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AN EXAMINATION OF THE RELATIONSHIP BETWEEN PSYCHOLOGICAL ANDROGYNY AND GROUP PROBLEM-SOLVING BEHAVIOR

by

Judith Ann Hansen

A Dissertation Submitted to the Faculty of the Graduate School of Loyola University of Chicago in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

May

1979

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VITA

Judith Ann Hansen is the daughter of Frederick Owen and Elizabeth Griebel Hansen. She was born on April 24, 1949, in Evanston, Illinois.

She attended elementary schools in Evanston and Kenilworth and graduated from New Trier Township High School in Winnetka, Illinois, in 1967. In 1971 she received a Bachelor of Arts degree in Psychology from Wells College in Aurora, New York. While in college she was selected for Who's Who Among Students in American Colleges and Universities. She then attended Rutgers University in New Brunswick, New Jersey, where she completed her Masters of Education in Educational Psychology in 1973.

Judith interned for the Northern Suburban Special Education District in Highland Park, Illinois, and received certification as a school psychologist in June of 1975. In September of that year she entered the Ph.D. program in the department of Guidance and Counseling at Loyola University of Chicago. She was awarded a University Fellowship during the academic year 1978-79 to complete her doctoral dissertation.

While completing her doctorate, Judith worked as a drug counselor in a community agency and as a counselor in the Educational Opportunity Program at Loyola. She completed an internship at Loyola's Student Counseling Center and served as a counselor/consultant at Rosary College in River Forest. In addition, she was employed as an instructor at the University of Illinois, Chicago Circle Campus, and at Oakton Community College in Morton Grove.

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TABLE OF CONTENTS

Page

LIST OF TABLES

Table Page

Table Page

LIST OF GRAPHS

CONTENTS FOR APPENDICES

CHAPTER I

INTRODUCTION

In spite of the acknowledged complexity of being a male or female in our society, Kaplan and Bean (1976) found that scientists had operated on a single linear model. This model assumed a progression in sex differentiation that started with genetics, moved through physiology and ended in innate psychological differences, as if a straight line connected biological sex, sex role and personality. Confounding the linear model was the assumption that the qualitites of one sex were antithetical to those of the other. This dichotomy was developed from the bipolar, either/or aspect of sex roles.

It is clear that society does in fact define stereotypically a host of traits belonging almost exclusively to one or the other sex roles. In short, it creates a dichotomy of human types, despite both the many differences between individuals of the same gender and the many similarities between people of the different genders. From birth on, people are encouraged to assume a self-definintion and certain behaviors which may or may not be congruent with their "natural" proclivities, and which express only half, if that, of their potential (Chafetz, 1974).

Instead of recognizing the duality of human existence and using both one's so called masculine and feminine possibilities, people have been channeled into sex-role behavior, accomplishments and lives. Both

sexes possess what have been labeled masculine and feminine characteristics; that is, both can be intelligent and emotional, aggressive and nurturant, autonomous and dependent, active and passive. However, each side has been "forced" to specialize and cultivate only one set of sex-role characteristics and to deny the other. Thus, most individuals are alienated from parts of themselves; women from their assertive, intellectual, rational, competitive, striving selves; men from their emotional, sensitive, caring for others, acknowledging dependency, collaborative selves. This leads to polarization both within the self and between the sexes. There is little doubt that this is costly for everyone (Appley, 1973; Bakan, 1966).

Because of the growing disenchantment with traditional models of sex differences which reflect the exclusiveness of male and female qualities, many psychologists have come to adopt an alternative model--psychological androgyny--which proposes the coexistence of masculine and feminine traits within a single individual. The word "androgyny" is used to indicate flexibility of sex role. It refers to individuals who are capable of behaving in integrative masculine and feminine ways, those who are assertive and yielding, independent and dependent, expressive and instrumental. It is the flexibility and the union of positively valued traits that is important for the model of androgyny. Androgynous people are "hybrids" who have moved beyond the stereotypes. The critical aspect of the androgyny model is that it offers individual flexibility and is grounded more in the socio-cultural context of situations than in learned sex-role appropriate behaviors. Quite simply, how an individual behaves depends not on conformity to static sex roles but on the dynamic

aspect of the individual interacting with the environment. This model has gained an enormous amount of support from those who believe that:

> We need to support diversity and flexibility...For the individual and for society, the fewer the options, the more the restrictions, the greater the alienation...(and) the fewer the restrictions, the greater the options, the greater the likelihood of liberation. (Appley, 1973, p. 315)

Androgyny, which allows for the integration of both masculine and feminine qualities, opens up a fuller spectrum of behavior to every human being, regardless of sex.

Biologists have known for years that men and women possess quantities of both male and female hormones (though the balance is different in men and women). Psychologically, there can be a parallel coexistence. Writers for centuries have suggested that such a coexistence is possible. Samuel Coleridge asserted that the great mind is the androgynous mind. Carolyn Heilbrun (1973) states that the concept of androgyny has been found in major literary works throughout the centuries: from Aristophanes through Shakespeare to Virginia Woolf.

Within the field of psychology, Sandra Bem deserves major credit for directing the attention of investigators to the concept of psychological androgyny. Her research suggests that the androgynous person is able to function in a wider variety of situations than the traditionally sex-typed person. He or she engages in stereotypical "masculine" and "feminine" behaviors, while the sex-typed person might be seriously limited in the range of behaviors available to them as they move from situation to situation. In other words, androgynous people are not limited by their sex--they do not adhere to the traditional sex-role stereotypes --they are able to behave in both masculine and feminine ways, regardless

of their sex--in short, they are flexible (Bem, 1975b; Bem, 1977; Bem & Lenney, 1976; Bem, Martyna & Watson, 1976).

Bem interprets her results to indicate that internalizing a culturally imposed "appropriate" sex role may inhibit the development of a full and satisfying behavioral repertoire. Thus, she and a number of other investigators (Constantinople, 1973; Deaux, 1976; Deutsch & Gilbert, 1976; Spence, Helmreich & Stapp, 1975) contend that the concept of androgyny denotes a person who is flexible, socialy competent, able to respond to shifting situational demands, and more complete and actualized in the sense of developing and maximizing personal potential (Jones, Chernovertz & Jones, 1978). In other words, they submit that androgyny indicates flexibility, adaptibility, adjustment and psychological health.

Need for the Study

Thus far, the research in the area of androgyny has been limited to the study of the behavior of individuals acting alone. Because people are perpetually moving in and out of groups, an investigation of the relationship between androgyny and group behavior is of major importance. In addition, increasing the knowledge of the characteristics of effective group members is of great significance to psychologists in furthering their understanding of human behavior and psychological adjustment. Thus a study of the effectiveness of androgynous individuals in groups is essential for those who are attempting to give credence to the notion that androgyny is an indication of mental health.

A great many researchers have investigated the processes of problem solving groups in the laboratory because, in a controlled way, these

processes simulate and thereby illuminate important components and attributes of the many "natural" groups individuals participate in every day. These natural groups could be organizations, staffs, committees, teams, clubs, families or any collection of people who must work through a problem and arrive at one solution or judgement, which stands as the group's decision. Therefore, investigators have sought to discover the components of effective problem-solving groups and the characteristics of effective group members.

It is generally believed that for a problem-solving group to be effective the members, while attempting to move toward a solution, must also attend to the social and emotional climate of the group. Thus, the most effective group members are those who are flexible and skillful enough to perform both task and social-emotional functions. It has been found, however, that most individuals tends to take on specific roles and specialize in one of these two areas. This role differentiation or specialization has been closely linked to gender, with men most often pressing for task accomplishment and women striving to satisfy the social and emotional needs of the members.

Thus, in the problem-solving group research, as is traditionally the case in psychological investigations, the participants are put into two categories--men and women, when similarities and differences in behavior are being investigated. Though the division is biologically sound, many would argue that it is artificial psychologically in that sex role (masculine, feminine, androgynous) is a more crucial factor than gender in predicting behavior. To support this argument, the relationship between sex roles and group roles needs to be investigated.

In addition, this investigation will provide evidence about the critical link between androgyny as a construct and the behavior of those who have been classified as androgynous. Specifically, this study attempts to discover if the theorized flexibility, social competence, and ability to respond to situational demands of androgynous people is apparent in their group behavior. If they can perform both the necessary group roles--task and social-emotional, rather than being limited to one set of roles because of sex-role stereotypes, they can be considered the most effective group members. Thus, this investigation could provide behavioral evidence for the adjustment-adaption theory of androgyny.

Purpose of the Study

The purpose of this study, then, is to determine if androgynous individuals in problem-solving groups function differently than masculine, feminine, and undifferentiated individuals. More specifically, this research will investigate if the androgynous people are the most flexible and effective group members. Flexibility and effectiveness are indicated by the ability to function well on both the instrumental and expressive levels and, thus, the performance of both task and social-emotional roles. In addition, the members' perceptions of the contributions of the individual members and the group process will be studied.

For this purpose, the Bem Sex-Role Inventory will be used to determine the sex-role classification of each individual and member role performance will be determined from a detailed analysis of the group session video-tapes using the classification system developed by Benne and Sheats (1948) in conjunction with National Training Laboratories (NTL). In

addition, questionnaires have been developed to gather important demographic data and information about the participants' perceptions of the group process.

Hypotheses

The hypotheses in this study are stated in the null form. The direction of testing is to reject the null hypotheses at the .05 level of significance.

1. There will be no significant difference between the number of:
   - task roles
   - group building and maintenance roles
   - individual roles
   - total acts

   performed by the androgynous, masculine, feminine, and undifferentiated subjects.
2. There will be no significant difference between the rankings of influence on the task dimension or the group building and maintenance dimension of the androgynous, masculine, feminine, and undifferentiated subjects.
3. There will be no significant difference between the amount of satisfaction with:
   - the group process
   - the decision made
   - the individual's participation

   of the androgynous, masculine, feminine, and undifferentiated subjects.

Definitions of Terms

Bem Sex-Role Inventory (BSRI): a pencil and paper test which classifies individuals as androgynous, masculine, feminine or undifferentiated

sex role: having the characteristics associated with a sex (masculine or feminine) or combinative group (androgynous or undifferentiated)

androgyny: the integration of the positive aspects of masculinity and femininity; a high percentage of both masculine and feminine characteristics on the BSRI

masculine: having the characteristics which are stereotypically associated with males; a high percentage of masculine characteristics and a low percentage feminine characteristics

feminine: having the characteristics which are stereotypically associated with females; a high percentage of feminine characteristics and a low percentage of masculine characteristics on the BSRI

undifferentiated: having no specific sex role; a low percentage of both masculine and feminine characteristics on the BSRI

task roles: represent behaviors that contribute to the group's attainment of its goals and objectives; instrumental behaviors

group building and maintenance roles: represent behaviors that contribute to the organization of the group and harmony among its members; expressive behavior or behavior which is social-emotional in nature

individual roles: represent behaviors that primarily serve each individual's private needs and have little or no relevance to the group as a social system

Limitations of the Study

The subjects in this study were graduate students enrolled in courses in the Graduate School of Education at Loyola University in Chicago during the summer of 1978. The participants volunteered; therefore, this sample cannot be considered a random sample from even this population. This selection process necessarily limits the external validity of this study.

The instrument and questionnaires used were self-reports. As with all self-reports, there is some question about whether they accurately measure the subjects' real perceptions.

Finally, since this study is an analog, the generalizability of the results may be limited.

Organization of this Study

This study is organized under five major headings. Chapter I introduces the research problem and states the need for the study, the purpose of the study, the hypotheses, definitions of terms, and the limitations imposed by its design. Chapter II reviews the literature as it pertains to problem-solving groups and psychological androgyny. Subsections of this chapter are: roles in problem-solving groups, sex differences in role differentiation and group behavior, sex-role stereotypes, traditional measures of masculinity and femininity, the concept of psychological androgyny, and mental health and the costs of sex-role stereotypes. Chapter III provides the design of the study which includes a review of the subjects, materials, instruments, selection and training

of judges, procedure for data collection, and proposed methods for data analysis. The data is analyzed in terms of the study's hypotheses in Chapter IV, and Chapter V examines the results for their implications and offers recommendations for future research.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

Introduction

The purpose of this chapter is to present a review of the related literature. The two major areas of discussion are problem-solving groups and psychological androgyny.

Problem-Solving Groups

Problem-solving groups have been of great interest to psychologists for many years. Thus the body of literature pertaining to these groups is vast. The purpose of this section is not to review all of the material concerning these groups. Instead, this review will present only the information that is directly related to this study. The topics of discussion in this section are: 1) roles in problem-solving groups, and 2) sex differences in role differentiation and group behavior.

Roles in Problem-solving Groups

Social psychologists define a group as a collection of two or more persons who interact in the context of shared norms and goals. They distinguish different categories of groups by looking at the major purpose or goal of the group's acitvity. A problem-solving group is a group which works on some common task usually to produce (or attempt to produce) a readily observable single group product, something which serves

as evidence of the group's acitvity. Hence, the common purpose of a problem-solving group is task accomplishment (McDavid & Harari, 1974).

It is generally agreed that even in a group that is oriented toward solving a problem and reaching a decision, strong affective relationships develop among the members which must be taken into account when analyzing the group's behavior. This view is held by Homans (1950). In brief, he states that the group's action with respect to the problem is affected by the pattern of feelings and activities which emerge from the communication and interaction process involved in the group effort.

Fisher (1974), in reviewing the literature, found that both the task and social-emotional (group maintenance) dimensions are inherent in the process of group problem solving. No problem-solving group exists without both dimensions, each of which is vitally important in order to understand effective group problem solving and to participate effectively in a problem-solving group. The task dimension refers to the relationship between the group members and the work they are to perform--the job they have to do and how they are going to do it. The social-emotional dimension includes the relationship of group members with each other--how they feel toward each other and about their membership in the group.

Benne and Sheats (1948), aware of these dimensions, sought to change the focus of group training. Up until that time, efforts to improve group functioning through training traditionally emphasized the training of group leadership--little direct attention was given to the training of group members in the membership roles required for effective group functioning. Their 1948 paper was based on the conviction that "both effective group training and adequate research into the effective-

ness of group training methods must give attention to the identification, analysis and practice of leader and membership roles, seen as co-relative aspects of over-all group growth and production" (Benne & Sheats, 1948, p. 41). In this paper they describe the necessary membership functions: group task roles and group building and maintenance (social-emotional) roles. In addition, they describe unproductive, self-serving behavior which is irrelevant to the task and label those actions as individual roles.

This focus in group training brought dramatic changes to psychologists' understanding of leadership and is highly related to what is now called the functional approach to group leadership. Leadership has come to be seen as behavior in a situation and as a dynamic relationship. The emphasis currently is focused on what actions are required by groups under various conditions if they are to achieve their goals, and how group members take part in these actions. Leadership is viewed as the performance of those acts which are critical in helping the group achieve its goals. Thus, it is evident that leadership acts can, at least in principle, be performed by almost any member of the group. It would seem that the functional approach to both leadership and membership permits increased understanding of the processes and dynamics of groups (Napier & Gershenfeld, 1973).

Many theorists and researchers, including: Bales (1950), Benne and Sheats (1948), Deutsch (1949) Guetzkow (1968), and Pfieffer and Jones (1976), have described what they perceived to be critical roles within a group. Their descriptions differ in scope and specificity. Attempts to reduce these different kinds of descriptive categories to a few under-

lying dimensions have converged upon the identification of three main qualities in role content: task-oriented goal-directed functions, maintenance or group-building functions and individual self-centered functions (Bales, 1958; Benne & Sheats, 1948; McDavid and Harari, 1974; Napier & Gershenfeld, 1973).

Task roles are instrumental in nature and are essentially directed toward solving the group's problems and achieving its objectives. These roles help the group to select and define common goals and work toward the solution of those goals. While task roles focus on the intelligent problem-solving aspects of achieving movement toward a goal, equally important but at a different level are the roles that focus on the personal relations among members in a group. These group building and maintenance roles include functions serving to maintain the organization of the group and interpersonal harmony within it. These roles are helpful in aiding a group to work together and maintain itself so that members will contribute ideas and be willing to continue toward progress on the group task. Individual roles, unlike task and maintenance roles, are unproductive behaviors. These functions serve the needs of the individual member rather than the collective needs of the group and are thus irrelevant to either the performance or organization of the group as a system.

Thus, when a group is faced with a problem which requires that the members cooperate and work as a group to solve, there are two sets of barriers between the group and its goal. First, they usually must "straighten out" the human entanglements to successful interaction; second, they must adequately perform activities yielding completion of the task (Bass, 1960).

According to Barnard (1938), the survival of any organization depends on its ability to solve two problems: the achievement of the purposes for which the organization was formed, and the satisfaction of the more immediate needs of the members. On the small group level, Bales (1950) makes a related distinction between the problems of the group involving goal achievmenent and adaption to external demands, and the problems involving internal integration and the expression of emotional tensions. The first set he calls adaptive-instrumental problems, the solution of which demands activity in the task area. The second he calls integrative-expressive problems, the solution of which demands activity in the social-emotional area.

Benne and Sheats (1948) and Bradford (1976) state that the ideal leader and/or member of a small group would be sufficiently skillful and flexible to alternate these types of behavior in such a way as to handle both problems. He would be able to make both an active, striving response to the task and a sympathetic response to the individual needs of the group members. However, Slater (1955) found that such individuals are rare and that role differentiation occurs. The most fundamental type of role differentiation in small groups is the divorcing of task roles from social-emotional roles.

Bales (1950, 1970) found that most groups tend to evolve "specialist" roles, so that one person might concentrate on group maintenance activities and another on task related activities. He found that in most cases the "social specialist" evolves earlier in the group life than the "task specialist". In some groups individuals adopted stable role patterns of self-aggrandizement, that is, they specialized in individual

functions, and Bales labeled that role the "overactive deviant". On occasion, the first two kinds of specialization were incorporated into the single role of the "great man".

