χ^2
Androgynous	14	11	1	.16
Masculine	14	13	1	.00
Undifferentiated	10	15	1	.64
Feminine	14	13	1	.00

2. The persons classified as masculine will be equally distributed between the sport involved and sport uninvolved groups. The results of $\chi^2 (1) = .00, p > .05$ determined the acceptance of the hypothesis.

3. The persons classified as undifferentiated will be equally distributed between the sport involved and sport uninvolved groups. The hypothesis was accepted with $\chi^2 (1) = .64, p > .05$.

4. The persons classified as feminine will be equally distributed between the sport involved and sport uninvolved groups. The hypothesis was accepted with $\chi^2 (1) = .00, p > .05$.

Null Hypothesis 2. There will be no relationship between class and the BSRI median-split classifications.

To test this hypothesis, a 4 x 2 chi-square was performed on the BSRI classifications and class. Refer to Table 5. The results that are presented provide sufficient statistical evidence necessary for the rejection of the null hypothesis. For this analysis, $\chi^2 (3) = 15.13, p < .05$. There is a trend that suggests that more freshmen than seniors are undifferentiated or feminine and more seniors than freshmen are androgynous or masculine.

Subhypotheses

A relationship between class and the BSRI median split classifications was found with the rejection of the above null hypothesis. Several subhypotheses were tested in an attempt to account for this relationship. The subhypotheses examined the relationship between class and each sex role classification. Each subhypothesis was tested by a simple chi-square analysis. Results are presented in Table 6.

1. The persons classified as androgynous are equally distributed between the freshmen and senior groups. A nonsignificant chi-square,

Table 5
Chi-square of Class Group by Classification of the BSRI

	Freshmen	Seniors	Marginal total
Androgynous	9	16	25
Masculine	8	19	27
Undifferentiated	14	11	25
Feminine	21	6	27
Marginal total	52	52	

$\chi^2 (3) = 15.13^*$

* $p < .05$.

Table 6
 Simple Chi-squares of Class and Each
 Median-split BSRI Classification

	Freshmen	Seniors	df	χ^2
Androgynous	9	16	1	1.44
Masculine	8	19	1	3.70
Undifferentiated	14	11	1	.16
Feminine	21	6	1	7.26*

* $p < .05$.

$\chi^2 (1) = .16, p > .05$, resulted in the acceptance of the hypothesis.

2. The persons classified as masculine are equally distributed between the freshmen and senior groups. The hypothesis was accepted with $\chi^2 (1) = 1.44, p > .05$.

3. The persons classified as undifferentiated are equally distributed between the freshmen and senior groups. This hypothesis was accepted with $\chi^2 (1) = .16, p > .05$.

4. The persons classified as feminine are equally distributed between the freshmen and senior groups. This analysis resulted in the rejection of the hypothesis with $\chi^2 (1) = 7.26, p < .05$. Significantly more freshmen than seniors were identified as feminine.

Hypotheses Concerning Masculinity and Femininity Scale Scores

Instead of the BSRI Median-split Classifications

The following are null hypotheses concerning differences between degree of sport involvement and class based on the masculinity and femininity scale scores of the BSRI.

Null Hypothesis 1. There is no significant difference for sport involved and sport uninvolved freshmen and seniors in the masculine and feminine scale scores of the BSRI.

A bivariate analysis of variance was utilized to test this hypothesis. The independent variables for this analysis were sport involvement and class. The results are presented in Table 7. The interaction of sport involvement and class, as well as the main effect for class were not significant. A significant main effect for sport involvement evidenced by $F (2,99) = 8.89, p < .05$ provided sufficient statistical evidence for the rejection of the null hypothesis. A significant difference for sport uninvolved subjects based on the masculinity and femininity scale scores

Table 7
 Bivariate Analysis of Variance of Sport Involvement by Class
 on Masculinity and Femininity Scale Scores of the BSRI

Source	Generalized variance	<u>df</u> for <u>F</u>	Approximate <u>F</u> statistic
Sport involvement	7.06	2 99	8.89*
Class	6.89	2 99	.00
Sport involvement x class	.99	2 99	.31
Error	6.89		

*
 $p < .05.$

was evident.

