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AMERICAN ACCULTURATION AND ANDROGYNY

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A CROSS-CULTURAL STUDY OF THE RELATION BETWEEN
DEGREE OF AMERICAN ACCULTURATION
AND ANDROGYNY

A Dissertation
Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
Chui-Liu Serena Gui
August 1984

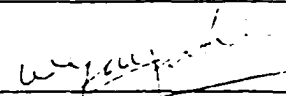
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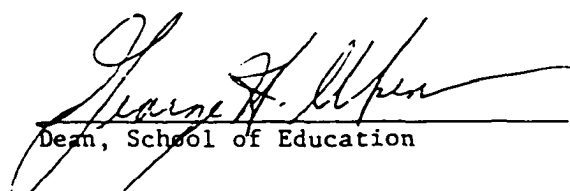
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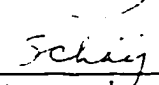
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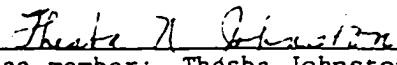
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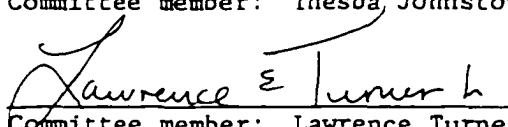
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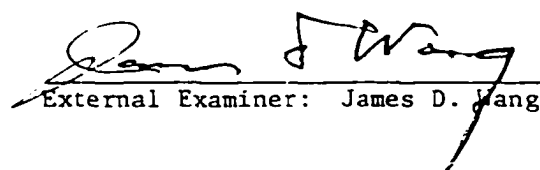

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Committee member: Selma Chaij


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ABSTRACT

A CROSS-CULTURAL STUDY OF THE RELATION BETWEEN
DEGREE OF AMERICAN ACCULTURATION
AND ANDROGYNY

BY

Chui-Liu Serena Gui

Chairman: W. G. A. Futcher

ABSTRACT OF GRADUATE STUDENT RESEARCH

Dissertation

Andrews University

School of Education

Title: A CROSS-CULTURAL STUDY OF THE RELATION
BETWEEN DEGREE OF AMERICAN ACCULTURATION AND
ANDROGYNY

Name of researcher: Chui-Liu Serena Gui

Name and degree of faculty advisor: W. G. A. Fitcher,
Ph.D.

Date completed: August 1984

Problem

Research has identified culture as one of the factors which reinforces sex-appropriate behaviors and punishes inappropriate behaviors for each gender. The purpose of this study was to validate the theory that culture is an influencing factor in the development of sex-role acquisition through studying two diversely different cultures.

Method

This study employed the Bem Inventory for the measurement of sex-role typing. There were a total of 374 college-age females from either a Chinese culture or Anglo-American culture who participated in the study. The subjects were divided into five groups according to the degree of American acculturation. Three null hypotheses were postulated.

Findings

1. There were significantly more Anglo-American females in the sex-typed category called androgynous as compared to the four Chinese female groups.

2. There was a higher percentage of Anglo-American females in Bem's feminine category than Chinese females from Hong Kong and Singapore.

3. The percentage of females in the undifferentiated category was higher for all four Chinese groups as compared to the Anglo-American group.

4. The proportion of subjects in the androgynous category increased as expected from Group 1 to Group 5 with the exception of Group 4.

5. The Hong Kong and Singapore Chinese group had the highest proportion of females classified in the masculine category, and the lowest proportion in the feminine category.

6. There were significant differences in both

masculinity and femininity mean scores among the five groups.

7. Both Anglo-American females and Chinese females who came to the United States before the age of ten had a masculine mean score which was significantly higher than that of Chinese females from Hong Kong and Singapore.

8. American-born Chinese females generally scored low in masculine and feminine scales as compared to the Chinese who came to the United States before the age of ten.

9. Chinese females from Hong Kong and Singapore had a significantly lower femininity mean score as compared to all the other groups.

Conclusions

The findings in this study validated culture as an influencing factor in the acquisition of sex-role. Based on the assumption that the Anglo-American culture is more androgynous, results indicated that there were a higher percentage of Anglo-American females than of Chinese females classified as androgynous. It verified the hypothesis which posited that there is a relation between sex-role typing and the degree of American acculturation.

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ACKNOWLEDGEMENTS

In completing the writing of this dissertation and the fulfillment of all the requirements for the degree I want to acknowledge the power of Divine Guidance. God has helped me developed a spirit of perseverance and persistence to stay on the task. He also provides wonderful friends who have given valuable help for me to attain this educational goal I have set.

To my dissertation committee members who worked so closely with me and provided me support and good suggestions I want to say a very special "thank you". I would also like to thank Dr. P. Blitchington who was my original committee chairman in helping me select the topic for the study and in helping me get the dissertation proposal presented and accepted. I am grateful to Dr. W. G. A. Futcher for being willing to assume the chairmanship and working with me in a very helpful and supportive way.

Special thanks go to Ms. Lorena Bidwell for giving me very generously computer time and her personal time in helping me solve those mysterious TXT problems. Mrs. Jones' expert editorial assistance is appreciated.