Sex Differences in Role Differentiation and Group Behavior

Leadership is most often a scattered activity. One person is influential at one time because of a certain combination of environmental demands and personal characteristics; another at another time because of a different congruence of demands and traits. Given the distinction between task-related obstacles and interpersonal ones is fundamental, two separate leaders--a task leader and an interpersonal leader--may emerge in the same group (Collins, 1970). In a series of articles reporting ongoing research at the Laboratory for Social Relations at Harvard University, Bales demonstrated a tendency for leadership to be differentiated into those two kinds of leaders (Bales, 1950, 1955, 1956, 1958; Bales & Slater, 1955; Borgatta & Bales, 1956; Slater, 1955).

It seems that, much like the traditional family, in which the father is the task specialist and the mother the social-emotional specialist, differences appear in groups between the individuals who press for task accomplishment and those who satisfy the social and emotional needs of the members. Over time, groups develop one or more leaders in each category (Napier & Gershenfeld, 1973).

Slater (1955) indicates that there are sociological and psychological factors which bring about role differentiation and specialization. The orientation of the task specialist is more technological, that of the social-emotional specialist is more traditional. He states that

individuals may have predispositions to assume a particular role.

> (People) who are (social-emotional specialists)...may achieve prominence in this role because of the ingratiating skills they have acquired during their lives...Avoidance of conflict and controversy may be a felt necessity for this type of person...He may even avoid the performance of task functions altogether, because of the personal threats which task activity might hold for him. Instead he will express the group's feelings and questions, and place a stamp of approval upon what has already come to pass.
>
> The task specialist, on the other hand, may assume this role only because of an unwillingness or inability to respond to the needs of others. A compulsive concentration on an abstract problem will serve as an intellectual shield against the ambiguity of human feelings. Needs to express hostility may be channeled into aggressive and dogmatic problem-solving attempts. (Slater, 1955, p. 308)

Parsons and Bales (1955) studied the nuclear family and found that the father was concerned with adaptive-instrumental activity, holding a job, while the mother was concerned with integrative-expressive activity, being emotionally supportive. Strodtbeck (1951, 1958) has demonstrated that in both father-mother-son and husband-wife interactions there is a task and social-emotional specialization, and further, that it is the father or husband who preponderantly plays the task role and the mother-wife plays the social-emotional role. In Parsons, Bales and Shils (1953) the authors theorize that the instrumental leadership of the father and the expressive specialization of the mother is a pervasive pattern with important implications in the socialization of the child.

In 1956, Strodtbeck and Mann designed a study to investigate if role differentiation in small problem-solving groups would be similar to the role differentiation in the nuclear family. They arranged for groups of twelve potential jurors to meet together, read the transcripts of a trial, and then deliberate and reach a verdict on the case. The investigators then separated the verbal behavior of the jurors into two

basic categories: task and social-emotional. The conversations of the jurors showed a clear split along sex lines; men were much more likely to make comments that could be considered task-oriented, while women's comments more frequently fell into social-emotional categories.

They found that while both men and women have task and social-emotional acts in their repertoire, men tended to "pro-act" or initiate long bursts of act directed at the solution of the problem, while women tended to "react" to the contributions of others. Men gave opinions and orientation, women showed solidarity, tension release, and agreement. Strodtbeck and Mann conclude:

> Insofar as the differential socialization of boys and girls and their subsequent sex-typed associations have been lasting, it may be reasoned that a latent personality bias has formed for interaction role selection...Our data indicates that the structural differentiation of sex role, relating as it does to the nuclear family experience, constitutes a slight, but persistent continuity and that over the range from family problem solving to jury deliberations, sex-typed differentiation in interaction role can be reliably demonstrated. (Strodtbeck and Mann, 1956, p. 11)

Although these investigators found sharp differences between men and women, the effect that changes in the culture may have on patterns of behavior must be considered. Since 1956, many aspects of the culture have changed. However, the same patterns were found in 1974 when Piliavin and Martin conducted a similar study of group behavior with students as jurors at the University of Wisconsin. Like Strodtbeck and Mann, they found sex-typed differentiation in interaction roles; women gave more comments that could be considered social-emotional, while men made more comments of an instrumental nature (Deaux, 1976).

Along the same lines, Berg and Bass (1961) cited evidence that college men tend to be task-oriented and concerned with getting the task

done. On the other hand, they found that college women tend to be much more interaction-oriented and concerned with establishing harmonious relations with others.

Aries (1977) attributes this sex-typed role differentiation in interaction roles to societal demands. In a society where the woman's role is wife and mother and the man's role is having an occupation, their different socialization causes the sexes to show biases toward social-emotional roles or task roles in their interactions together. Chafetz (1974) with a note of cynicism, states that females do (and implicity ought to) fulfill the former functions and males the latter.

> Since groups, including families, presumably cannot survive without such functions being fulfilled, and since in contemporary American society there exists a division of labor between the genders in their fulfillment, therefore, the "normal" family will consist of an expressive female and an instrumental male. Moreover, to disrupt this pattern is "pathological" and will eventuate in the probable failure of the family to persist. In the scheme the individual carries the burden of adjusting to social reality, that is, the status quo. (Chafetz, 1974, p. 100)

In addition to the role differentiation investigations, sex differences have been found in other aspects of group behavior. Many investigators believe that the interpersonal styles of the group members reflect the sex-role demands of conventional society. That is, the interaction styles of men and women are affected by the sex-role demands of the situation, not just the capacities of the individual. For example, in a study investigating the relationship between sex, dominance and leadership, Megaree (1969) found that high dominance women assumed leadership over low dominance women, but not over low dominance men. These findings were attributed to the sex-role conflict inhibiting the manifestation of dominance by women. In this society, it is appropriate for men

to dominate women, but not the reverse. Thus, high dominance women will not attempt to dominate or lead men for fear of social rejection.

Reitan and Shaw (1964) found that women conform more to group pressure in mixed groups than in all-female groups. This is understandable because in this society women are socialized to let men direct and make decisions. Thus, they are less firm about their beliefs in the presence of men and are more likely to conform to the men's opinions. Aries (1977), in studying same-sex and mixed-sex groups, found that individuals are capable of a wide range of behaviors in groups, but that they select the one that is "appropriate" (in compliance with sex-role stereotypes and societal conventions) in the situation, regardless of the effectiveness of that behavior.

Psychological Androgyny

The purpose of this section is to review the literature pertaining to the concept of psychological androgyny. This is a relatively new concept in psychology, so additional information, which may not seem directly related to the study, will be supplied so as to give the reader a full understanding of androgyny and its consequences. The topics of discussion in this section are: 1) sex-role stereotypes, 2) traditional measures of masculinity and femininity, 3) the concept of psychological androgyny, 4) research findings in the area of psychological androgyny, and 5) mental health and the costs of sex-role stereotypes.

Sex-Role Stereotypes

The aim of this section is not to give an extensive review of the

literature concerning the nature of sex-role stereotypes, but rather to give the reader a basic understanding of the development of those stereotypes and the resultant sex-typing. For those who would like more information about sex-typing and socialization, Mischel (1970) has done an extensive review of the literature in the area. This review examines the processes through which children take on their sex-role identities and become psychological males and females.

Psychologists' theories of sex-typing vary in the degree to which they emphasize the biological basis of sex differences. Some theories, such as Freud's, place heavy emphasis on such biological factors as etiology in the development of sex-linked behavior. Others, such as Kohlberg's cognitive theory and social learning theory, tend to pay little or no attention to biology (Goodstein & Sargent, 1977).

However, for the most part, sex differences in behavior are usually assumed to be due to role differences imposed upon men and women by the culture in which they live. Extensive studies of cultural influences on sex roles (Mead, 1935, 1949) strongly indicate that role differences are molded by the culture during infancy and childhood. The results of such cultural influences are far-reaching and strongly affect the basic personality characteristics of men and women (Shaw, 1971).

To examine the cultural influences on sex roles, Margaret Mead (1935) studied three New Guinea tribes to determine the approved personalities for each sex. In one tribe, the Arapesh, she found that for both men and women the socially approved roles corresponded to the current "ideal" of the American woman: cooperative, responsive to the needs and demands of other. In sharp contrast, in the Mundugumor tribe, both men

and women developed as ruthless, aggressive, positively-sexed individuals with nurturant aspects of the personality at a minimum. That is, both males and females developed "normally" into what Americans would consider an undisciplined and very violent male. In a third tribe, Mead found the women dominant, impersonal, and managing, and the men less responsible and also emotionally dependent.

The general nature of the similarities and differences between the sexes in these three cultures comes as a shock to those who assume the Western pattern to be natural and somehow inviolate. Mead concludes, after numerous investigations, that:

> ..many, if not all, of the personality traits which we have called masculine or feminine are as lightly linked to sex as are clothing, the manners, and the form of head-dress that a society at a given period assigns to either sex...the evidence is overwhelming in favor of the strength of social conditioning. (Mead, 1969, p. 260)

Like Mead, Rosenberg (1973), who surveyed animal observation studies, scientific experiments, limited research with human pseudohermaphrodites, studies of the newborn and anthropological studies, found that there is little biological basis for sex-role stereotypes. In other words, apart from the constants that the male participation in the reproductive act lasts only a few minutes, while the female participation lasts for months, the great body of research fails to prove any biological basis for sex-role differences. Clearly, socialization plays a role so heavy that the biologic component may be irrelevent (Rosenberg, 1973).

The process of sex-role stereotyping is pervasive, extensive and intricate, and it begins long before youngsters become aware of their genitalia. In an important study by Rubin, Provenzano and Luria (1974), it was demonstrated that within the first 24 hours of a child's life a

parent will have projected upon the baby the parents' social stereotype of the child's boy-ness or girl-ness. These investigators interviewed 30 pairs of first time parents, 15 with sons and 15 with daughters, within the first 24 hours after the child's birth. Although male and female infants did not differ in birth length, weight or Apgar scores, daughters were significantly more likely than sons to be described as "little", "beautiful", "pretty", and "cute", and as resembling their mothers. Fathers made more extreme and stereotyped rating judgements of their newborn than did mothers. These findings suggest that sex-typing and sex-role socialization have already begun at birth. Thus begins the process of sex-role differentiation which continues throughout infancy and childhood and reinforced in later life.

Traditional Measures of Masculinity and Femininity

In a general sense, masculinity and femininity are considered relatively stable traits of the individual, rooted in anatomy, physiology, and early experience. It is assumed that although there will be a number of exceptions, most biological females will be high in psychological femininity and most biological males will be high in psychological masculinity. These assumptions are clearly rooted in the development of questionnaires designed to measure masculinity and femininity (Constantinople, 1973).

Historically, the personality dimension of psychological masculinity and femininity (M-F) has been seen by researchers as an innate, biologically determined, enduring trait in males and females. Test constructors make both simple linear and bipolar assumptions (that is, they

see masculinity and femininity as opposite ends of a single dimension), which brings into question the utility and validity of the construct M-F (Kaplan & Bean, 1976). Constantinople (1973) points out the vague definitions employed by test constructors ranging from "M-F is what masculinity-femininity tests measure" (a circular definition) to "sex differences in item response tell us what M-F is". An item like "I like hotdogs" could conceivably be part of a scale measuring M-F if it distinguished between males and females.

No single definition of M-F is accepted by test constructors. Constantinople suggests that the tests are measuring sex differences in item response only, and that they omit the critical link between item response and the masculinity-femininity construct. After her extensive 1973 review of the M-F tests and literature, she concludes that the conceptual weaknesses and measurement problems of traditional psychometric models indicate that tests of M-F are simply not useful.

The most serious problem with traditional measures of masculinity and femininity is that test constructors have assumed that masculinity and femininity represent opposite ends of a single dimension. In other words, if a particular characteristic is not masculine, then it must be feminine (Deaux, 1976). Constantinople (1973) argues that there are no theoretical justifications for this bipolar assumption. She advances instead an alternate conceptualization, also suggested by other recent investigators (Bem, 1975a; Block, 1973; Carlson, 1971) in which masculinity and femininity are regarded as separate dimensions, each present in varying degrees in both men and women.

Constantinople's (1973) careful review of M-F tests has led her to

an alternative conception where masculinity and femininity are viewed as independent sets of characteristics that can occur alone or together. Reframing the relationship between sex role and personality provides one solution to the bipolar problem of treating masculinity as the opposite of femininity and vice versa. Investigators can then examine qualities that men and women share. This reconception, further, permits a verification of the model of androgyny by recognizing that some individuals incorporate the qualities of both masculinity and femininity (Kaplan & Bean, 1976).

The Concept of Psychological Androgyny

The word "androgyny" has been variously understood at different times in different cultures. The etymological root of this Greek word is comprised of "andro", referring to male, and "gyn", referring to female. Androgyny to the Greeks meant the presence of female and male characteristics in a single organism--the hermaphrodite. The contemporary use of the word, however, is sociocultural rather than physical-sexual. The focus is on the interactive psychological characteristics of male-female rather than the static biological ones (Kaplan & Bean, 1976). The word "androgyny" is used to indicate flexibility of sex role. It refers to individuals who are capable of behaving in integrative feminine and masculine ways, who are yielding and assertive, dependent and independent, expressive and instrumental. It is important to note that androgyny is related to sex role identity (masculine, feminine), and not to gender identity (male, female) or sexual preference.

The concept of androgyny is relatively new to the field of

psychology. However, June Singer (1977) and other Jungians believe that androgyny is an archetype which is inherent in the human psyche. They see the androgyne as a universal and collective image that has existed since the remotest times. They believe that in every individual the masculine and feminine, the anima and animus, and the active and receptive natures coexist throughout the span of life (Jung, 1953). That is, the androgynous potential is always present in each person, ready to be tapped as a source of energy--available to anyone who has the courage and imagination to use it (Singer, 1977). However, until recently, the contrasexual qualities have been thought to be best kept in the background in order to establish and preserve a strong gender identity.

Historically, masculinity and femininity have been seen as complementary domains of positive traits. Different theorists have had different labels for these dichotomous domains. Jung (1953) spoke of the animus and the anima, Parsons and Bales (1955) of the instrumental and expressive orientations, Erikson (1964) of the "outer" space and "inner" space, and Bakan (1966) of agency and communion. Implicit in each of these dichotomies is the assumption that each contributes to personal and social effectiveness. Thus, it seems that each of these psychologists would agree that the most desirable state of affairs is androgyny --the possession of a high degree of both characteristics.

Ornstein (1972) surveyed the results of numerous scientific investigations of the two sides of the brain. He states that the two sides represent the polarities in human nature; the intellectual, verbal and analytic left side is associated with the masculine mind and the right side, with its superior kinesthetic functions, spatial perceptions

and integrative ability, has attributes traditionally associated with the feminine mind. He sees the need for integrating the two modes of consciousness, for this integration underlies some of the highest achievements of mankind. Ornstein concludes that what man has separated should somehow be joined again, whether the dualism is observed in modes of consciousness or in individual's perceptions of the world.

Bem (1975a) also believes that the two domains of masculinity and femininity are both fundamental.

> In a modern complex society like ours, an adult clearly has to be able to look out for himself and get things done. But an adult clearly has to be able to relate to other human beings as people, to be sensitive to their needs and to be concerned about their welfare, as well as be able to depend on them for emotional support. Limiting a person's ability to respond in one or the other of these two complementary domains thus seems tragically and unnecessarily destructive of human potential...Thus for a fully effective and healthy human functioning, both masculinity and femininity must be integrated into a more balanced, a more fully human, a truly androgynous personality. (Bem, 1975a, pp. 3-4)

Research findings (Bem, 1974; 1975a; 1975b; 1977; Bem & Lenney, 1976; Bem, Martyna & Watson, 1976; Deutsch & Gilbert, 1976; Spence, Helmreich & Stapp, 1975) indicate that it is possible to be both masculine and feminine--to be androgynous. However, for many individuals, it would seem that traditional sex roles prevent this probability from becoming a reality; men and women are locked into their respective sex roles because masculinity is considered the mark of a psychologically healthy man and femininity is the mark of a psychologically healthy female. Many are now arguing that this system of sex-role differentiation is no longer useful in that it now serves only to prevent men and women from developing as full and complete human beings. Kagan (1964) and Kohlberg (1966) point out that the sex-typed individual is motivated to

keep his behavior consistent with an internalized sex-role standard, a goal that he presumably accomplishes by suppressing any behavior that might be considered inappropriate for this sex. Thus, a masculine self-concept suppresses femininely stereotyped behaviors and vice versa. Adoption of the model of androgyny could allay these problems in that the concept of androgyny maintains that the traits which are defined as good, such as independence, gentleness, competence, strength, and sensitivity should be as desirable for one sex as the other, and the traits which are not admired, such as sneakiness, passivity and vanity should be equally disparaged in both sexes (Tavris, 1977).

Proponents are aware that there is a problem with the model of androgyny in that it assumes a separate behavior content for masculinity and femininity. While Bem recognizes this, she argues that once androgyny is established in this culture, this issue will be resolved, for there will be movement beyond these distinctions to a third dimension. Theoretically, androgynous behavior differs from behavior that alternates between being masculine and being feminine--it is the integration of these that is crucial. Bem (1975a) points out that if there is a moral to the concept of androgyny, it is that behavior should have no gender. The irony here is that the concept of androgyny contains an inner contradiction, hence the seeds of its own destruction. Thus, as the etymology of the word implies, the concept of androgyny necessarily presupposes that the concepts of masculinity and femininity will cease to have such content and the distinctions to which they refer will blur into invisibility. Thus, when androgyny becomes a reality, the concept of androgyny will have been transcended (Bem, 1975a).