Subhypotheses

1. There is no significant difference between sport involvement and class based on the masculinity scale score of the BSRI.

The subhypothesis was tested by univariate ANOVA. The results are presented in Table 8. There was no significant interaction of sport involvement and class. The main effect for class was not significant. A significant main effect for sport involvement, with $F(1,100) = 17.30$, $p < .05$, warranted the rejection of this hypothesis. The masculinity scale score was significantly higher for sport involved subjects when compared with subjects that were not sport involved.

2. There is no significant difference between sport involvement and class based on the femininity scale score of the BSRI.

A univariate ANOVA was employed for the testing of this hypothesis. The results are presented in Table 9. There was no significance found for sport involvement and class interaction. Nonsignificant main effects for sport involvement and for class resulted. The hypothesis was subsequently accepted.

A Comparison of Median-split Sex Role Classification

Hypotheses and the Hypotheses Concerning Actual

Masculine and Feminine Scale Scores

Two separate methods of data analysis were utilized and the results of these methods were compared. The median-split method was used to categorize all of the subjects into one of four sex role categories. Hypotheses were tested concerning the relationship of sport involvement and class and the sex role classification of each subject. Chi-square analyses

Table 8
 Univariate Analysis of Variance of Sport Involvement
 by Class on Masculinity Scale Scores

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Sport involvement	7.35	1	7.35	17.30*
Class	.00	1	.00	.00
Sport involvement x class	.26	1	.26	.62
Error	42.50	100	.42	
Total	50.10	103		

* $p < .05$.

Table 9
Univariate Analysis of Variance of Sport Involvement
by Class on Femininity Scale Scores

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Sport involvement	.27	1	.27	1.16
Class	.00	1	.00	.00
Sport involvement x class	.00	1	.00	.00
Error	23.24	100		
Total	23.51	103		

were utilized.

A significant relationship was found between class and the BSRI median-split classifications with $\chi^2 (3) = 15.13, p < .05$. A trend suggests that more freshmen than seniors are undifferentiated or feminine and more seniors than freshmen are androgynous or masculine. The subhypotheses concerning the equal distribution of feminine-typed subjects between the freshmen and senior groups was rejected with $\chi^2 (1) = 7.26, p < .05$. Significantly more freshmen than seniors were identified as feminine. Significance was not found for class and the androgynous, masculine, or undifferentiated sex roles.

The median-split procedure was not followed for the second analysis. Actual masculinity and femininity scale scores were used. Hypotheses were tested concerning the differences in sport involvement and class based on the masculinity and femininity scale scores. Bivariate and univariate two-way analyses of variance were employed.

Using a bivariate analysis of variance, sport involvement by class design, the criterion was a linear combination of the masculine and feminine scale scores of the BSRI. A significant main effect for sport involvement was found with $F (2,99) = 8.89, p < .05$. A univariate analysis of variance, sport involvement by class, based on the masculine scale score of the BSRI demonstrated a significant main effect of sport involvement, with $F (1, 100) = 17.30, p < .05$. Sport involved subjects compared to sport uninvolved subjects had significantly higher masculine scale scores.

Summary

Acceptable test-retest reliability was determined by Pearson product-moment correlation. Hypotheses concerning the relationship between sport

involvement and class and the BSRI median-split sex role classifications were tested. A significant main effect for class was found for the femininity sex role classification with significantly more freshmen than seniors identifying with the feminine sex role. Hypotheses concerning the difference between sport involvement and class and actual BSRI masculine and feminine scale scores were also tested. A significant main effect for sport involvement was found for the masculine scale scores. Sport involved subjects compared to sport uninvolved subjects had significantly higher masculine scores.

Chapter 5

DISCUSSION OF RESULTS

The results obtained in Chapter 4 will serve as the basis of discussion for this chapter. It should be pointed out that the two statistical methods of data analysis that were employed are discussed. The data for these two statistical methods consisted of the BSRI median-split sex role classifications and the actual masculine and feminine scale scores of the BSRI.