Research Findings in the Area of Psychological Androgyny

Within the field of psychology, Sandra Bem deserves major credit for directing the attention of investigators to the concept of androgyny. People, she has found, are not as limited as earlier conceptions of masculinity and femininity would suggest. Bem found that the traditional sex-role dichotomy (masculinity and femininity are seen as opposite ends of a single continuum...one had to be either masculine or feminine, but not both) served to obscure two very important hypotheses: 1) individuals might be androgynous--both masculine and feminine, depending on the situational appropriateness of these various behaviors, and 2) strongly sex-typed individuals might be seriously limited in the range of behaviors available to them. Bem's research investigated these two hypotheses. She states that the major purpose of her research is a political one--"to help free the human personality from the restricting prison of sex-role stereotyping and to develop a conception of mental health which is free from culturally imposed definitions of masculinity and femininity" (Bem, 1975a, p. 15).

To measure androgyny, Bem (1974) developed the Bem Sex Role Inventory (BSRI). This inventory is made up of two separate scales--one that measures masculine characteristics and one that measures feminine characteristics. Bem found that these two scales are independent of each other. This means that a person who scores high on femininity may be high, medium or low on masculinity, and vice versa.

Initially, androgyny, as defined by Bem, was reflected in the balance between a person's scores on the two scales. If the two scores

were relatively equal, then the person was considered androgynous. However, Bem (1977), as suggested by Spence, Helmreich and Stapp (1975) and Strahan (1975), has changed her conception of androgyny. She now believes that only those persons who have a high percentage of both masculine and feminine traits would be truly androgynous. Thus a person who takes the BSRI can be classified as androgynous (high in masculinity and femininity), masculine (high in masculinity and low in femininity), feminine (high in femininity and low in masculinity) or undifferentiated (low in both masculinity and femininity). It is important to note, however, that much of Bem's research was done using the initial scoring system which classified individuals as either masculine (masculine score higher than the feminine score), feminine (feminine score higher than the masculine score) or androgynous (the two scores are relatively equal).

Bem's 1974 paper explains the development and the norming of the BSRI. Research findings in this paper provide construct validation for the concept of androgyny. In addition, other major findings of conceptual interest were that the dimensions of masculinity and femininity are empirically as well as logically independent, and that highly sex-typed scores do not reflect a general tendency to respond in a socially desirable way, but rather a specific tendency to describe oneself in accordance with sex-typed standards of desirable behavior for men and women. A complete analysis of the BSRI will be presented in the materials section of the next chapter.

Armed with the BSRI, Bem and Lenney designed a study to determine whether traditional sex-roles actually did lead people to restrict their behavior in accordance with sex-role stereotypes. They wanted to find

out whether cross-sexed behavior is motivationally problematic for sex-typed individuals even when the situation is structured to encourage it. Specifically, this study aimed to answer the following questions: Do masculine men and feminine women actively avoid activities which happen to be stereotyped as more appropriate for the other sex? And if they do perform a cross-sexed activity, will it cause them discomfort?

The subjects in this study were asked to pick one activity out of a pair of activities to perform for a photograph. These activities differed in their sex-role connotations; for example, masculine activities were oiling hinges, nailing two boards together, feminine activities were preparing formula for a baby bottle, ironing napkins, and neutral activities were playing with a yo-yo, peeling oranges. The subjects were told that it didn't matter how well they performed the activity or if they had ever done it before. In each case, the less sex-appropriate activity was the more highly rewarded. Thus, both masculine and feminine activities were explicitly available to all subjects.

The results indicated that sex-typed individuals were significantly more stereotyped in their choices than androgynous or sex-reversed subjects, who did not differ significantly from one another. In addition, sex-typed subjects felt significantly worse than androgynous or sex-reversed subjects (who again did not differ significantly from one another) when they were given no choice but to perform a cross-sex activity. In other words, the masculine men and the feminine women were significantly more likely to select their own sex's activities and to reject the other sex's activities, even though such choices cost them money and even though the researchers tried to make it as easy as possible for the

subject to select cross-sex activities. Furthermore, it was the masculine men and feminine women who experienced the most discomfort and felt the worst about themselves after performing cross-sex activities. Thus, Bem and Lenney conclude that cross-sex activity is problematic for sex-typed individuals, and that traditional sex roles do produce an unnecessary and perhaps even dysfunctional pattern of avoidance for many people.

Aware that sex-role stereotyping restricts simple, everyday behaviors, Bem (1975b) went on to inquire into whether stereotyping also constricts the individual in more profound domains as well. Thus, she designed a pair of studies on independence and nurturance. The first was designed to tap the "masculine" domain of independence using a standard conformity paradigm. It was hypothesized that masculine and androgynous subjects would both remain more independent from social pressure than feminine subjects. The second study was designed to tap the "feminine" domain of nurturance. By offering the subjects the opportunity to interact with a tiny kitten, it tested the hypothesis that feminine and androgynous individuals would both be more nurturant or playful than masculine subjects.

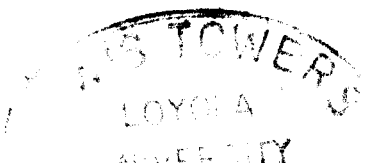
Thus, taken together, these two studies offer a test of the hypothesis that "non-androgynous individuals would 'do well' only when the situation calls for behavior which is congruent with their self-definition as masculine or feminine, whereas androgynous subjects would 'do well' regardless of the sex-role stereotype of the particular behavior in question" (Bem, 1975a, p. 8). That is, androgynous individuals would perform as high as masculine subjects on the masculine task and as high as the feminine subjects on the feminine task.

As expected, the masculine and androgynous subjects did not differ significantly from one another and both were significantly more independent than the feminine subjects. This was true for both males and females.

In the nurturance study, the feminine and androgynous men did not differ significantly from one another, and both were significantly more responsive to the kitten than the masculine men. Thus, the male data confirmed the hypothesis. However, the female data did not. While the androgynous women were, as expected, quite responsive to the kitten, the feminine women were significantly less responsive, and the masculine women fell in between.

When looking at the two studies together, Bem concludes that only the androgynous subjects displayed a high level of masculine independence when under pressure to conform, as well as a high level of feminine nurturance when given the opportunity to interact with a tiny kitten. In other words, only androgynous subjects were both masculine and feminine. On the other hand, the non-androgynous subjects "did well" only when the behavior was congruent with their self-definition as masculine or feminine.

Bem found the results for non-androgynous females complex. As anticipated, masculine women were independent. However, they were not significantly less nurturant than androgynous women. Thus it could not be concluded that the masculine woman was low in expressive functioning. Rather, it was the feminine woman who, in this study, appeared to be the most restricted in that she was not only low in independence, but also low in her nurturance.



The results of this study left Bem with many unanswered questions. Thus, Bem, Martyna and Watson (1976) designed two additional studies to test expressive functioning. In the first study, the subjects were rated on their overall responsiveness to a five month old baby who they were left alone with for ten minutes. The subject believed that the experimentors were observing the infant's reactions to a stranger through a one-way mirror.

In the second study, the subjects talked with a "transfer student" who was having some difficulties in the new school situation. The "listener" was rated on their overall responsiveness to this troubled student. Thus, while the subjects needed to initiate and sustain the interaction in the baby study, the situation in this study was designed not only to be genuinely interpersonal, but also to place the subject in a responsive role.

The results of both these studies supported Bem's initial hypothesis. In both situations, feminine and androgynous subjects did not differ significantly from one another, and both were significantly more nurturant toward the baby and the troubled student than the masculine subjects. Moreover, the results did not differ significantly for males and females. Thus, these studies conceptually replicated the earlier finding that masculine subjects were low in nurturance and more importantly, they indicated that the low nurturance of the feminine woman does not extend to her interaction with humans.

Other investigators have also been studying androgyny. In a study conducted by Spence, Helmreich and Stapp (1975) the implications of the dualistic interpretation of masculinity and femininity and the notion of

androgyny were explored. A network of findings from this study and from the authors' prior research (Spence, et al., 1974) support the conceptualization of masculinity and femininity as a dualism: each a separate, socially desirable component present in both sexes, though typically in different degrees. In turn, they believe that implicit in the masculinity-femininity dichotomy is the assumption that each contributes to personal and social effectiveness. Thus, the most desirable state of affairs is androgyny, defined, in contrast to Bem's (1974) conception of balance, as possession of a high degree of both characteristics. Conversely, a low degree of both is least desirable. They label this conception of androgyny as the "additive concept of androgyny". The additive concept indexing differentiates between undifferentiated individuals, those who are low in both masculinity and femininity, and androgynous individuals, those who are high in both masculinity and femininity, while Bem's (1974) classification system did not. The results obtained in this study clearly support this interpretation.

The researchers classified each of their 530 college student subjects as either masculine, feminine, androgynous or undifferentiated using their masculinity (M) and femininity (F) scores from the Personal Attributes Questionnaire (Spence, et al., 1974). If a score was above the median score for the group, it was considered high, and conversely, below the median was considered low. Thus, an individual who was high M and low F was classified as masculine and one who was high F and low M was considered feminine. As stated before, high scores on both scales indicated androgyny and low scores on both led to an undifferentiated classification.

Correlating the results of the Personal Attributes Questionnaire with a measure of self-esteem, these investigators found the hypothesized results. Each of the groups differed significantly from one another. The undifferentiated subjects had the lowest self-esteem. The feminine subjects had the next lowest, followed by the masculine subjects. The androgynous subject had the highest self-esteem. In addition, in comparison to the undifferentiated subjects, the androgynous individuals reported receiving more honors and awards, dating more, and having a lower incidence of childhood illness. These data suggest that androgyny, conceived of as the possession of both masculinity and femininity, may lead to the most socially desirable consequences, the absolute strength of both components influencing attitudinal and behavioral outcomes for the individual (Spence, et al., 1975).

Following the lead of Spence, Helmreich and Stapp (1975) and other investigators (Heilburn, 1976; Strahan, 1975), Bem (1977) questioned whether her definition of psychological androgyny obscured a potentially important distinction between those individuals who score high on both masculinity and femininity and those individuals who score low on both. In this study she wanted to discover how to best operationalize the concept of androgyny. By her original definition, androgyny was conceptualized as a balance of masculinity and femininity, indicated by a Student's *t*-ratio for the difference between the two mean scores. This definition thus designated as androgynous not only those who score high in both masculinity and femininity but also those who score low in both. The newer additive definition, however, conceptualized androgynous individuals as being only those who had achieved a significant level of both masculinity

and femininity which is indicated by using the median split to determine if both scores are high.

The purpose of Bem's (1977) research was to determine whether one or the other of these two definitions of psychological androgyny was likely to have greater utility in future research. To test the importance of this distinction, the Bem Sex-Role Inventory was administered to 375 male and 290 female undergraduates, along with a variety of other pencil-and-paper questionnaires. In addition, the results of Bem's earlier laboratory studies were reanalyzed with the low-low scorers separated out.

High-high and low-low scorers did not differ significantly on most of the questionnaires, nor did they differ significantly in two of Bem's three previous studies. However, low-low scorers were significantly lower in self-esteem than high-high scorers, they displayed significantly less responsiveness to a kitten, and, among men, they reported significantly less self-disclosure.

Bem concluded that, although the results were not consistent, a distinction between high-high and low-low scorers does seem warranted. Accordingly, she concurred with Spence, et al. (1975) that the term "androgynous" ought to be reserved for those individuals who score high in both masculinity and femininity, and that the BSRI ought to therefore be scored so as to yield four distinct groups: masculine, feminine, androgynous and undifferentiated.

Up until this point, the research presented in this section has substantiated the hypothesis that the concept of androgyny denotes a person who is flexible, socially competent, able to respond to shifting

demands, and complete and actualized in the sense of developing and maximizing personal potential. The findings of the following two studies, however, do not substantiate this hypothesis.

Rogerian self theory and research on sex-role stereotypes formed the basis for the study of Deutsch and Gilbert (1976) on sex-role concepts of self and others and their relationship to personal adjustment. According to self theory, the accurate perception and subsequent integration of social expectations with personal values are essential to adaptive development (Rogers, 1951). Since sex-role stereotypes constitute social expectations for sex-appropriate behavior, these stereotypes serve as potential sources of conflict with personal values. That is, if sex-role stereotypes do not correspond with what people think of themselves, with what they think others want them to be, or with what they ideally would like to be, then, according to Rogerian theory, psychological conflict results (Deutsch & Gilbert, 1976).

Rogers further states that conflicts between personal goals and social norms are least likely to occur for flexible individuals who can find a variety of ways to integrate personal needs and social demands. Thus, Deutsch and Gilbert hypothesized that androgynous individuals would experience less Rogerian-type conflict and be better adjusted than the inflexible, highly sex-typed individuals. To test this hypothesis, a sample of 128 college men and women used the BSRI to describe their concepts of real self, ideal self, ideal other sex, and belief about the other sex's ideal other. In addition, the subjects' personal adjustment was measured by the Revised Bell Adjustment Inventory.

It was found that women's sex-role concepts regarding their real

self, their ideal self, and their belief about what men desire in women were highly dissimilar, whereas those of men were highly similar. These findings suggest sources of Rogerian conflict that exist for women but not for men. The prediction that good adjustment and androgyny would be related and, conversely, that poor adjustment and sex-role stereotyping would be related, was supported for females but not for males.

Deutsch and Gilbert concluded that Rogerian theory would predict better adjustment for men, compared to women, on the basis of the men's lack of concept discrepancy. In addition, they found that masculinity was more, not less, adjustive than androgyny for males. It would seem that the acquisition of masculine traits by women may be adjustive in the social context of a male-oriented culture. Males, on the other hand, need not adopt feminine traits to be adjusted in a "masculine society". In short, they concluded that masculinity is healthy for both sexes and femininity is unhealthy.

Similar findings were obtained in a series of investigations by Jones, Chernovetz and Hansson (1978) designed to assess the implications of psychological androgyny for individual adaptability, adjustment and competence and to further explore the apparently inconsistent findings concerning the implications of androgyny for males and females. Their data indicated that the androgyny equals adaptability hypothesis seems not to hold for males. In most instances androgynous males scored in a less adaptive direction than masculine males, and frequently these differences were significant. In no case were androgynous males found to be more adaptive, flexible or competent than masculine males. Also, with only two exceptions, the dispositional tendencies of feminine males

appeared to be even less adaptive than those of androgynous males. In addition, when asked to indicate their preference for change, feminine and androgynous males preferred to become more masculine, whereas masculine males indicated relatively little desire to change.

In support of the androgyny equals adaptability hypothesis are the findings that androgynous females were less conventional, more outgoing, politically aware, creative, heterosexually active, and less awkward, shy, sensitive to criticism, and so on than feminine females. However, masculine females were even more adaptive than androgynous females on many of the characteristics. Also, as in the case with the males, the less masculine the female, the more desirable increased masculinity became. Thus, these researchers concluded that the important issue becomes not whether one has internalized the traits and behaviors appropriate to one's gender but the extent to which one has assimilated the tendencies most highly rewarded and valued by society--masculine tendencies.

This author believes that it is important to note that the subjects in both these studies were college students, many of whom could still be considered adolescents. A review of the literature pertaining to sex-typing indicates that although high masculinity in males has been correlated with better psychological adjustment during adolescence, it has been correlated during adulthood with high anxiety, high neuroticism and low self-acceptance.

The results of these studies, however, are not surprising in light of evidence which suggests that masculinity is indeed the norm for cultural socialization (Block, 1973) and that masculine characteristics are the clinical standard for adult mental health (Broverman, Broverman,

Rosenkrantz & Vogel, 1970). In the Broverman, et al. (1970) study, they found that the abstract notions of mental health tended to be influenced by the greater social value of masculine characteristics than by the lesser valued feminine characteristics. In other words, clinicians' concepts of a healthy man do not differ from their concepts of a healthy adult, whereas their concepts of a healthy woman do differ from their concepts of a healthy adult. Thus, they found the existence of differential norms for male and female behavior. These norms have lead to a double standard of mental health. Unlike Jones, et al. (1978) who seem to suggest that individuals adopt the masculine sex role, these investigators conclude that the cause of mental health may best be served if both men and women are encouraged toward maximum realization of individual potential, rather than to an adjustment to either of the existing sex roles. In essence then, they espouse the adoption of the model of androgyny.

Mental Health and the Costs of Sex-Role Stereotypes

Bem (1975a) sees androgyny as an indication of mental health. In support of this contention, she has reviewed the literature and found that a high degree of sex-typing is not desirable. In this review, she states that high femininity in females has consistently been correlated with high anxiety, low self-esteem and low self-acceptance, and although high masculinity in males has been correlated during adolescence with better psychological adjustment, it has been correlated in adulthood with high anxiety, high neuroticism and low self-acceptance. In addition, greater intellectual development has been correlated with cross sex-

typing. Boys and girls who are more sex-typed have been found to have lower overall intelligence, lower spatial ability and lower creativity.

Bem's own research (Bem, 1975b, 1977; Bem & Lenney, 1976; Bem, Martyna and Watson, 1976) suggests that traditional sex roles restrict behavior in important human ways and, conversely, that the androgynous person is flexible. Many psychologists agree that flexibility is of major importance for mental health. Millon and Millon (1974), in discussing normal and abnormal personality patterns, state that when a person displays an ability to cope with his environment in a flexible and adaptive manner and when his characteristic perceptions and behaviors foster personal gratification, then he may be said to possess a normal and healthy personality pattern. They relate that one of the first signs of an abnormal pattern is when the individual displays "adaptive inflexibility". This means that the strategies this person employs for relating to others and for coping with conflict are practiced ridigly and imposed uniformly upon conditons for which they are ill suited. Not only is he unable to adapt to events but he seeks to change the conditions of his environment so that they do not call for behaviors beyond his meager behavior repertoire. Rogers (1951) also sees the great importance of flexibility. He states that conflicts between personal goals and social norms are least likely to occur for flexible individuals who can find a variety of ways to integrate personal needs and social demands. Moreover, it appears that the concept of androgyny is highly analagous to Rogerian flexibility (Deutsch & Gilbert, 1976).

Jung (1953) draws direct parallels between androgyny and psychological well-being. His writings are filled with examples from myth and

custom that point to the importance and value of recognizing the qualities of the two sexes within each person. Far from being seen as pathological, as many believed at that time, the fullest potential of men and women, in Jung's view, could be realized only through a process that included the recognition of the contrasexual aspects of their personalities.

Important to the argument that androgyny is an indication of mental health is the point that adhering to sex-role stereotypes can be detrimental to an individual's psychological well-being. Friedan (1963) argues that women's conformity to stereotyped domesticity (the "feminine mystique") has dearly cost large numbers of intelligent, educated, once active and dynamic females. She found that these women fled to psychiatrists asking why, with all they have--lovely house, children, loving husband, are they dissatisfied with life, empty, bored, looking forward to nothing, and in large numbers turning to tranquilizers, barbituates, and alcohol. It seems that according to the stereotype, females are trained to conceive of themselves as worthwhile only to the extent that they are loved by males and devote their lives to mates and children. Friedan indicates that even with "storybook" marriages, women are often frustrated.

The feminine role appears clearly linked to domesticity, meaning, probably more than anything else, child bearing and rearing. It is little wonder, then, that females suffer relatively high rates of mental breakdown at about the time their last child leaves the "nest". Bart's (1970) study of middle-aged women in mental hospitals showed that prior intense involvement with the mother role was closely related to serious depression.

Femininity can be a strike against a woman in the "working world". Hodge, Siegal and Rossi (1966) indicated this in a study in which they collected data on which stereotypical traits are clearly helpful in attaining and performing well in prestigious occupational roles and which are harmful. They found that 15 feminine traits were classified as "harmful" and only 2 masculine ones were so designated. Conversely, 17 masculine traits were classified as "helpful" and the analogous figure for feminine traits was 5. The cost of femininity for those who enter the world outside the home could scarcely be more clear: the more the female conforms to the sex-role stereotype, the less she is capable of functioning in roles that are other than domestic. Stereotypical feminine traits patently do not equip those who might try to live up to them to compete in the world of social and economic priviledge, power, and prestige; the exact opposite is the case for masculine characteristics (Chafetz, 1974).

The pressures of the masculine role may also be extremely harsh. Sexton (1969) points out that suicide rates, along with impotence and mental illness rates, are very high among unemployed males, namely those not fulfilling the primary masculine role of provider. Like women whose children have left the "nest", males undergo severe psychological problems at about 65 or during prolonged periods of unemployment because they have been stripped of what they see as their only important functional role, that of worker and provider.

Sexton (1969) goes on to indicate some further costs of the masculine role. Males have a shorter life expectancy than females and a much

higher mortality rate between the ages of 18 and 65. Some of the reasons for this are probably related to the sex-role phenomena. First, males suffer more accidental deaths. This seems due to the idea that part of the definition of masculinity is personal bravery and adventuresomeness. In addition, there are deaths from diseases that probably reflect the masculine emphasis on competition, success and productivity. The pressures on men to "succeed" in a highly competitive world of work create tremendous stress.

It seems obvious that rigid adherance to sex-role stereotypes can cause an individual a great many problems. Travis (1977), after extensive study, listed three reasons why these stereotypes should be eliminated. First, the stereotypes are now socially dysfunctional because the actual behavior of men and women in this country today no longer fits the expectations held. She also points out that these stereotypes make discrimination against a group seem legitimate. And, most importantly, sex-role stereotypes have become psychologically stifling. They brand a whole group of people with the same label, admitting no individual differences, and they linger on even when they have become inaccurate.

Because these stereotypes do exist, those individuals who do not adhere to them also have problems. Chafetz (1974) points out that individuals of all levels of society who reject traditional sex-role stereotypes are labeled "nonconformist" and subjected to the wrath of most members of society. The treatment of longhaired males a few years ago by police, possible employers, and ordinary citizens speaks eloquently on the "cost" of nonconformity, as does the "wallflower" status

of competitive, intellectually or career-oriented females.

As evidenced by the material presented in this section, costs are paid by those who generally conform to sex-role stereotypes. It appears that while American society continually emphasized equality of opportunity and freedom of choice, social pressure toward conformity to sex-role stereotypes tend to restrict the actual choices open to people (Broverman, et al., 1970) and that "so long as stereotypes persist, they will wreak havoc on a person's self-concept" (Travis, 1977, p. 176).

Summary

It is generally believed that for a problem-solving group to be effective the members, while attempting to move toward a solution, must also attend to the social and emotional climate of the group. Thus, the most effective group members are those who are flexible and skillful enough to perform both task and social-emotional functions. It has been found, however, that most individuals tend to take on specific roles and specialize in one of these two areas. This role differentiation or specialization has been closely linked to gender, with men most often pressing for task accomplishment and women striving to satisfy the social and emotional needs of the group.

Because of the growing disenchantment with traditional models of sex differences which reflect the exclusiveness of male and female qualities, many psychologists have come to adopt an alternative model--psychological androgyny--which proposes the coexistence of masculine and feminine traits within a single individual. It has been suggested, then, that androgyny, which allows for the integration of both masculine and

feminine qualities, opens up a fuller spectrum of behavior to every human being, regardless of sex. Moreover, the research in this area indicates that the androgynous person is able to function in a wider variety of situations than the traditionally sex-typed person. He or she engages in stereotypical masculine and/or feminine behaviors, while the sex-typed person is seriously limited in the range of behaviors available to them as they move from situation to situation. Because androgynous individuals are not limited by their sex or traditional sex roles, they are considered highly flexible individuals.

In light of the findings in the areas of group problem solving and psychological androgyny, the present study proposes to investigate the relationship between sex roles and group roles. Specifically, this study attempts to discover if the theorized flexibility and ability to respond to situational demands of androgynous people is apparent in their group behavior. For if they perform both the necessary group roles--task and social-emotional, rather than being limited to one set of roles because of sex-role stereotypes, they can be considered the most effective group members. Thus, this investigation will provide evidence about the critical link between androgyny as a construct and the behavior of those who have been classified as androgynous.

CHAPTER III

METHODOLOGY

Introduction

The purpose of this study is to determine if androgynous individuals in problem-solving groups function differently than masculine, feminine, and undifferentiated individuals. More specifically, this research will investigate if the androgynous people are the most flexible and effective group members. Flexibility and effectiveness are indicated by the ability to function well on both the instrumental and expressive levels and, thus, the performance of both task and social-emotional roles. In addition, the members' perceptions of the contributions of the individual members and the group process will be studied.

This chapter presents the methodology used to achieve this purpose. The design of the study will be discussed first, followed by a description of the subjects. The materials and instruments used, the selection and training the judges, and the procedure used for collecting the data will then be presented. Finally, the hypotheses under study and the statistical methods used to indicate the significance of the data will be described.

The Design of the Study

As stated earlier, the purpose of this study was to determine if

there was any relationship between sex roles and group behavior. To serve this purpose, this researcher used a correlational design. In psychological research, a correlational design is used to enable an experimenter to identify the extent to which variation in one variable corresponds to variation in another. In this investigation, the variables under study were sex roles and various aspects of group behavior (group member role performances, rankings of influence, and ratings of satisfaction).

This design was also appropriate in that, because of the complexity of the variables in question, they did not readily lend themselves to experimental methods and controlled manipulation. In addition, the correlational design was used in order to permit the measurement of several variables and their inter-relationships in a realistic setting.

Like most experimental designs, the correlational design does have some limitations. First, the design does not allow for the identification of specific causal relationships. Relatedly, this design may lead the researcher to project spurious relationships. Furthermore, because of the limited controls, this design is less rigorous than the true experimental designs.

Subjects

The 54 participants in this study were enrolled in courses in the Graduate School of Education at Loyola University in Chicago during the summer of 1978. The 39 women and 15 men were volunteers from master's level classes. Eighty-three per cent volunteered from Guidance and Counseling courses and fifteen per cent from courses in Administration

and Supervision.

Table 1 presents a summary of the demographic data about the participants. In addition, the following outline highlights some important characteristics of the sample.

Sex: Females made up 72.2% of the sample. This percentage reflects the fact that the majority of students enrolled in the classes from which the volunteers were taken were women.

Age: The participants in this study ranged in age from 23 years to 57 years. The mean age of the sample was 31 years and the median was 28 years.

Race: Caucasians made up 90.7% of the sample. This percentage reflects the racial make-up of the classes from which the volunteers were taken.

Marital Status: Fifty-five and a half per cent of the participants had never been married. This is a high percentage for this age group. This anomaly appears to be due, in part, to the fact that 18.5% of the participants in this study were religious.

Religion: The high percentage (59.3) of Catholics in this study was seemingly due to the fact that Loyola University is a Jesuit institution.

Academic Background: The participants in this study were, for the most part, upper master's level students in the Graduate School of Education. Sixty-three per cent were in the department of Guidance and Counseling.

Previous Group Experience: While one third of the participants had taken a course in group dynamics none of them had had extensive group work.

Table 1

SUMMARY OF DEMOGRAPHIC DATA

	Frequency	Per Cent
Sex		
Female	39	72.2
Male	15	27.8
Age		
20-24	9	16.7
25-29	19	35.2
30-34	6	11.1
35-39	10	18.5
40-44	3	5.6
45-49	2	3.7
over 49	1	1.9
no answer	4	7.4
Race		
Black	5	9.3
Caucasian	49	90.7
Religion		
Catholic	32	59.3
Jewish	4	7.4
Protestant	10	18.5
Other	2	3.7
None	6	11.1

	Frequency	Per Cent
Marital Status		
Single	20	37.0
Married	18	33.3
Separated	1	1.9
Divorced	4	7.4
Widowed	1	1.9
Religious	10	18.5
Children		
Have	11	20.4
Have Not	43	79.6
Graduate Program		
Administration and Supervision	9	16.7
Curriculum	3	5.6
Foundation of Education	1	1.9
Guidance and Counseling	34	63.0
Student Personnel Work	2	3.7
Nursing	3	5.6
Other	2	3.7
Degree Sought		
Master's	38	70.4
Ed.D.	2	3.7
Ph.D.	7	13.0
Specialist	2	3.7
Special Student	5	9.3

	Frequency	Per Cent
Number of Graduate Hours Completed		
0-10	9	16.7
11-20	7	13.0
21-30	21	38.9
31-40	7	13.0
41-50	4	7.4
over 50	4	7.4
Highest Degree Attained		
Bachelor's	41	75.2
Master's	11	20.4
Doctorate	2	3.7
Course in Group Dynamics		
Yes	18	33.3
No	36	66.7

Materials and Instruments

In this section the materials and instruments used in this study are presented. In addition, copies of each of these can be found in Appendix A.

Demographic Data Questionnaire

This questionnaire was used to obtain relevent demographic data from the participants. In addition, the subjects were asked about their graduate education and experience in groups.

Bem Sex-Role Inventory (BSRI)

The Bem Sex-Role Inventory (BSRI) is a pencil-and-paper instrument which distinguishes androgynous individuals from those with more sex-typed self concepts. Unlike most previous masculinity-femininity scales, the BSRI treats masculinity and femininity as two orthogonal dimensions rather than as two ends of a single dimension. Thus, because this instrument treats masculinity and femininity as two independent dimensions, it allows an individual to report that he or she is both masculine and feminine.

Specifically, the BSRI consists of 20 feminine characteristics, 20 masculine characteristics, and 20 neutral characteristics which serve as filler items. A complete listing of these characteristics can be found in Table 2. The masculine and feminine personality qualities used were chosen because they were rated by males and females as being significantly more desirable in American society for one sex than another (Bem,

Table 2

BSRI SCALES

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

1974).

Psychometric analyses on the BSRI indicate that it is quite satisfactory as a measuring instrument (Bem, 1974). The masculinity and femininity scores are empirically as well as conceptually independent (average $\underline{r}$ = -.03). In addition, Bem found that the scores are internally consistent (average α = .86), reliable over a four-week period (average $\underline{r}$ = .93), and uncorrelated with the tendency to describe oneself in a socially desirable direction (average $\underline{r}$ = -.06).

When taking the BSRI, individuals are asked to indicate on a scale from 1 ("never or almost never true") to 7 ("always or almost always true") how well each of the 60 characteristics describes him/herself. The mean number of points assigned by the individual to the masculine attributes constitutes his or her masculinity score (M) and the mean number of points assigned by the individual to the feminine attributes constitutes his or her femininity score (F).

In order to determine the classifications of the subjects, the medians for the masculinity and femininity scores are obtained based on the M and F scores of the population under study. The median masculinity score is that score above which 50% of the masculinity (M) scores fall; and the median femininity score is that score above which 50% of the femininity (F) scores fall. Thus, the medians form cut-off points and scores above those points are labeled "high", while scores below are labeled "low".

Once these median cut-off points have been established, subjects are classified as androgynous, masculine, feminine or undifferentiated. Those individuals who have high scores in both masculinity and

femininity are classified as androgynous and those with low scores in both are classified as undifferentiated. A person is classified as masculine if his or her masculine score is high and feminine score is low, and, conversely, a person is classified as feminine if his or her feminine score is high and masculine score is low. This classification system is shown in Table 3.

"Take Shelter!" - A group problem-solving activity

"Take Shelter!" is a structured group problem-solving activity designed by Sidney Simon (1974). For this exercise, the group is told to imagine that they are a committee which has been asked to make a decision concerning the survival of 10 imaginary people. The facilitator sets the scene by telling the group that a commune of 10 people is endangered by nuclear fall-out and that it is necessary for these people to take shelter within the next 30 minutes. However, because there is only enough air, water, food and space for six people, this committee is being asked to determine who will be able to take shelter. The group is then given a list of brief descriptions of these people and allowed 30 minutes to reach a decision about who shall survive.

Individual Reaction Questionnaire

This questionnaire was developed to ascertain some of the perceptions and reactions of the individuals who participated in the groups. The first three questions on this form ask the respondent how satisfied, on a scale from 1 (dissatisfied) to 7 (satisfied), he or she was with the group process, the decision reached, and his or her own participation in

Table 3

BSRI SEX-ROLE CLASSIFICATION

BASED ON MEDIAN SPLIT

FEMININITY SCORE

MASCULINE SCORE	Below Median	Above Median	
Above Median	Feminine	Androgynous	
Below Median	Undifferentiated	Masculine	

the group. The other two questions ask the respondent to rank each member of the group, from most influential to least influential, on the task dimension--helping the group reach its decision, and the social-emotional dimension--maintaining internal harmony and facilitating communication.

Classification of Member Roles

Benne and Sheats (1948), in connection with the First National Training Laboratory (NTL) in Group Dynamics, developed a listing of group member roles, which is used to analyze the content of group records for research and training purposes. This system has continued to be used extensively in researching group process (Bradford, 1976; Guetzkow, 1968; Luft, 1970; Napier & Gershenfeld, 1973; Pfeiffer & Jones, 1976). The member roles identified in this analysis are classified into three broad groupings.

> 1. Group task roles. Participant roles here are related to the task which the group is deciding to undertake or has undertaken. Their purpose is to facilitate and coordinate the group effort in the selection and definition of a common problem and in the solution of that problem.
> 2. Group building and maintenance roles. The roles in this category are oriented toward the functioning of the group as a group. They are designed to alter or maintain the group way of working, to strengthen, regulate and perpetuate the group as a group.
> 3. Individual roles. This category does not classify member-roles as such, since the "participations" denoted here are directed toward the satisfaction of the "participant's" individual needs. Their purpose is some individual goal which is not relevant either to the group task or to the functioning of the group as a group. Such participations are, of course, highly relevant to the problem of group training, insofar as such training is directed toward improving group maturity or group task efficiency. (Benne & Sheats, 1948, pp. 42-43)

For each of these broad categories, there is a list of specific functional roles, as shown on Table 4. Thus, when observing a group for purposes of classification, each act of the individuals is labeled as one

Table 4

CLASSIFICATION OF MEMBER ROLES

GROUP TASK ROLES	GROUP BUILDING AND MAINTENANCE ROLES	INDIVIDUAL ROLES
initiator-contributor	encourager	aggressor
information seeker	harmonizer	blocker
opinion seeker	compromiser	recognition-seeker
information giver	gate keeper and expediter	self-confessor
opinion giver	standard setter or ego ideal	playboy
elaborator	group-observer and commentator	dominator
coordinator	follower	help-seeker
orienter		special interest pleader
evaluator-critic		
energizer		
procedural technician		
recorder		

of those roles and, in turn, assigned to either the group task, group building and maintenance, or individual role category. The end result of an observation using this classification system, then, is a listing of the number of group task roles, group building and maintenance roles, and individual roles performed by each of the individuals in the group.

Selection and Training of Judges

Each of the four judges used in this study has an advanced degree in Guidance and Counseling or Counseling Psychology and has studied group theory and process extensively. They were selected because of their extensive experience in group work, their understanding of group dynamics, and their competence as observers of group process.

One judge was used only during the actual group meetings. It was her job to be present throughout the group sessions, read the instructions for the group activity, answer questions, direct the video-taping, and distribute and collect the Individual Reaction Questionnaire.