Reliability of the Testing Instruments

It is of the utmost importance that testing instruments be reliable. Without reliability there can be no credence placed upon the results. Test-retest reliability is one kind of reliability. The results that are measured at one point in time must be obtained again at another point in time. Test-retest reliability estimates for the Masculinity Scale, the Femininity Scale, and the Social Desirability Scale were .94, .84, and .83, respectively. The retest data from the BSRI was obtained from over 1/3 of the sample. Reasonable demands of test-retest reliability were met.

Hypotheses Utilizing the Median-split Method of

Sex Role Classification

Sex role classifications were obtained by the median-split method. Female normative data were not available, consequently, the medians of the masculinity scale and the femininity scale of the subjects being tested were used. This resulted in a forced quadrant division. Half of the subjects fell above the median and half of the subjects fell below. Relatively equal numbers of subjects were classified into each of the four

sex role classifications that consisted of masculinity, femininity, androgyny, and undifferentiation.

Hypotheses were formulated concerning sport involvement and class relationships based on the sex role classifications. A significant relationship was found between class and the BSRI sex role classification of femininity. Significantly more freshmen than seniors were identified as feminine. There was no significant relationship found between class and androgyny, masculinity, or undifferentiation.

The number of subjects found in each classification of the BSRI for sport involvement and class groups is presented in Table 2. An apparent pattern exists for class and the BSRI median-split sex role classifications. There is a tendency for more seniors than freshmen to identify with the masculine or androgynous sex roles. It also appears that fewer seniors than freshmen ascribe to the feminine or undifferentiated sex roles. This class trend can be accounted for by an increase in masculinity found among the seniors. The increase in masculinity draws seniors from the feminine and undifferentiated sex role classifications and relocates them into the androgynous and masculine classifications.

An examination of the type of environment in which college students function is necessary. Competition and achievement are an accepted fact of college life. Survival within this setting necessitates an adaptation to the elements encountered. Female seniors at Ithaca College have functioned in a competitive environment for over three years. One would assume, therefore, that female seniors may have adapted to the environment and may have adopted competitive, assertive, and achievement-oriented qualities. These qualities have been labeled by Bem in the BSRI as "masculine" attributes. An increase in leadership abilities, independence,

self-reliance and self-sufficiency would result in an increased masculine scale score of the BSRI. Consequently, female seniors may identify with masculine attributes.

A greater number of freshmen than seniors were classified as feminine. It should be noted that such dispositions as yielding, gullible, soft spoken and flatterable characterize the items composing the femininity scale. Perhaps freshmen have not yet incorporated the competitiveness and achievement-orientation that is associated with the college experience into their own life styles. Another explanation may be found in the fact that the test that was utilized was self-descriptive. Freshmen may not be able to accurately see or accept the qualities that they possess or may be unwilling to report.

There are additional explanations for the results that were obtained. This was not a longitudinal study. It has been assumed that any major change between the seniors and the freshmen is due to the college environment and sport involvement. The difference found between the freshmen and seniors may not be due to these two factors. The seniors that were tested during the investigation may not have changed during their three years at Ithaca College. They may have ascribed to the same characteristics when they were registered as freshmen. Society has changed radically within the past few years. This change may also be reflected in the difference found between the freshmen and the seniors.

Hypotheses Concerning Actual Masculine and Feminine Scale Scores

The use of the median-split method on BSRI data is a controversial topic. Kelly, Furman, and Young (1978) assert that there is little empirical basis for combining masculinity and femininity scores into broad

typological categories based on median splits. In this study, the median masculinity score was 5.025. The subject with a masculinity score of 3.55 was categorized in the same "low" group as the subject with a masculinity score of 5.00. Individual scores are lost when combined into broad categories. For this reason hypotheses that concern actual masculine and feminine scale scores were formulated.