The other three judges were assigned to analyze the video-tapes of the group sessions. Their training in the use of the member classification system had three phases. During the first phase, they read and studied numerous articles about the system itself and about the observation of groups in general. These articles were then discussed with the experimenter who served as the trainer throughout this training period.

In the next phase, the trainer discussed and gave examples of each of the functional roles used in this classification system. In addition, the judges studied video-tapes of groups and practiced classifying the behavior of the individuals on those tapes.

The third phase of training was the testing phase. At this time, each of the judges, acting independently, analyzed the behavior of two individuals on a video-tape. The results of these analyses were then tested for the inter-rater reliability which was 83% agreement. That is, the judges agreed on the labeling of the group member roles 83% of the time.

Procedure

During the first two weeks of the semester, the experimenter visited seven master's level classes (five in Guidance and Counseling and two in Administration and Supervision) in the Graduate School of Education to ask the students to volunteer to participate in this study. At this time, the potential subjects were given a brief description of the purpose of the study and an explanation of the procedure. They were told that they would be asked to fill out three different questionnaires and that they would be video-taped performing a group problem-solving activity.

Those students who agreed to participate were then asked to fill out a consent form, the Demographic Data Questionnaire, and the BSRI. The BSRI was not labeled as such in order that the subjects could remain as objective as possible in their self-descriptions.

The 54 subjects were, as randomly as possible, assigned to a group. Each of the nine groups had six participants in it. Complete randomization was hampered by the time limitations of the subjects. That is, some of them were unable to meet with certain groups because they had other commitments at those times.

The subjects reported to the studio (a converted classroom set up for video-taping) at their assigned time. The judge gave each of them a name-tag with their first name on it and asked them to be seated. The seats were arranged in a semi-circle so that a stationary camera could be used.

After all were seated and introduced, the judge read the instructions to the problem-solving activity "Take Shelter!". The group had 30 minutes to discuss the problem and reach a decision. The entire session was video-taped. After the group meeting, each individual was asked to complete the Individual Reaction Questionnaire.

After the completion of all nine groups, the judges analyzed the video-tapes using the Classification of Member Roles.

During the last week of the semester, all subjects who chose to were shown their video-tapes and BSRI scores. At this time, the experimenter discussed at length the purpose of the study, gave some background information about member roles and sex roles, and answered all questions the subjects had.

Hypotheses

The hypotheses in this study are stated in the null form. The direction of testing is to reject the null hypotheses at the .05 level of significance.

1. There will be no significant difference between the number of:
   - task roles
   - group building and maintenance roles
   - individual roles

total acts

performed by androgynous, masculine, feminine, and undifferentiated subjects.

2. There will be no significant difference between the rankings of influence on the task dimension or the group building and maintenance dimension of the androgynous, masculine, feminine, and undifferentiated subjects.

3. There will be no significant difference between the amount of satisfaction with:

the group process

the decision made

the individual's participation

of the androgynous, masculine, feminine, and undifferentiated subjects.

Analysis of the Data

Analysis of Variance (ANOVA) is the statistical technique used to analyze the data. ANOVA was selected because it allows for the simultaneous comparison of means in order to decide if some statistical relation exists between the experimental and dependent variables (Hays, 1973). In this study sex-role (as determined by the BSRI) is the experimental variable and the dependent variables are various aspects of the subjects' group behavior and perceptions of the group members and process.

As stated earlier, the BSRI can be scored in two different ways. Recent research indicates that the scoring system which uses the median split method for sex-role classification is preferred. However, because

useful information about sex-typing can be obtained from the earlier scoring method, the data was also analyzed based on the t-ratio scoring classification system.

In light of the research on sex differences in groups, the data was also analyzed using sex as the experimental variable. In other words, each hypothesis was tested for significant differences between men and women.

In addition, correlations between several characteristics of the subjects obtained from the demographic data questionnaire and their sex-role classifications were done to ascertain any significant relationships. The statistic used to test for these relationships was the Uncertainty Coefficient. This statistic was chosen because the correlations were being made between variables and characteristics whose data was nominal in nature.

The data was further analyzed without classifying individual subjects in any way through the use of multiple regression techniques (Strahan, 1975). Classifying subjects into sex-role categories loses valuable information about subjects' actual masculinity and femininity scores. By retaining this information and by examining the independent effects of both masculinity and femininity, multiple regression techniques enable this investigator to clarify which dependent variables are a function of the subjects' masculinity alone or femininity alone and which are a function of both.

Summary

The participants in this study were 54 students who were enrolled

in the Graduate School of Education at Loyola University in Chicago. They were asked to participate in a problem-solving group exercise "Take Shelter!" and complete several instruments: the Demographic Data Questionnaire, the Bem Sex-Role Inventory (BSRI), and the Individual Reaction Form.

The methodology employed in this study serves to demonstrate the relationship between the subjects' sex-roles--androgynous, masculine, feminine, undifferentiated--and member role--task, group building and maintenance, individual--performances in the problem-solving groups. The BSRI was used to determine the sex-role classification for each individual and member role performance was determined from a detailed analysis of the group session video-tape. In addition, information about the participants' perceptions of the group process and demographic data were collected to determine if these factors were related to sex-role classification.

Analysis of Variance (ANOVA) was the statistical technique used to test the hypotheses with sex-role classifications as the experimental variables and member role performances, rankings of influence, and ratings of satisfaction as the dependent variables. The data was further analyzed using sex as the dependent variable and through the use of multiple regression techniques. In addition, correlations were made between sex-role classifications and several demographic characteristics of the subjects.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

The purpose of this chapter is the presentation and the analysis of the data. The first section deals with the manner in which the subjects were categorized into sex-role classifications. Next, correlations between these classifications and several demographic characteristics of the subjects were discussed. The testing of each of the hypotheses follows. Lastly, the results of the multiple regression analysis are discussed.

Sex-Role Classification of Subjects

In order to classify the subjects as androgynous, masculine, feminine or undifferentiated, medians were calculated for the entire sample. The median masculinity score is that score above which 50% of the masculine scores (M) fall and the median femininity score is that score above which 50% of the feminine scores (F) fall. The median for both the masculine and feminine scores of this sample was 4.975, with the masculine scores ranging from 3.75 to 6.85 and the feminine scores ranging from 3.95 to 6.2. These medians were then used as cut-off points with scores above 4.975 labeled as "high" and scores below 4.975 labeled "low".

Those individuals who have high scores in both masculinity and

femininity were classified as androgynous and those with low scores in both were classified as undifferentiated. Eleven or 20.4% of the subjects were in each of these categories. A person was classified as masculine if his or her masculinity score was high and femininity score was low, and, conversely, a person was classified as feminine if his or her femininity score was high and masculinity score was low. Sixteen or 29.6% of the subjects were in each of these categories. The subjects' scores are plotted on Graph 1.

In addition to classifying the subjects on the basis of the median split, subjects were classified on the basis of the t-ratio. While Bem no longer recommends using the t-ratio to determine androgyny, it is useful in determining sex-typing. The t-ratio is calculated by multiplying the difference between the femininity score (F) and the masculinity score (M) by the conversion factor 2.322. Thus, the formula for determining an individual's t-ratio is (F-M)(2.322). By this scoring system, subjects were classified as androgynous if their t-ratios were less than or equal to 1.0 and greater than or equal to -1.0 ($-1.0 \leq t \leq 1.0$). A subject was classified as masculine if his or her t-ratio was less than -1.0 ($t < -1.0$) and a subject was classified as feminine if his or her score was greater than 1.0 ($t > 1.0$). Using this scoring system, 20 or 37% of the subjects were classified as androgynous, 15 or 27.8% as masculine, and 19 or 35.2% as feminine.

It is important to note that these two classification systems are highly related. Table 5 presents evidence of this relationship by means of crosstabulation. This table can be read both horizontally and vertically. For example, in reading across the first row, it can be seen

Graph 1

BSRI SCORES ACCORDING

TO MEDIAN SPLIT SCORING

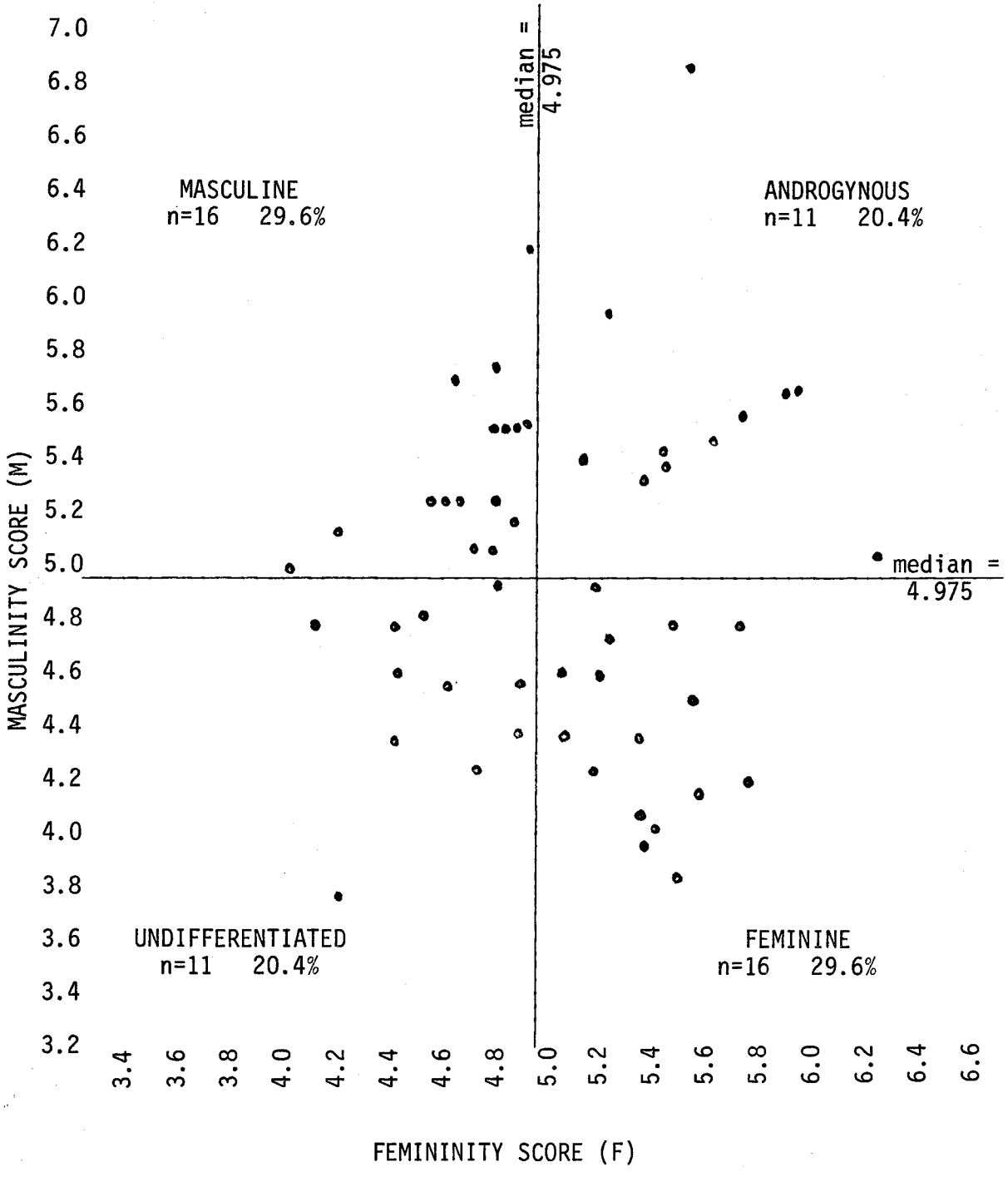


Table 5

CROSSTABULATION OF THE MEDIAN SPLIT

AND T-RATIO SCORING METHODS

		T-RATIO CLASSIFICATION OF SEX-ROLE		
		Androgynous n=20	Masculine n=15	Feminine n=19
MEDIAN SPLIT CLASSIFICATION OF SEX-ROLE	Androgynous n=11	8	2	1
	Masculine n=16	4	12	0
	Feminine n=16	1	0	15
	Undifferentiated n=11	7	1	3

that of the 11 subjects who were classified as androgynous by the median split scoring, 8 were classified as androgynous, 2 as masculine, and 1 as feminine by the t-ratio scoring. Similarly, in reading down the first column, it is shown that of the 20 subjects classified as androgynous by the t-ratio scoring, 8 were classified as androgynous, 4 as masculine, 1 and feminine, and 7 as undifferentiated by the median split scoring. The major difference between these two systems seems to lie in the fact that the t-ratio system does not allow sugjects to be classified as undifferentiated. Thus, many undifferentiated subjects are classified as androgynous when using t-ratios.

Because there are differences between the two systems of scoring, the data was analyzed using each of them. In other words, each hypothesis was tested using the classifications established by the t-ratio scoring as well as those determined by the preferred median split scoring.

Correlations Between Demographic Data and Sex-Role Classifications

The purpose for doing these correlations was to determine if variations in any of the demographic characteristics of the subjects corresponded to variations in the sex-role classifications. Specifically, each demographic characteristic was correlated with the sex-role classifications to determine any relationships between them. The Uncertainty Coefficient was the statistic used to test for significance because the characteristics and classifications are nominal in nature. The demographic characteristics studied were: sex, age, race, religious preference, marital status, program or department of study, extent of graduate study, degree sought, and the completion of a course in group dynamics. It was found that there were no significant relationships between any of these characteristics and the sex-role classifications. See Appendix B for tables presenting the crosstabulations of the demographic data with sex-role classifications.

Though the relationship between sex and sex-role classification was not statistically significant, the nature of this relationship seemed important to discuss. Table 6 presents a tabulation of the sex-role classifications, based on the median split scoring system, of the males and females in this study. Reading down the columns, it can be seen that most men were classified as masculine and the largest percentage of women were classified as feminine. The fact that 66.7% of the males were classified as masculine while 35.9% of the females were classified as feminine indicates that the males in this study were more

Table 6

SEX-ROLE CLASSIFICATIONS

BASED ON MEDIAN SPLIT SCORING

FOR MALES AND FEMALES

		SEX	
		Male n=15	Female n=39
SEX-ROLE CLASSIFICATION BASED ON MEDIAN SPLIT SCORING	Androgynous	2 13.3%	9 23.1%
	Masculine	10 66.7%	6 15.4%
	Feminine	2 13.3%	14 35.9%
	Undifferentiated	1 6.7%	10 25.6%

apt to be sex-typed than the females. Conversely, when comparing the percentages of males and females who were classified as androgynous (13.3% to 23.1%) and undifferentiated (6.7% to 25.6%), it was apparent that the women in this study were less likely than the men to adhere to traditional sex roles.

When the sex-role classifications were determined by using the t-ratio scoring of the BSRI, the same differences between the males and the females were apparent. Table 7 presents the tabulation of the sex-role classifications of the males and females. A review of the data on this table indicated that the men were more apt to be sex-typed than the women. That is, while 60% of the males were classified as masculine, only 46.1% of the females were classified as feminine. Relatedly, the females were more likely to be cross sex-typed (classified as masculine --15.4%) than the males (classified as feminine--6.7%). In addition, the percentage of women classified as androgynous (38.5%) was greater than the percentage of men thus classified (33.3%).

Hypothesis 1

There will be no significant difference between the number of:

- task roles
- group building and maintenance roles
- individual roles
- total acts

performed by the androgynous, masculine, feminine and undifferentiated subjects.

Table 7

SEX-ROLE CLASSIFICATIONS

BASED ON T-RATIO SCORING

FOR MALES AND FEMALES

		SEX	
		Male n=15	Female n=39
SEX-ROLE CLASSIFICATION BASED ON T-RATIO SCORING	Androgynous	5 33.3%	15 38.5%
	Masculine	9 60.0%	6 15.4%
	Feminine	1 6.7%	18 46.1%

This hypothesis is stated in the null form and the direction of testing was to reject this null hypothesis at the .05 level of significance.

Analysis of Hypotheses 1 Using the Median Split Scoring of the BSRI

Analysis of Variance (ANOVA) was used to test each part of this hypothesis. The results of these analyses indicated that there were no significant differences between the androgynous, masculine, feminine, and undifferentiated subjects in the number of task roles, group building and maintenance roles, individual roles, or total acts which they performed. Thus, the null hypothesis was not rejected.

Table 8 presents the mean number of group member roles performed by subjects in each of the sex-role classifications based on the median split scoring of the BSRI. To give some persepective to this data, the mean number of roles performed by the entire sample were computed. The task role mean was 31.56, the group building and maintenance role mean was 7.46, the individual role mean was 4.09, and the total acts mean was 41.31. The masculine subjects were above the mean in all measured aspects of group behavior, while the feminine subjects were consistantly below the mean. The androgynous subjects were above the mean in task roles and total acts, and the undifferentiated subjects were above the mean in group building and maintenance role and individual roles.

When evaluating this data, it is important to remember that task roles and group building and maintenance roles are considered productive and necessary, while the individual roles are considered unproductive and inappropriate. By combining the number of task roles and maintenance roles, it can be seen that the masculine subjects performed the

Table 8

GROUP MEMBER ROLES

OF SEX-ROLE CLASSIFICATIONS

BASED ON MEDIAN SPLIT SCORING

SEX-ROLE CLASSIFICATION BASED ON MEDIAN SPLIT SCORING	GROUP MEMBER ROLE			
	Task	Group Building and Maintenance	Individual	Total
Androgynous	$\bar{x}$=34.00	$\bar{x}$=5.55	$\bar{x}$=3.40	$\bar{x}$=42.64
Masculine	$\bar{x}$=35.00	$\bar{x}$=8.60	$\bar{x}$=5.50	$\bar{x}$=46.50
Feminine	$\bar{x}$=27.94	$\bar{x}$=7.13	$\bar{x}$=2.87	$\bar{x}$=36.06
Undifferentiated	$\bar{x}$=29.36	$\bar{x}$=8.27	$\bar{x}$=4.50	$\bar{x}$= 40.09

greatest number of productive acts. However, in looking at the number of individual roles performed, it can be seen that the masculine subjects also performed the greatest number of unproductive acts. The androgynous subjects were second in the number of productive acts performed, and the undifferentiated subjects were second in the number of unproductive acts performed. It is important to reiterate that none of these differences were statistically significant.

Analysis of Hypothesis 1 Using the T-Ratio Scoring of the BSRI

As stated earlier, the subjects were also categorized into sex-role classifications using the t-ratio scoring of the BSRI. Because this system does not allow for subjects to be classified as undifferentiated, this classification was eliminated in these analyses.

Table 9 presents the mean number of group roles performed by subjects in each of the three sex-role classifications. An examination of this data indicates that in all group role categories, the masculine subjects performed the greatest number of acts. In other words, they were the most active. In fact, as the ANOVA information on Table 10 indicates, the masculine subjects performed significantly more acts than the androgynous and feminine subjects ($p < 0.05$). Differences in specific group role performances (task, group building and maintenance, individual) however, were not statistically significant.

The feminine subjects can be seen as the least active members of the groups; in all group member role categories, the feminine subjects performed the least number of acts. The androgynous subjects, in turn, were consistantly in the middle, performing more acts than the feminine

Table 9

GROUP MEMBER ROLES

OF SEX-ROLE CLASSIFICATIONS
BASED ON T-RATIO SCORING

SEX-ROLE CLASSIFICATION BASED ON T-RATIO SCORING	GROUP MEMBER ROLE			
	Task	Group Building and Maintenance	Individual	Total
Androgynous	$\bar{x}$=30.30	$\bar{x}$=6.74	$\bar{x}$=3.54	$\bar{x}$=39.00
Masculine	$\bar{x}$=37.80	$\bar{x}$=9.40	$\bar{x}$=6.09	$\bar{x}$=51.67
Feminine	$\bar{x}$=27.95	$\bar{x}$=6.61	$\bar{x}$=2.60	$\bar{x}$=35.58

Table 10

ANALYSIS OF VARIANCE

FOR TOTAL GROUP MEMBER ROLES

OF SEX-ROLE CLASSIFICATIONS

BASED ON T-RATIO SCORING

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F	Significance
Between Groups	2339.68	2	1169.84	3.13	0.05
Within Groups	19043.96	51	373.41		

subjects and less acts than the masculine subjects.

Hypothesis 2

There will be no significant difference between the rankings of influence on the task dimension or the group building and maintenance dimension of the androgynous, masculine, feminine and undifferentiated subjects.

This hypothesis is stated in the null form and the direction of testing was to reject this null hypothesis at the .05 level of significance.

Before discussing the analysis, it may be helpful to review the method by which the rankings of influence were obtained. After the subjects had completed the group task, each of them was asked to rank each member of his or her group, from most influential to least influential, on the task dimension (helping the group reach its decision) and the group building and maintenance dimension (maintaining internal harmony and facilitating communication). Thus, there were 6 ranks for each subject on each dimension. These ranks were then averaged, resulting in a mean task rank and mean group building and maintenance rank for each of the subjects. It is important to remember that in ranking the group members, the person ranked "1" was seen as the most influential, "2" was the next most, and so on down to "6", who was seen as the least influential. Thus, the lower the number, the greater the perceived influence.

Analysis of Hypothesis 2 Using the Median Split Scoring of the BSRI

Analysis of Variance (ANOVA) was used to test each part of this

hypothesis. The results of these analyses indicated that there were no significant differences between androgynous, masculine, feminine, and undifferentiated subjects in their achieved rankings of influence. Thus, the null hypothesis was not rejected.

Table 11 presents the mean rankings of influence achieved by subjects in each of the sex-role classifications. A reading of this table reveals no distinct pattern in the rankings. The masculine subjects were seen as the most influential on the task dimension, while the feminine subjects were seen as the least influential. On the group building and maintenance dimension, the undifferented subjects were seen as the most influential and the androgynous subjects as the least.

Analysis of Hypothesis 2 Using the T-Ratio Scoring of the BSRI

Table 12 presents the mean rankings of influence achieved by the subjects in each sex-role classification based on the t-ratio scoring of the BSRI. An examination of this data indicated that the masculine subjects were seen as the most influential on both dimensions. Furthermore, as the ANOVA information on Table 13 indicates, the masculine subjects achieved significantly better rankings of influence on the task dimension than did the androgynous subjects, who were in turn seen as significantly more influential than the feminine subjects ($p < 0.02$).

Hypothesis 3

There will be no significant difference between the amount of satisfaction with:

the group process

Table 11

RANKINGS OF INFLUENCE

FOR SEX-ROLE CLASSIFICATIONS

BASED ON MEDIAN SPLIT SCORING

SEX-ROLE CLASSIFICATION BASED ON MEDIAN SPLIT SCORING	RANKINGS OF INFLUENCE	
	Task Dimension	Group Building and Maintence Dimension
Androgynous	$\bar{x}$=3.3	$\bar{x}$=3.7
Masculine	$\bar{x}$=3.0	$\bar{x}$=3.5
Feminine	$\bar{x}$=3.9	$\bar{x}$=3.5
Undifferentiated	$\bar{x}$=3.6	$\bar{x}$=3.2

Table 12

RANKINGS OF INFLUENCE

FOR SEX-ROLE CLASSIFICATIONS

BASED ON T-RATIO SCORING

SEX-ROLE CLASSIFICATION BASED ON T-RATIO SCORING	RANKINGS OF INFLUENCE	
	Task Dimension	Group Building and Maintence Dimension
Androgynous	$\bar{x}$=3.3	$\bar{x}$=3.6
Masculine	$\bar{x}$=2.9	$\bar{x}$=3.3
Feminine	$\bar{x}$=4.1	$\bar{x}$=3.5

Table 13

ANALYSIS OF VARIANCE

FOR TASK DIMENSION RANKINGS

OF SEX-ROLE CLASSIFICATIONS

BASED ON T-RATIO SCORING

Source of Variation	Sum of Squares	Degrees of Freedon	Mean Squares	F	Significance
Between Groups	12.563	2	6.282	4.163	0.02
Within Groups	76.964	51	1.509		

the decision made

the individual's participation

of the androgynous, masculine, feminine, and undifferentiated subjects.

This hypothesis is stated in the null form and the direction of testing was to reject this null hypothesis at the .05 level of significance.

At this time it may be helpful to reiterate how these ratings of satisfaction were obtained. After the subjects had completed the task, each of them was asked to rate their satisfaction with: the process their group went through in attempting to reach a decision, the decision made by their group, and their own participation in the group. The rating was done on a scale from 1, which indicated dissatisfaction, to 7, which indicated satisfaction. The overall satisfaction rating was derived from averaging the three ratings.

Analysis of Hypothesis 3 Using the Median Split Scoring of the BSRI

Analysis of Variance (ANOVA) was used to test each part of this hypothesis. The results of these analyses indicated that there were no significant differences between the androgynous, masculine, feminine, and undifferentiated subjects in their ratings of satisfaction. Thus, the null hypothesis was not rejected.

Table 14 presents the mean ratings of satisfaction given by the subjects in each of the sex-role classifications based on the median split scoring. For the most part, it appears that the ratings are quite similar. The exceptions to this observation are the low ratings on group process given by the masculine subjects, the low ratings on the decision made

Table 14

RATINGS OF SATISFACTION
OF SEX-ROLE CLASSIFICATIONS
BASED ON MEDIAN SPLIT SCORING

SEX-ROLE CLASSIFICATION BASED ON MEDIAN SPLIT SCORING	RATINGS OF SATISFACTION			
	Satisfaction with Group Process	Satisfaction with the Decision Made	Satisfaction with own Participation	Overall Satisfaction
Androgynous	$\bar{x}$=5.27	$\bar{x}$=4.55	$\bar{x}$=5.73	$\bar{x}$=5.18
Masculine	$\bar{x}$=4.75	$\bar{x}$=5.19	$\bar{x}$=5.19	$\bar{x}$=5.04
Feminine	$\bar{x}$=5.44	$\bar{x}$=5.31	$\bar{x}$=5.25	$\bar{x}$=5.33
Undifferentiated	$\bar{x}$=5.41	$\bar{x}$=5.32	$\bar{x}$=5.09	$\bar{x}$=5.27

given by the androgynous subjects, and the high ratings on participation given by the androgynous subjects. It is important to note, however, that no clear-cut patterns of satisfaction or dissatisfaction are apparent from this data.

Analysis of Hypothesis 3 Using the T-Ratio Scoring of the BSRI

Again, ANOVA was used to test for differences between sex-role classifications based on the t-ratio scoring. The results of the analysis indicated that there were no significant differences between these groups. However, unlike the data obtained when the subjects were classified into sex roles using the median split scoring, this data appeared to indicate some patterns.

Table 15 presents the mean ratings of satisfaction given by the subjects in each of the sex-role classifications based on the t-ratio scoring. In order to get some perspective on this data, the mean ratings for the entire sample were calculated. These sample means were: satisfaction with the group process = 5.19, satisfaction with the decision made = 5.12, satisfaction with own participation = 5.30, and overall satisfaction = 5.20. When comparing these sample means with the mean ratings given by subjects in each of the sex-role classifications, some patterns appeared. Without exception, the androgynous subjects' mean ratings were above the sample mean ratings. In addition, the androgynous subjects were the most satisfied in all areas except for the group process. With only one exception in each classification, the masculine and feminine subjects' mean ratings were below the sample mean ratings. The pattern here seems to be that the androgynous subjects were generally more

Table 15

RATINGS OF SATISFACTION

OF SEX-ROLE CLASSIFICATIONS

BASED ON T-RATIO SCORING

SES-ROLE CLASSIFICATION BASED ON T-RATIO SCORING	RATINGS OF SATISFACTION			
	Satisfaction with Group Process	Satisfaction with the Decision Made	Satisfaction with Own Participation	Overall Satisfaction
Androgynous	$\bar{x}$=5.20	$\bar{x}$=5.25	$\bar{x}$=5.50	$\bar{x}$=5.32
Masculine	$\bar{x}$=4.93	$\bar{x}$=5.13	$\bar{x}$=5.26	$\bar{x}$=5.11
Feminine	$\bar{x}$=5.39	$\bar{x}$=4.97	$\bar{x}$=5.11	$\bar{x}$=5.16

satisfied than those subjects who were classified in the traditional masculine and feminine sex-role classifications.

Differences Between Males and Females

In light of the research findings concerning sex differences in group behavior and the contention that sex roles are more important than gender in predicting the behavior of individuals in groups, this researcher also analyzed the data using sex as the experimental variable. Thus, each of the hypotheses was restated in order to determine if there were any significant differences between the males and females in this study.

Before discussing sex differences in relation to the hypotheses, it may be of interest to look at how males and females differed on the BSRI. As stated earlier, being male and being classified as masculine were related and, conversely, being female and being classified as feminine were related. However, while most males were sex-typed, most females were not. A further analysis of the data indicated that there were significant differences between males and females in their BSRI masculinity and femininity scores.

Table 16 presents the mean masculinity and femininity scores of the male and female subjects. ANOVA results indicate that there were statistically significant differences between males and females on both BSRI scores. Tables 17 and 18 show the ANOVA results for differences in masculinity and femininity scores, respectively. A review of these tables indicated that males' masculinity scores were significantly higher than the females' scores ($p < 0.05$), and, conversely, females' femininity

Table 16

MASCULINITY AND FEMININITY SCORES

OF MALES AND FEMALES

		BSRI SCORES	
		Masculinity	Femininity
SEX	Male	$\bar{x}$=5.34	$\bar{x}$=4.79
	Female	$\bar{x}$=4.81	$\bar{x}$=5.12

Table 17

ANALYSIS OF VARIANCE

FOR MASCULINITY SCORES

OF MALES AND FEMALES

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Groups	3.268	1	3.268	9.109	0.004
Within Groups	18.655	52	0.359		

Table 18

ANALYSIS OF VARIANCE
FOR FEMININITY SCORES
OF MALES AND FEMALES

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Groups	0.997	1	0.997	4.202	0.05
Within Groups	12.334	52	0.237		

scores were significantly higher than the males' scores ($p < 0.004$).

Hypothesis 1 - For Differences between Males and Females

There will be no significant differences between the number of:

task roles

group building and maintenance roles

individual roles

total acts

performed by the male and female subjects.

This hypothesis is stated in the null form and the direction of testing was to reject the null hypothesis at the .05 level of significance.

Table 19 presents the mean number of group member roles performed by the male and female subjects. An examination of this data reveals that the males performed more task roles, more group building and maintenance roles, more individual roles, and more acts than the females. ANOVA was used to determine if these differences were significant. The results of these analyses indicated that there were significant differences between males and females in the number of group member roles performed. Thus, the null hypothesis was rejected.

Table 20 presents the ANOVA results for comparing the number of task roles performed by males and females. These results indicated that males performed significantly more task roles than did the females ($p < 0.04$).

Males also performed significantly more group building and maintenance roles ($p < 0.04$) and individual roles ($p < 0.05$) than the females

Table 19

GROUP MEMBER ROLES

OF MALES AND FEMALES

		GROUP MEMBER ROLE			
		Task	Group Building and Maintenance	Individual	Total
SEX	Males	$\bar{x}$=38.07	$\bar{x}$=10.07	$\bar{x}$=6.50	$\bar{x}$=51.80
	Females	$\bar{x}$=29.05	$\bar{x}$=6.32	$\bar{x}$=3.35	$\bar{x}$=37.28

Table 20

ANALYSIS OF VARIANCE
FOR TASK ROLES
OF MALES AND FEMALES

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Groups	880.503	1	880.503	4.455	0.04
Within Groups	10276.831	52	197.631		

did. The ANOVA results indicating these differences are found on Tables 21 and 22, respectively.

Relatedly, the males in this study performed significantly more acts than the females did ($p < 0.02$). Table 23 presents the ANOVA results which substantiate this difference. These findings and a review of the above results indicate that the males were substantially more active than the females in all measured aspects of group behavior.

Hypothesis 2 - For Differences between Males and Females

> There will be no significant differences between the rankings of influence on the task dimension or the group building and maintenance dimension of the male and female subjects.

This hypothesis is stated in the null form and the direction of testing was to reject the null hypothesis at the .05 level of significance.

Table 24 presents the mean rankings of influence achieved by the male and female subjects. An examination of this data reveals that the males achieved better rankings on both the task dimension and the group building and maintenance dimension. ANOVA was used to determine if these differences were significant. The results of these analyses indicated that there was a significant difference between males and females in the ranking of influence achieved on the task dimension. The difference on the group building and maintenance dimension, however, was not statistically significant. Thus, the null hypothesis was not rejected in total.

Table 25 presents the ANOVA results for comparing the task dimension rankings of influence achieved by the males and females. These

Table 21

ANALYSIS OF VARIANCE

FOR GROUP BUILDING AND MAINTENANCE ROLES

OF MALES AND FEMALES

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Groups	165.882	1	165.882	4.327	0.04
Within Groups	1917.041	50	38.341		

Table 22

ANALYSIS OF VARIANCE

FOR INDIVIDUAL ROLES

OF MALES AND FEMALES

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Groups	60.851	1	60.851	4.162	0.05
Within Groups	467.885	32	14.621		

Table 23

ANALYSIS OF VARIANCE

FOR TOTAL GROUP MEMBER ROLES

OF MALES AND FEMALES

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Groups	2283.351	1	2283.351	6.216	0.02
Within Groups	19100.297	52	367.313		

Table 24

RANKINGS OF INFLUENCE

FOR MALES AND FEMALES

		RANKINGS OF INFLUENCE	
	Males	Task Dimension	Group Building and Maintenance Dimension
SEX	Males	$\bar{x}$=2.6	$\bar{x}$=3.3
	Females	$\bar{x}$=3.8	$\bar{x}$=3.6

Table 25

ANALYSIS OF VARIANCE

FOR TASK DIMENSION RANKINGS

OF MALES AND FEMALES

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F	Significance
Between Groups	14.316	1	14.316	9.898	0.002
Within Groups	75.211	52	1.446		

results indicated that males achieved significantly better task dimension rankings than did the females ($p<0.002$).

Hypothesis 3 - For Differences between Males and Females

There will be no significant difference between the amount of satisfaction with:

the group process

the decision made

the individual's participation

of the male and female subjects.

This hypothesis is stated in the null form and the direction of testing was to reject the null hypothesis at the .05 level of significance.

The ANOVA results indicated that there were no significant differences between males and females in their ratings of satisfaction. Thus, the null hypothesis was not rejected.

Table 26 presents the mean ratings of satisfaction given by males and females. As stated above, there were no significant differences between the men and women. However, an examination of the data presented on this table indicated that males rated their satisfaction higher than the females did in all areas. That is, the males were consistently more satisfied than the females.

Multiple Regression Analyses

The results of the Multiple Regression analyses indicated that the BSRI masculinity score and the BSRI femininity score account for little of the variability in the task, group building and maintenance, or

Table 26

RATINGS OF SATISFACTION

OF MALES AND FEMALES

		RATINGS OF SATISFACTION			
		Satisfaction with Group Process	Satisfaction with the Decision Made	Satisfaction with Own Participation	Overall Satisfaction
SEX	Males	$\bar{x}$=5.33	$\bar{x}$=5.53	$\bar{x}$=5.60	$\bar{x}$=5.49
	Females	$\bar{x}$=5.14	$\bar{x}$=4.96	$\bar{x}$=5.18	x=5.09

individual role performances. Relatedly, the correlations between the scores and the role performances are extremely weak and not significant.