Sport involvement and class differences based on the masculinity and femininity scale scores of the BSRI were examined. A significant main effect for sport involvement based on the masculine scale score of the BSRI was found. Sport involved subjects when compared to the sport uninvolved subjects had significantly higher masculinity scale scores. These results support the findings of Campbell (1977) and Millar (1978).

Persons that describe themselves as sport involved may be influenced directly by the nature of the sport setting. Sport has been considered a masculine activity by Beisser (1967), Fisher (1972), and Scott (1974). It is logical to assume that females that are classified as masculine may naturally be drawn toward the sport environment. Within this environment, assertive and achievement-oriented behaviors are recognized and rewarded.

Society has held a negative view of sport involvement for females. Females that choose to participate in spite of this societal pressure are likely to be strong individuals or individuals that are not threatened by potential societal rejection.

The masculine items contained within the BSRI masculinity scale are presented in Appendix B. These appear to be characteristics that our society presently attributes to "competent" persons. It is possible that persons that are sport involved have adapted to the sport as it serves as an avenue for attaining competence. In this respect, the sport experience

may have stimulated change.

A Comparison of Median-split Classification Hypotheses
and the Hypotheses Concerning Actual
Masculine and Feminine Scale Scores

For both methods of data analysis, it is interesting to note that there was no difference found between the sport involved and the sport uninvolved subjects in the classification of femininity or the femininity scale score. Society has consistently depicted the sport involved female as "less feminine." This lack of significant difference within the femininity scale points to the possibility that sport involved females do not see or describe themselves as being less feminine. Perhaps this "less feminine" image has been falsely attributed to sport involved females.

The difference found between sport involved and sport uninvolved subjects is in the masculinity score. Sport involved subjects have described themselves as possessing more masculine characteristics when compared with the sport uninvolved subjects.

The relatively equal femininity scale scores found among the sport involved and sport uninvolved subjects gives credence to the concept of androgyny. Androgyny allows the coexistence of masculinity and femininity. It appears that sport involved females may in fact be androgynous. These females are capable of maintaining their feminine attributes while developing a degree of competence within an activity of their choosing.

The results of the statistical tests seem to contradict each other. Using the median-split sex role classification method, there was no relationship found between sport involvement and each BSRI median-split sex role classification. However, using actual masculine and feminine scale scores, a significant main effect for sport involvement was found for the

masculinity scale scores. Sport involved females compared to sport uninvolved females possessed significantly higher masculine scale scores.

The apparent difference in results found between these two methods is deceptive. More senior than freshman females describe themselves as androgynous or masculine. Persons that were absorbed into these two classifications have ascribed to a greater number of masculine characteristics. Significant relationships for sport involvement and each sex role classification were not found because the seniors were assimilated into two distinct categories. This assimilation into the androgyny and masculinity classifications tended to reduce the apparent significance due to the transition. This finding lends strength to the argument that actual masculine and feminine scale scores should be used for data analysis.

Summary

Test-retest reliability estimates for the masculinity, femininity, and social desirability scales were determined at .94, .84, and .83, respectively. These results afford considerable credence to BSRI reliability over time.

Using the median-split method, a significant relationship was found between class and the BSRI sex role classifications. This significance was attributed to the fact that more freshmen than seniors were identified as feminine. Explanations for these results include the possibility that freshmen are unable to accurately describe themselves or that they are relative newcomers to the competitive college scene.

The statistical method of analysis that utilized actual masculinity and femininity scale scores yielded different results. A significant difference between sport involvement classifications on the masculine scale

score of the BSRI was found. Sport involved subjects when compared to the sport uninvolved subjects had significantly higher masculinity scale scores. An explanation for these results may be found in the attraction that sport has for persons that describe themselves as masculine. It is also possible that the sport environment is capable of changing those persons that choose sport as the activity in which they desire to become competent.

A comparison of both statistical methods of data analysis was made. There was no significant difference for sport involved versus sport uninvolved females in the classification of femininity or the feminine scale score.

Chapter 6

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This investigation examined the relationship of sport involvement and class based on the median-split sex role classifications and the actual masculinity and femininity scale scores of the Bem Sex Role Inventory (BSRI). The BSRI is the tool that was used to determine four sex role classifications: androgynous, masculine, undifferentiated, and feminine. The actual masculine and feminine scale scores of the BSRI were also used. Ithaca College freshmen and senior females ($N=104$) were administered the self-descriptive BSRI. Subjects were grouped by degree of sport involvement and class. All subjects were volunteers. Thirty-nine subjects were readministered the BSRI 1 week following initial testing. Test-retest reliability was determined acceptable by the Pearson product-moment correlation method. Chi-square analyses were performed to determine the relationship of sport involvement and class based on each BSRI median-split sex role classification.

No relationship was found between sport involvement and the BSRI sex role classifications. The null hypothesis concerning the relationship between class and the sex role classifications was rejected. Significantly more freshmen than seniors were identified as feminine.

Bivariate and univariate two-way analyses of variance were utilized to determine differences between sport involvement and class based on the actual masculinity and femininity scale scores of the BSRI. The null hypothesis concerning differences in sport involvement and class based on

masculine scale score of the BSRI was rejected. Univariate analyses of variance were performed on the masculinity scale scores and also on the femininity scale scores of the sport involved and sport uninvolved subjects. Sport involved subjects as compared to sport uninvolved subjects had significantly higher masculinity scale scores.

Conclusions

The following are conclusions that were derived as a result of data analyses of this investigation. The results differed from the hypotheses using the median-split sex role classifications and the hypotheses utilizing the actual masculinity and femininity scale scores of the BSRI.

1. The results obtained from the median-split sex role classification hypotheses are presented below.

a. No relationship was found between sport involvement and the BSRI median-split sex role classifications.

b. A relationship was found between class and the sex role classification of femininity with significantly more freshmen than seniors identified as feminine.

2. The results obtained from the masculinity and femininity scale score hypotheses are presented below.

a. Differences were found between sport involvement and the masculine scale scores of the BSRI. Sport involved subjects compared to sport-uninvolved subjects had significantly higher masculinity scale scores.

b. No differences were found between sport involvement and class based on the femininity scale score of the BSRI.

3. It appears that masculinity rather than femininity differentiates between sport involved and sport uninvolved female college freshmen and seniors at Ithaca College.

Recommendations

The completion of the investigation has resulted in the proposal of recommendations that follow:

1. A current set of norms must be established for the Bem Sex Role Inventory. Due to the unavailability of these established norms, the median score that is utilized in the median-split method must be obtained from the sample being tested. This results in a forced quadrant division.
2. Future sex role researchers should be aware of the differences that exist between the use of the BSRI sex role classifications using the median-split and the actual masculinity and femininity scale score data. A multiple linear measurement or multiple regression analyses should be used on the sex role data to increase the validity of the investigation.
3. Longitudinal studies should be undertaken in order to determine the relationship of sport involvement and class on sex role identification.

Appendix A

LETTER TO THE SUBJECTS

Dear Student,

I am a graduate student at Ithaca College and am in the process of grouping subjects for my thesis work. This research deals with senior and freshman women at Ithaca College.

In order to accurately select the subjects necessary for this study, your help is vital. I am asking you to answer the following questions listed below. If you are selected as a subject, a time commitment of 10 minutes will be required. Participation is completely voluntary and your results will remain anonymous.

The success of my work is dependent upon your cooperation.

Name _____

Present Address _____ Telephone _____

Please circle the appropriate choices.

1. What are you matriculated as?

Freshman Sophomore Junior Senior

2. What is your declared major?

Physical Education Other

3. Have you ever been a member of a college, junior college, or high school varsity athletic team?

Yes No

4. Have you ever been a member of a college or junior college varsity athletic team during every year of enrollment?

Yes No

5. Do you presently engage in any sport activities 3 or more times a week?

Yes No

Appendix A (continued)

6. Have you engaged in some sport activity 3 or more times a week during every year of college and junior college enrollment?

Yes

No

Thank you for your time and attention.