Table 27 presents the summary table for the multiple regression analysis using task roles as the dependent variable. The amount of variance accounted for is indicated in the R Square Change column; the masculine score accounts for less than 1% of the variability and the feminine score accounts for 1%. The Beta column numbers indicate correlations. The correlations between masculine scores and task roles (-0.04) and the feminine score and task roles (0.10) are extremely weak, indicating no significant relationships between the BSRI scores and task role performance.

The summary of the multiple regression analysis using group building and maintenance role performance as the dependent variable is presented on Table 28. Again, little of the variability is accounted for by the masculine score or the feminine score, 8% and 6%, respectively, and the correlations between these scores are weak and not significant, -0.26 and -0.24, respectively.

Table 29, the multiple regression analysis summary using individual roles as the dependent variable, presents more of the same--little variability accounted for by the masculine score (5%) and the femininity score (8%), and weak correlations (0.24 and -0.18, respectively). In short, the masculine and feminine scores were not found to be very useful for predicting group member role performance.

Table 27

MULTIPLE REGRESSION ANALYSIS

FOR PERFORMANCE OF TASK ROLES

Variable	Multiple R	R Square	RSQ Change	Simple R	B	Beta
BSRI Masculinity Score	0.03187	0.00102	0.00102	-0.03187	-0.9636058	-0.04190
BSRI Femininity Score	0.11320	0.01281	0.01180	0.10523	2.7-8738	0.10909
(Constant)					27.08308	

Table 28

MULTIPLE REGRESSION ANALYSIS

FOR PERFORMANCE OF

GROUP BUILDING AND MAINTENANCE ROLES

Variable	Multiple R	R Square	RSQ Change	Simple R	B	Beta
BSRI Masculninity Score	0.28513	0.08130	0.08130	-0.28513	-3.082483	-0.26221
BSRI Femininity Score	0.37788	0.14280	0.06150	-0.27317	-3.161250	-0.24905
(Constant)					40.28050	

Table 29

MULTIPLE REGRESSION ANALYSIS

FOR PERFORMANCE OF INDIVIDUAL ROLES

Variable	Multiple R	R Square	RSQ Change	Simple R	B	Beta
BSRI Masculinity Score	0.23196	0.05381	0.05382	0.23196	1.763097	0.24858
BSRI Femininity Score	0.29349	0.08613	0.03233	-0.15769	-1.382837	-0.18056
(Constant)					2.322173	

Summary

The first step in analyzing the data was to classify the subjects according to their BSRI scores. Bem suggests that individuals be categorized into sex-role classifications using the median split scoring system. Based on this scoring system, 20.4% of the subjects fell into each of the androgynous and undifferentiated categories, and 29.6% of the subjects fell into each of the masculine and feminine categories.

In addition to categorizing the subjects in the above manner, the subjects were classified on the basis of the t-ratio. While Bem no longer recommends using the t-ratio to determine androgyny, it is still seen as useful in specifying sex-typing. Based on this scoring system, 37% of the subjects were classified as androgynous, 27.8% as masculine, and 35.2% as feminine.

No significant correlations were found between any of the demographic characteristics of the subjects and their sex-role classifications. However, the nature of the relationship between sex and sex roles proved to be of interest. When subjects were categorized by either scoring system, most men were classified as masculine and the largest percentage of women as feminine, but the men were more likely than the women to be sex-typed. Relatedly, the females in this study were more likely than the males to not adhere to their traditional sex role. That is, there were more women than men who were classified as androgynous and undifferentiated, and more women than men who were cross sex-typed.

Analysis of Variance (ANOVA) was used to test each of the hypotheses. The results of these analyses indicated that there were no

significant differences between the androgynous, masculine, feminine and undifferentiated subjects in the number of group member roles performed, the rankings of influence achieved, nor the ratings of satisfaction given. Thus, none of the hypotheses were rejected.

Despite the fact that there were no statistically significant differences between the subjects in the sex-role classifications based on the median split scoring of the BSRI, an interesting pattern in the data was observed. The masculine subjects were above the sample means in all measured aspects of group member role behavior, while the feminine subjects were consistently below the sample means. Moreover, the masculine subjects performed the greatest number of productive acts (task roles and group building and maintenance roles) as well as the greatest number of unproductive acts (individual roles). The androgynous subjects were second in the number of productive acts performed and the undifferentiated subjects were second in the number of unproductive acts performed.

No specific patterns were apparent in the rankings of influence or the ratings of satisfaction when the subjects were classified into sex roles based on the median split scoring.

To get a better idea of how sex-typing might be related to various aspects of group behavior, the hypotheses were examined using the sex-role classifications determined by the t-ratio scoring system. This examination revealed some significant differences between the masculine, feminine and androgynous subjects and some specific patterns in the data related to each of the three hypotheses. In a sense, the data patterns which were observed in the previous analyses became more visible and defined when the subjects were classified into sex roles using the t-ratio

system.

The masculine subjects performed the greatest number of acts in all group member role categories, while the feminine subjects performed the lowest number. The androgynous subjects consistently fell in between the two. Furthermore, this difference was significant ($p < 0.05$) for the total acts category.

The masculine subjects achieved better rankings of influence on both the task dimension and the group building and maintenance dimension. This difference was significant ($p < 0.02$) on the task dimension.

When looking at the data for ratings of satisfaction, an interesting pattern was observed. Without exception, the androgynous subjects' mean ratings of satisfaction were above the sample mean ratings, and, with only one exception in each classification, the masculine and feminine subjects' ratings were below the sample mean ratings.

Next, the data was analyzed using sex, rather than sex-role classification, as the experimental variable. These analyses indicated that the males had significantly higher BSRI masculinity scores and significantly lower BSRI femininity scores than the females. The men also performed significantly more task roles, group building and maintenance roles, individual roles, and total acts. Furthermore, the males were seen as significantly more influential on the task dimension and were consistently more satisfied (though not significantly so) than were the females.

The multiple regression analyses indicated that little of the variability in group member role performances was accounted for by the BSRI masculinity or femininity scores and that the correlations between

those scores and role performances were weak and not significant. In short, these analyses indicated that the masculine and feminine scores were not found to be useful for predicting group member role performance.

Because there was some concern about using ANOVA repeatedly, discriminant analyses were also done. The results of these analyses indicated that there were no significant interactions between task role performance, group building and maintenance role performance, individual role performance, influence on the task dimension, influence on the group building and maintenance dimension, satisfaction with the group process, satisfaction with the decision made, and satisfaction with the individual's own participation, for the sex role classifications based on either of the scoring systems. Thus, the significant differences found when using ANOVA were not due to interactions between the variables or chance. See Appendix C for discriminant analyses.

The results of the analyses of variance indicated, for the most part, that the null hypotheses should not be rejected. That is, the null hypotheses were found to be true. To cross check, the power of the F tests in these analyses of variance was determined. The power is the probability of rejecting the null hypothesis if it is, in fact, false. The power of the ANOVAs, ranging from .74 to .91, was quite good. The exact results of the power calculations are found in Appendix D.

CHAPTER V

SUMMARY

The Problem

Because of the growing disenchantment with traditional models of sex differences which reflect the exclusiveness of male and female qualities, many psychologists have come to adopt an alternative model--psychological androgyny--which proposes the coexistence of masculine and feminine traits within a single individual. It has been suggested, then, that androgyny, which allows for the integration of both masculine and feminine qualities, opens up a fuller spectrum of behavior to every human being, regardless of sex. Moreover, the research in this area indicates that the androgynous person is able to function in a wider variety of situations than the traditionally sex-typed person. He or she engages in stereotypical masculine and/or feminine behaviors, while the sex-typed individual is seriously limited in the range of behaviors available to them as they move from situation to situation. Because androgynous individuals are not limited by their sex or traditional sex roles, they are considered highly flexible individuals.

Until this study, the research in the area of androgyny has been limited to the study of the behavior of individuals acting alone. Because individuals are perpetually moving in and out of groups, an investigation of the relationship between androgyny and group behavior is of

major importance. In addition, increasing the knowledge of the characteristics of effective group members is of great significance to psychologists in furthering their understanding of human behavior and psychological adjustment. Thus, the study of the effectiveness of androgynous individuals in groups is essential for those who are attempting to give credence to the notion that androgyny is an indication of mental health.

In light of the findings in the areas of group problem solving and psychological androgyny, the present study investigated the relationship between sex roles and group member roles. Specifically, this study attempted to discover if the theorized flexibility and ability to respond to situational demands of androgynous people is apparent in their group behavior. For if they can perform both the necessary group roles-task and social-emotional, rather than being limited to one set of roles because of sex-role stereotypes, they can be considered the most effective group members. Thus, this investigation provides evidence about the critical link between androgyny as a construct and the behavior of those who have been classified as androgynous.

The Purpose

The purpose of this study was to determine if androgynous individuals in problem-solving groups function differently than masculine, feminine, and undifferentiated individuals. More specifically, this researcher investigated if the androgynous participants were the most flexible and effective group members. Flexibility and effectiveness are indicated by the ability to function well on both the instrumental and expressive levels and, thus, the performance of both task and group

building and maintenance roles. In addition, the participants' perceptions of the group process and demographic data were studied to determine if these factors were related to sex-role classification.

The Hypotheses

The hypotheses in this study were stated in the null form. The direction of testing was to reject the null hypotheses at the .05 level of significance.

1. There will be no significant differences between the number of
   - task roles
   - group building and maintenance roles
   - individual roles
   - total acts

performed by the androgynous, masculine, feminine, and undifferentiated subjects.

2. There will be no significant difference between the rankings of influence on the task dimension or the group building and maintenance dimension of the androgynous, masculine, feminine, and undifferentiated subjects.

3. There will be no significant difference between the amount of satisfaction with:
   - the group process
   - the decision made
   - the individual's participation

of the androgynous, masculine, feminine, and undifferentiated subjects.

The Design

As stated earlier, the purpose of this study was to determine if there was any relationship between sex roles and group behavior. To serve this purpose, this researcher used a correlational design. In psychological research, a correlational design is used to enable an experimenter to identify the extent to which variation in one variable corresponds to variation in another. In this investigation, the variables under study were sex roles and various aspects of group behavior (group member role performance, rankings of influence, and ratings of satisfaction).

The Methodology

The methodology employed in this study served to demonstrate the relationship between the subjects' sex-roles--androgynous, masculine, feminine, undifferentiated--and member role--task, group building and maintenance, individual--performances in problem-solving groups. The Bem Sex-Role Inventory (BSRI) was used to determine the sex-role classification for each individual and member role performance was determined from a detailed analysis of the group session video-tapes using the classification system developed by Benne and Sheats in conjunction with National Training Laboratories (NTL). In addition, information from the individual Reaction Questionnaire about the participants' perceptions of the group process and demographic data were collected to determine if these factors were related to sex-role classification.

Analysis of Variance (ANOVA) was the statistical technique used to

test the hypotheses with sex-role classifications as the experimental variables and member role performances, rankings of influence and ratings of satisfaction as the dependent variables. The data was further analyzed using sex as the experimental variable and through the use of multiple regression techniques. In addition, correlations were made between sex-role classifications and several demographic characteristics of the subjects.

The Findings

Analysis of Variance was used to test each of the hypotheses. The results of these analyses indicated that there were no significant differences between the androgynous, masculine, feminine, and undifferentiated subjects in the number of group roles performed, the rankings of influence achieved, nor the ratings of satisfactions given. Thus, none of the null hypotheses were rejected.

Despite the fact that there were no statistically significant differences between the subjects in the sex-role classifications based on the median split scoring of the BSRI, an interesting pattern in the data was observed. The masculine subjects were above the sample means in all measured aspects of group member role behavior, while the feminine subjects were consistently below the sample means.

To get a better idea of how sex-typing might be related to various aspects of group behavior, the hypotheses were examined using the sex-role classifications determined by the t-ratio scoring system. In a sense, the data patterns observed in the previous analyses became more visible and defined when subjects were classified into sex roles using

the t-ratio system.

The masculine subjects performed the greatest number of acts in all group member role categories, while the feminine subjects performed the least. The androgynous subjects consistently fell between the two. Furthermore, this difference was significant ($p < 0.05$) for the total acts category.

The masculine subjects achieved better rankings of influence on both the task and group building and maintenance dimensions. This difference was significant ($p < 0.01$) on the task dimension, with the androgynous subjects being seen as the next most influential and the feminine subjects as the least influential.

When looking at the data for ratings of satisfaction, an interesting pattern was observed. Without exception, the androgynous subjects' mean ratings of satisfaction were above the sample mean ratings, and, with only one exception in each classification, the masculine and feminine subjects' ratings were below the sample mean ratings.

Next, the data was analyzed using sex, rather than sex-role classification, as the experimental variable. These analyses indicated that men performed significantly more acts in all of the group member role categories than the women did. Furthermore, the males were seen as significantly more influential on the task dimension and were consistently more satisfied (though not significantly so) than were the females.

In addition, males had significantly higher BSRI masculinity scores than females did and, conversely, women had significantly higher femininity scores. Relatedly, most men were classified as masculine and most women as feminine. However, the men and women in this study

did differ in the percentage of them who were sex-typed; men were more likely to adhere to their traditional sex role. On the other hand, the women were more likely to not adhere to their traditional sex role. That is, there were more females than males who were classified as androgynous and undifferentiated and more females than males who were cross sex-typed.

The multiple regression analyses indicated that little of the variability in group member role performances was accounted for by the BSRI masculinity and femininity scores and that correlations between those scores and role performances were weak and not significant. In short, these analyses indicated that the masculine and feminine scores were not useful for predicting group member role performances.

Conclusions

Bem has hypothesized that:

> ...non-androgynous individuals would 'do well' only when the situation calls for behavior which is congruent with their self-definition as masculine or feminine, whereas androgynous subjects would 'do well' regardless of the sex-role stereotype of the particular behavior in question. (Bem, 1975a, p. 8)

For the most part, her research findings have supported this hypothesis. That is, she found that androgynous individuals performed as well as masculine subjects on masculine tasks, and as well as feminine subjects on feminine tasks.

The research findings on role differentiation in problem-solving groups indicate that the instrumental orientation and task roles are stereotypically considered masculine tasks. On the other hand, the social-emotional orientation and group building and maintenance roles

are stereotypically considered feminine tasks.

On the basis of this information about stereotypes in groups and Bem's research, several predictions about the results of this study were made. First, it was predicted that the masculine and androgynous subjects would not differ significantly from one another, and that both would perform significantly more task roles and be seen as significantly more influential on the task dimension that the feminine subjects. Another expectation was that the feminine and androgynous subjects would not differ significantly from one another, and that both would perform significantly more group building and maintenance roles and be seen as significantly more influential on the social-emotional dimensions than the masculine subjects. The third prediction was that the androgynous subjects would be most satisfied with their group experience, because they would experience no discomfort about having to perform a cross-sex activity.

The results of this study do not, for the most part, fit with these predictions. The masculine subjects proved to be the most active on all measured aspects of group member role behavior; they performed the most task roles and the most group building and maintenance roles. They were also seen by the group members as the most influential on both dimensions. The androgynous subjects were never far behind, and rarely significantly different on any measure. The feminine subjects were, however, generally low on most measures.

The andorgynous subjects did appear to be the most satisfied with all aspects of the group process. But, like many of the results in this study, differences between sex-role classifications were not statisti-

cally significant.

If a generalization had to be made from these results, it would be that the masculine subjects appeared to be the most effective group members. The exact reasons for this can never be known--one can only speculate. Perhaps, because masculine characteristics have been found to have greater social value (Broverman, et al., 1970), the masculine subjects were more confident in this situation. Or perhaps the task orientation of the group and the severe time limitation for task completion called for the leadership and aggressiveness (masculine characteristics from the BSRI) of the masculine subjects. These same characteristics, on the other hand, may have kept some less confident and assertive members, particularly the feminine subjects (who have been characterized on the BSRI as shy and yielding), from participating fully.

In this study, 75% of all acts were task oriented and 16% were social-emotional in orientation. In a study by Mann (1961), he established that the greater the task orientation, the greater the number of task roles. He found 70% task roles and 18% social-emotional roles in what he labeled a "task climate", and 66% task and 23% social-emotional roles in a "social-emotional climate". The groups in Bales' 1958 study had 63% task and 26% social-emotional roles. Thus, when comparing the percentages of task and social-emotional roles in this study with those in previous problem-solving group studies, the extreme task orientation and climate of these groups is evidenced.

This researcher hypothesizes that it may bave been the interaction of all the above mentioned circumstances which caused the resultant high activity of the masculine subjects. The judges who analyzed the video-

tapes commented on the rigorous task orientation of the groups. It appeared to them that most of the group members were extremely conscious of the time limitation and the need to complete the asigned task. According to stereotypes masculine individuals "do well", some might say thrive, in that kind of group environment. Thus in their element, they were able to "do their thing"--lead, assert themselves, and dominate.

The question of why the masculine subjects performed more group building and maintenance roles than the feminine subjects, when the social-emotional orientation is not a stereotype for them, can be answered similarly. Because the subjects in this study were primarily from the department of Guidance and Counseling (63%) and were, for the most part, upper level master's students (61.3% had completed more than 20 graduate hours), the possibility that they had been exposed to some important aspects of group dynamics is great. That is, these individuals may have learned that if a problem-solving group is to be effective, the members, while attempting to move toward a solution, must also attend to the social and emotional climate of the group. It appears that the masculine subjects have learned their lesson well. That is, they have learned the importance of group building and maintenance roles and, in turn, have fit those roles into their stereotypical ways of leading, dominating, and asserting themselves.