Sincerely,

Patricia E. Kieffer

Appendix B

MASCULINE, FEMININE AND NEUTRAL ITEMS OF THE BSRI

Masculine items	Feminine items	Neutral items
Acts as a leader	Affectionate	Adaptable
Aggressive	Cheerful	Conceited
Ambitious	Childlike	Conscientious
Analytical	Compassionate	Conventional
Assertive	Does not use harsh language	Friendly
Athletic	Eager to soothe hurt	Happy
Competitive	feelings	Helpful
Defends own beliefs	Feminine	Inefficient
Dominant	Flatterable	Jealous
Forceful	Gentle	Likable
Has leadership abilities	Gullible	Moody
Independent	Loves children	Reliable
Individualistic	Loyal	Secretive
Makes decisions easily	Sensitive to the needs	Sincere
Masculine	of others	Solemn
Self-reliant	Shy	Tactful
Self-sufficient	Soft spoken	Theatrical
Strong personality	Sympathetic	Truthful
Willing to take a stand	Tender	Unpredictable
Willing to take risks	Understanding	Unsystematic
	Warm	
	Yielding	

Appendix C

THE BEM SEX ROLE INVENTORY

The following list asks you to describe yourself as you see yourself on a series of adjective-type traits. Each of the items uses the same 1 to 7 scale. For example, if you think you usually act intelligently, but not always, you should mark that adjective "6." Please read the scale point labels carefully and then choose one value for each of the following adjectives or phrases.

1	2	3	4	5	6	7
Never or almost never true	Usually not true	Sometimes but infrequently true	Occasionally true	Often true	Usually true	Always or almost always true
_____	1. self-reliant	_____	15. happy	_____	_____	_____
_____	2. yielding	_____	16. strong personality	_____	_____	_____
_____	3. helpful	_____	17. loyal	_____	_____	_____
_____	4. defends own beliefs	_____	18. unpredictable	_____	_____	_____
_____	5. cheerful	_____	19. forceful	_____	_____	_____
_____	6. moody	_____	20. feminine	_____	_____	_____
_____	7. independent	_____	21. reliable	_____	_____	_____
_____	8. shy	_____	22. analytical	_____	_____	_____
_____	9. conscientious	_____	23. sympathetic	_____	_____	_____
_____	10. athletic	_____	24. jealous	_____	_____	_____
_____	11. affectionate	_____	25. has leadership qualities	_____	_____	_____
_____	12. theatrical	_____	26. sensitive to the needs of others	_____	_____	_____
_____	13. assertive	_____	27. truthful	_____	_____	_____
_____	14. flatterable	_____		_____	_____	_____

Appendix C (continued)

- | | |
|---------------------------------|------------------------------|
| _____ 28. willing to take risks | _____ 44. tender |
| _____ 29. understanding | _____ 45. friendly |
| _____ 30. secretive | _____ 46. aggressive |
| _____ 31. makes decisions | _____ 47. gullible |
| _____ easily | _____ 48. inefficient |
| _____ 32. compassionate | _____ 49. acts as a leader |
| _____ 33. sincere | _____ 50. childlike |
| _____ 34. self-sufficient | _____ 51. adaptable |
| _____ 35. eager to soothe hurt | _____ 52. individualistic |
| _____ feelings | _____ 53. does not use harsh |
| _____ 36. conceited | _____ language |
| _____ 37. dominant | _____ 54. unsystematic |
| _____ 38. soft-spoken | _____ 55. competitive |
| _____ 39. likable | _____ 56. loves children |
| _____ 40. masculine | _____ 57. tactful |
| _____ 41. warm | _____ 58. ambitious |
| _____ 42. solemn | _____ 59. gentle |
| _____ 43. willing to take a | _____ 60. conventional |
| _____ stand | |

Appendix D

INFORMED CONSENT FORM

I am in the process of conducting an investigation concerning self-descriptions of college females. This investigation may provide some insight into possible age and activity trends that may exist.