The significant differences between the males and females in this study are inconsistent with the previous research findings related to sex differences in role differentiation in groups. Past research indicated that while males specialized in task roles, females specialized in social-emotional roles. In this study, the males were leaders in both

areas. The above hypothesized explanations for the dominance of the masculine subjects in the stereotypically feminine social-emotional arena, are useful in accounting for these inconsistent findings.

The results of the multiple regression analyses indicate that knowing the extent to which an individual is stereotypically masculine or feminine does not provide one with enough information to predict that individual's behavior patterns in these groups. These findings substantiate the premise, advanced by those who advocate the adoption of the model of psychological androgyny, that traditional means of assessing masculinity and femininity are not useful. It appears that it is the understanding of the interaction between masculinity and femininity that is important and necessary for predicting behavior.

In conclusion, this researcher urges psychologists and other professionals to investigate further the model of psychological androgyny, in order to increase our understanding of the interaction between masculinity and femininity. The differences between males and females have been studied and restudied, it is time to move on. It is this author's belief that research in the area of psychological androgyny will be of great significance to psychologists in advancing our knowledge of human behavior and psychological adjustment.

Recommendations

1. Further research, using varied populations and varied experimental methods, should be done in the area of psychological androgyny. More evidence is needed about the critical link between androgyny as a construct and the behavior of those who have been classified as androgynous.

2. Relatedly, the BSRI should be investigated further. The scoring is problematic and the lack of national norms may be prohibiting accurate classifications.

3. Construction of another instrument to assess androgyny should be given careful consideration.

4. If this study were to be repeated, several changes are recommended. First, it is suggested that the group sessions be longer or that the groups be observed for several sessions. It is also recommended that a more specific and exact system of analyzing the group behavior be used.

5. Similar studies should be done using other kinds of groups. These groups could be therapy groups, personal growth groups, human relations training groups, or various "natural" groups such as families, teams, or committees.

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APPENDIX A

MATERIALS AND INSTRUMENTS

DEMOGRAPHIC INFORMATION

Name _____

Address _____

Phone _____

Occupation _____

1. Sex:
   _____ 1) Female
   _____ 2) Male

2. Age:
   _____

3. Ethnic Backround:
   _____ 1) Asian
   _____ 2) Black
   _____ 3) Caucasian
   _____ 4) Hispanic
   _____ 5) Other_____

4. U.S. Citizen:
   _____ 1) Yes
   _____ 2) No

5. Religious preference:
   _____ 1) Catholic
   _____ 2) Jewish
   _____ 3) Protestant
   _____ 4) Other_____
   _____ 5) None

6. Marital status:
   _____ 1) Single
   _____ 2) Married
   _____ 3) Separated
   _____ 4) Divorced
   _____ 5) Widowed
   _____ 6) Religious

7. If married, how many years?
   _____

8. Are you a parent?
   _____ 1) Yes
   _____ 2) No

9. If you are a parent, how many children do you have?
   _____

10. Graduate program:
    _____ 1) Ed. Administration
    _____ 2) Curriculum
    _____ 3) Foundations of Ed.
    _____ 4) Guid. and Counseling
    _____ 5) Other_____

11. Number of graduate hours completed:
    _____

12. Degree sought:
    _____ 1) Master's
    _____ 2) Ed. D.
    _____ 3) Ph. D.
    _____ 4) Specialist_____
    _____ 5) Special student (just taking courses)

13. Have you taken a course in group dynamics?
    _____ 1) Yes
    _____ 2) No

14. If you have taken a course in group dynamics, please describe the content.
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____

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

Example: sly

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

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

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

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

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

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

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

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

3 Sly

7 Irresponsible

1 Malicious

5 Carefree

1	2	3	4	5	6	7
NEVER OR ALMOST NEVER TRUE	USUALLY NOT TRUE	SOME-TIMES BUT INFRE-QUENTLY TRUE	OCCASION-ALLY TRUE	OFTEN TRUE	USUALLY TRUE	ALWAYS OR ALMOST ALWAYS TRUE

___Self-reliant

___Yielding

___Helpful

___Defends own beliefs

___Cheerful

___Moody

___Independent

___Shy

___Conscientious

___Athletic

___Affectionate

___Theatrical

___Assertive

___Flatterable

___Happy

___Strong personality

___Loyal

___Unpredictable

___Forceful

___Feminine

___Reliable

___Analytical

___Sympathetic

___Jealous

___Has leadership abilities

___Sensitive to the needs of others

___Truthful

___Willing to take risks

___Understanding

___Secretive

___Makes decisions easily

___Compassionate

___Sincere

___Self-sufficient

___Eager to soothe hurt feelings

___Conceited

___Dominant

___Soft-spoken

___Likeable

___Masculine

___Warm

___Solemn

___Willing to take a stand

___Tender

___Friendly

___Aggressive

___Gullible

___Inefficient

___Acts as a leader

___Childlike

___Adaptable

___Individualistic

___Does not use harsh language

___Unsystematic

___Competitive

___Loves children

___Tactful

___Ambitious

___Gentle

___Conventional

Your group is responsible for the welfare of Human Ecology Communes throughout the world. These communes bring together a variety of different kinds of people from all areas of life to see if humans of widely differing backgrounds and outlooks can live together peaceably and productively. Suddenly you learn that the "life-balance" at one of these communes is dangerously upset because of unauthorized nuclear experimentation. The lives of all commune members are imperiled by radioactivity. You receive a desperate call from the leader of that commune asking for help. There are ten people at the commune, but enough water, food, air and space in their anti-radiation shelter for only six of the people for three months, the length of time they will have to spend in the shelter.

They know that, should they decide among themselves which six are to go into the shelter, they are likely to become irrational, even violent. That is why they are calling you to determine which six are to be saved. They will abide by your decision.

Your group at Human Ecology Headquarters has only 30 minutes to make its decision. If you do not, all members of the commune will perish from radioactivity. The six who are selected for survival must be in their shelter in half an hour.

The question before your group is one of human life and of human values. Your choice is very important. You cannot let the ten people fight for survival among themselves, and you must hurry with your decision (Simon, 1974, pp. 66-67).

Your group has 30 minutes to determine which six should go into the shelter. Any questions?

This is all you know about the ten people:

1. nuclear scientist; age 47; his careless experiments caused the dangerous radioactivity
2. his wife; four months pregnant
3. Marxist revolutionary; third-year medical student
4. famous psychologist-author; unmarried woman; 60 years old
5. alcoholic priest; 50 years old
6. professional football player; very low IQ
7. high-school sophomore and majorette
8. a skilled manual worker; 30 years old; illiterate
9. a young female physician; capable but known to be unstable
10. a 22-year-old female-rights militant; lesbian

1. How satisfied are you with the process your group went through in attempting to reach a decision?

dissatisified 1 2 3 4 5 6 7 satisfied

2. How satisfied are you with the decision made by your group?

dissatisfied 1 2 3 4 5 6 7 satisfied

3. How satisfied are you with your participation in the group?

dissatisfied 1 2 3 4 5 6 7 satisfied

4. Who in your group was most influential in helping the group reach its decision?

Rank all members in your group including yourself.

most influential 1. _____

2. _____

3. _____

4. _____

5. _____

least influential 6. _____

5. Who in your group was most influential in maintaining internal harmony and facilitating communication?

Rank all members in your group including yourself.

most influential 1. _____

2. _____

3. _____

4. _____

5. _____

least influential 6. _____

APPENDIX B

DEMOGRAPHIC DATA CROSSTABULATED WITH SEX-ROLE CLASSIFICATIONS

Table 30

CROSSTABULATION OF THE DEMOGRAPHIC DATA

WITH SEX-ROLE CLASSIFICATIONS

BASED ON THE MEDIAN SPLIT SCORING OF THE BSRI

	Masculine %	Androgynous %	Feminine %	Undifferentiated %
Sex				
Female (n=39)	15.4	23.1	35.9	25.6
Male (n=15)	66.7	13.3	13.3	9.1
Age				
20-29 (n=28)	35.7	14.3	25.0	25.0
30-39 (n=16)	25.0	25.0	37.5	12.5
40-49 (n=5)	20.0	20.0	20.0	30.0
over 49 (n=1)	0	100.0	0	0
no answer (n=4)	25.0	25.0	50.0	0
Race				
Black (n=5)	20.0	40.0	40.0	0
Caucasian (n=49)	30.6	18.4	28.6	22.4
Religion				
Catholic (n=32)	28.1	12.5	43.8	15.6

	% Mas.	% Andro.	% Fem.	% Undiff.
Jewish (n=4)	25.0	50.0	0	25.0
Protestant (n=10)	50.0	20.0	0	30.0
Other or None (n=8)	12.5	37.5	25.0	25.0
Marital Status				
Single (n=20)	30.0	30.0	20.0	20.0
Married (n=18)	27.8	33.3	5.6	33.3
Separated (n=1)	0	0	100.0	0
Divorced (n=4)	0	25.0	75.0	0
Widowed (n=1)	100.0	0	0	0
Religious (n=10)	40.0	0	50.0	10.0
Graduate Program				
Administration and Supervision (n=9)	44.4	33.3	22.2	0
Curriculum (n=3)	0	33.3	33.3	33.3
Foundations of Education (n=1)	0	0	100.0	0
Guidance and Counseling (n=34)	32.4	14.7	29.4	23.5
Student Personal Work (n=2)	50.0	0	50.0	0
Nursing (n=3)	0	33.3	0	66.7
Other (n=2)	0	50.0	50.0	0
Number of Graduate Hours				
0-10 (n=9)	33.3	22.2	11.1	33.3
11-20 (n=7)	42.9	28.6	28.6	0

	% Mas.	% Andro.	% Fem.	% Undiff.
21-30 (n=21)	38.1	14.3	23.8	23.8
31-40 (n=7)	0	28.6	42.9	28.6
over 50 (n=4)	0	50.0	50.0	0
Degree Sought				
Masters (n=38)	34.2	18.4	26.3	21.1
Ed.D. (n=2)	0	50.0	50.0	0
Ph.D. (n=7)	28.6	14.3	42.9	14.3
Specialist (n=2)	0	50.0	0	50.0
Special Student (n=5)	20.0	20.0	40.0	20.0
Highest degree attained				
Bachelors (n=41)	34.1	17.1	26.8	22.0
Masters (n=11)	18.2	27.3	36.4	18.2
Doctorate (n=2)	0	50.0	50.0	0
Completion of a course in group dynamics				
Yes (n=18)	22.2	27.8	33.3	16.7
No (n=36)	33.3	16.7	27.8	22.2

Table 31

CROSSTABULATION OF THE DEMOGRAPHIC DATA

WITH SEX-ROLE CLASSIFICATIONS

BASED ON THE T-RATIO SCORING OF THE BSRI

	Masculine %	Androgynous %	Feminine %
Sex			
Female (n=39)	15.4	38.5	46.2
Male (n=15)	60.0	33.3	6.7
Age			
20-29 (n-28)	25.0	42.9	32.1
30-39 (n=16)	31.25	25.0	43.75
40-49 (n=5)	40.0	40.0	20.0
over 49 (n=1)	0	100.0	0
no answer (n=4)	25.0	25.0	50.0
Race			
Black (n=5)	20.0	20.0	60.0
Caucasian (n=49)	28.5	38.8	32.6
Religion			
Catholic (n=32)	21.9	31.3	46.9

	Mas.%	Andro.%	Fem.%
Jewish (n=4)	50.0	50.0	0
Protestant (n=10)	40.0	60.0	0
Other or None (n-8)	25.0	25.0	50.0
Marital Status			
Single (n=20)	20.0	20.0	40.0
Married (n=18)	38.9	50.0	11.2
Separated (n=1)	0	0	100.0
Divorced (n=4)	0	25.0	75.0
Widowed (n=1)	100.0	0	0
Religious (n=10)	30.0	20.0	50.0
Graduate Program			
Administration and Supervision (n=9)	55.5	33.3	11.1
Curriculum (n=3)	0	66.7	33.3
Foundations of Education(n=1)	0	0	100.0
Guidance and Counseling (n=34)	29.4	32.4	38.3
Student Personal Work (n=2)	0	50.0	50.0
Nursing (n=3)	0	66.7	33.3
Other (n=2)	0	50.0	50.0
Number of Graduate Hours Completed			
0-10 (n=9)	33.3	55.5	11.1
11-20 (n=7)	28.6	42.9	28.6

	Mas.%	Andro.%	Fem.%
21-30 (n=21)	28.6	33.3	38.1
31-40 (n=7)	14.3	42.9	42.9
41-50 (n=3)	66.7	33.3	0
over 50 (n=4)	25.0	25.0	50.0
Degree Sought			
Masters (n=38)	26.4	42.1	30.6
Ed.D.(n=2)	50.0	0	50.0
Ph.D.(n=7)	42.9	0	57.2
Specialist (n=2)	0	100.0	0
Special Student (n=5)	20.0	40.0	20.0
Highest Degree Attained			
Bachelors (n=41)	26.8	39.0	34.2
Masters (n=11)	36.4	27.3	36.4
Doctorate (n=2)	0	50.0	50.0
Completion of a course in group dynamics			
Yes (n=18)	22.2	38.9	38.9
No (n=36)	30.5	36.1	33.3

APPENDIX C

DISCRIMINANT ANALYSES

Table 32

CANONICAL DISCRIMINANT FUNCTIONS
OF THE EIGHT DEPENDENT VARIABLES*
FOR SEX-ROLE CLASSIFICATIONS BASED
ON THE MEDIAN SPLIT SCORING OF THE BSRI

Function	eigenvalue	percent of variance	Cumulative Percent	Canonical Correlation	:	After Function	Wilks' Lambda	Squared	D.F.	Significance
						0	0.5478649	12.335	16	0.7206
1	0.55062	75.66	75.66	0.5958986	:	1	0.8495283	3.343	7	0.8516
2	0.17712	24.34	100.0	0.3879068	:					

Standardized Canonical Discriminant Function Coeffecients

Dependent Variables*	Function 1	Function 2
Task Roles	0.48669	0.67663
Group Building and Maintenance Roles	-0.72737	-0.82079
Individual Roles	-0.57670	-0.02697
Satisfaction with Group Process	0.39693	-0.43533
Satisfaction with Decision Made	-1.18961	-0.16137
Satisfaction with Participation	0.65280	-0.81475
Influence on Task Dimension	-0.18801	-0.92753
Influence on Maintenance Dimension	0.36228	0.09143

Table 33

CANONICAL DISCRIMINANT FUNCTIONS
OF THE EIGHT DEPENDENT VARIABLES*
FOR SEX-ROLE CLASSIFICATIONS BASED
ON THE T-RATIO SCORING OF THE BSRI

Function	eigenvalue	Percent of variance	Cumulative Percent	Canonical Correlation	: After Function	Wilks' Lambda	Chi-Squared	D.F.	Significance
					: 0	0.6350924	12.031	16	0.7419
1	0.29121	57.02	57.02	0.4748999	: 1	0.8200348	5.2578	7	0.6285
2	0.21946	42.98	100.0	0.4242231	:				

Standardized Canonical Discriminant Function Coefficients

Dependent Variables*	Function 1	Function 2
Task Roles	-0.20000	0.25997
Group Building and Maintenance Roles	0.20492	-0.00804
Individual Roles	0.92048	0.16130
Satisfaction with Group Process	-0.36284	0.66544
Satisfaction with Decision Made	0.33881	-0.45331
Satisfaction with Participation	-0.47264	0.07660
Influence on Task Dimension	-0.52004	0.46866
Influence on Maintenance Dimension	-0.29369	0.98964

APPENDIX D

POWER OF THE ANALYSES OF VARIANCE

Table 34

POWER OF THE ANALYSIS OF VARIANCE

FOR HYPOTHESIS 1

	α	n	$\mu_j - \mu$	0	ν_1	ν_2	Power
Median Split Scoring							
Task	.05	13	7	1.63	3	50	.75
Group Building and Maintenance	.05	13	3	1.67	3	48	.78
Individual	.05	13	2	1.78	3	30	.82
Total	.05	13	10	1.78	3	50	.84
T-Ratio Scoring							
Task	.05	18	7	2.09	2	51	.87
Group Building and Maintenance	.05	18	3	1.99	2	49	.86
Individual	.05	18	2	2.20	2	31	.91
Total	.05	18	10	2.19	2	51	.90

Table 35

POWER OF THE ANALYSIS OF VARIANCE

FOR HYPOTHESIS 2

	α	n	$\mu_j - \mu$	0	ν_1	ν_2	Power
Median Split Scoring							
Task Dimension	.05	13	.45	1.84	3	50	.85
Group Building and Maintenance Dimension	.05	13	.45	2.02	3	50	.91
T-Ratio Scoring							
Task Dimension	.05	18	.45	2.25	2	51	.93
Group Building and Maintenance Dimension	.05	18	.45	2.33	2	51	.94

Table 36

POWER OF THE ANALYSIS OF VARIANCE

FOR HYPOTHESIS 3

	α	n	$\mu_j - \mu$	0	ν_1	ν_2	Power
Median Split Scoring							
Process	.05	13	.75	1.83	3	50	.85
Decision	.05	13	.75	1.60	3	50	.74
Participation	.05	13	.75	2.03	3	50	.92
Average	.05	13	.75	2.03	3	50	.92
T-Ratio Scoring							
Process	.05	18	.75	2.14	2	51	.90
Decision	.05	18	.75	1.87	2	51	.83
Participation	.05	18	.75	2.42	2	51	.96
Average	.05	18	.75	2.49	2	51	.97

APPROVAL SHEET

The dissertation submitted by Judith Ann Hansen has been read and approved by the following committee:

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

April 23, 1979
Date

Gloria J. Lewis
Director's Signature