I am asking you to be a subject in this investigation. If you choose to do so, you are asked to complete an adjective check list. This is a pencil and paper questionnaire that requires about 10 minutes to complete. The Adjective Check List is composed of 60 adjectives. You are asked to decide how well each adjective describes you. Responses range from "never or almost never true" to "always or almost always true."

This investigation will involve Ithaca College women. The accompanying personal information sheet asks your name, age, and major. You may be assured of complete confidentiality of responses. Those responses will be coded to ensure anonymity.

I would like to remind you that your participation in this study is completely voluntary. You may withdraw your consent at any point in time during this study.

Please indicate your decision below.

Patricia E. Kieffer, Graduate Student

_____ Yes, I voluntarily choose to participate in this study and am at least 18 years of age.

_____ No, I do not wish to participate in this study.

MASCULINITY AND FEMININITY SCALE SCORES OF SPORT UNINVOLVED--FRESHMEN

Subjects	Masculinity Scale score	Femininity Scale score
1	4.85	5.55
2	4.75	5.55
3	5.05	5.00
4	5.55	4.80
5	3.95	5.15
6	4.85	4.95
7	4.95	5.55
8	4.30	4.20
9	4.60	6.10
10	5.70	5.35
11	4.00	5.10
12	4.10	5.10
13	5.10	5.85
14	3.95	5.50
15	5.35	5.70
16	4.40	5.90
17	4.45	5.55
18	4.80	4.95
19	5.75	4.60
20	4.05	4.90
21	5.65	5.95
22	5.05	4.75
23	4.55	4.60
24	3.85	5.35
25	4.90	5.00
26	4.10	5.30

MASCULINITY AND FEMININITY SCALE SCORES OF SPORT INVOLVED--FRESHMEN

Subjects	Masculinity Scale score	Femininity Scale score
1	3.90	5.25
2	3.95	5.15
3	3.80	5.90
4	5.55	5.65
5	3.45	4.75
6	4.80	5.10
7	3.85	5.15
8	4.35	5.25
9	4.65	5.45
10	4.95	5.15
11	4.70	5.20
12	4.00	5.25
13	5.95	5.15
14	4.40	5.25
15	4.95	4.75
16	3.85	5.80
17	4.10	5.15
18	5.35	5.60
19	5.15	5.05
20	2.90	5.70
21	5.55	4.10
22	5.20	5.50
23	5.15	5.50
24	5.10	5.15
25	6.15	5.05
26	4.25	5.30

MASCULINITY AND FEMININITY SCALE SCORES OF SPORT UNINVOLVED--SENIORS

Subjects	Masculinity Scale score	Femininity Scale score
1	5.40	5.05
2	5.10	4.90
3	5.85	4.30
4	4.45	5.10
5	5.30	4.90
6	5.15	4.25
7	5.85	5.20
8	5.65	5.95
9	6.20	4.70
10	5.45	6.20
11	4.65	5.15
12	5.00	4.80
13	6.05	5.35
14	4.50	5.05
15	5.10	5.05
16	4.95	5.75
17	5.40	5.00
18	4.85	4.75
19	3.85	4.95
20	5.45	5.75
21	5.55	5.20
22	4.00	5.05
23	5.45	5.80
24	4.55	5.35
25	5.00	5.55
26	5.05	4.65

MASCULINITY AND FEMININITY SCALE SCORES OF SPORT INVOLVED--SENIORS

Subjects	Masculinity Scale score	Femininity Scale score
1	4.95	6.55
2	5.35	6.05
3	5.90	4.10
4	5.65	4.85
5	5.20	5.15
6	5.55	5.35
7	5.25	5.05
8	5.90	4.90
9	5.20	5.75
10	5.40	5.50
11	4.75	4.85
12	5.20	5.35
13	5.85	5.60
14	5.10	5.45
15	5.25	6.10
16	5.70	4.75
17	4.75	4.50
18	4.80	4.95
19	4.70	4.05
20	6.20	5.00
21	6.00	4.75
22	5.25	4.45
23	3.65	5.55
24	5.55	5.20
25	3.65	5.00
26	5.70	4.74

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