Finally, I acknowledge my family members who are thousands of miles away for their unfailing love,

support, and tolerance. My father's unconditional acceptance of me in attaining my personal goal even though I have been neglectful in doing my daughterly duty deserves special mention.

CHAPTER I

INTRODUCTION

Statement of the Problem

Traditionally, society at large has adopted a definite concept of femininity and masculinity as a bipolar dimension in sex-role typing. One is either masculine or feminine. In almost all societies men and women are assigned separate behavior roles (Schaffer, 1980). A person who is more assertive and instrumental is defined as being masculine. Consequently, a person who is expressive, nurturant, and compassionate is defined as being feminine. This might make it appear that a person has to be at either extreme, masculine or feminine.

The problem of the psychological nature of a person has created much discussion and been the basis of much study since the field of psychology began. In the last decade the topic of sex-role development and acquisition with its differentiation has been enthusiastically examined. With the feminist movement at its peak in America in the early 1970s, a new perspective on sex-role has emerged. Originally, studies were conducted to examine relationships between gender and psychological

makeup with an orientation towards either masculinity or femininity, and masculine and feminine behaviors. With the new emphasis on sex-role and sex-differences, theorists have postulated a new concept. This new perspective criticizes the traditional concept of sex-role as too confining and stifling, which prevents men and women from truly becoming individuals operating at their optimum. Masculinity and femininity are looked on as two separate entities that could be concurrently possessed by a person instead of as opposite poles of a unidimensional scale. In short, a person can be both masculine and feminine.

Sandra L. Bem (1974) proposed that a person who possesses such multi-qualities and exhibits this range of behaviors be termed androgynous. She or he is a better functioning person, more flexible and better adjusted in most social situations. Bem (1981) further defined psychological androgyny with the implications that it is possible for an individual to be both compassionate and assertive, both expressive and instrumental, both feminine and masculine depending on the situational appropriateness of these various modalities (p. 4). Hendler, in the introduction of Singer's book (1976), wrote, "the message of ANDROGYNY is that the human psyche is comprised of many different dualities that must be kept in balance in order for the individual to be whole, to be truly human" (p. 17).

The Problem

Culture at large has often been designated as the factor which stereotypes sex-roles and sex-behaviors according to gender. It has reinforced sex-appropriate behaviors and punished cross-sex behaviors which are defined as inappropriate for each gender. The understanding of what part culture plays in terms of sex-role acquisition in addition to the biological factors has generated much interest.

To a great extent there are some similar sex-role standards expected of each gender in all cultures. The man is expected to be the leader and the breadwinner for the family. The woman is expected to be expressive and submissive, playing the supportive and mothering role to the husband and children (Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972). However, within each culture differences do exist. There are sex-typed behavior differences between females of one culture and those of another. Likewise, sex-typed behavior differences also exist between males in one culture and another.

Purpose of the Study

The purpose of this study was to examine whether culture is a significant contributing factor to sex-typed behavior. Specifically, does culture affect sex-typing? Studies by Hsu (1980) and Huang (1971) have

indicated that females from American society are more outspoken, open, individualistic, and aggressive, while females from Oriental societies are more family-oriented, submissive, and shy.

Since such differences have been supported empirically, this study sought to examine whether Anglo-American females from a western culture are less sex-typed and more androgynous than Chinese females from an eastern culture. Also, assuming that culture affects one's sex-typed behavior, longer exposure to a less sex-typed but more androgynous culture should increase one's likelihood of being androgynous. This would signify the importance of culture as a factor in terms of sex-role acquisition. Thus, the study examined whether Chinese females who have been exposed to American culture are more androgynous and less feminine sex-typed than Chinese females with little or no exposure to western culture.

Definitions of Terms

Gender is the biological sex of the individual, usually either male or female.

Psychological androgyny infers that each sex will cultivate some of the characteristics usually associated with the other in traditional sex-role definitions (Rossi, 1964, p. 608). It signifies behavior that is not delimited or constrained by prevailing sex-role

stereotypes about what is and is not proper for each sex (Kaplan, 1976). Operationally defined by Bem (1981), psychological androgyny is the capability of an individual to demonstrate both masculine and feminine, both assertive and yielding, both instrumental and expressive behaviors.

Androgyny is used synonymously with psychological androgyny.

Sex-role is defined as prescribed behaviors which have been traditionally assigned by society at large to a person according to the given biological sex. A person who is born with biological male characteristics is assigned behaviors sex-typed as masculine. Similarly, biological females are assigned sex-stereotyped behaviors called feminine.

Sex-typing is a process by which a person acquires a set of attributes culturally prescribed as desirable and acceptable for that person's gender.

Sex-role standard is defined as the sum of socially designated behaviors that differentiate between men and women (Broverman et al., 1972, p. 60).

Undifferentiated sex-role refers to an equal but low endorsement of masculine and feminine characteristics.

Chinese female refers to a female of Chinese descent and ethnic background.

Anglo-American female refers to a female of

Caucasian (white) descent residing in the United of America.

Significance of the Study

Some research literature tends to support the idea that one's sex-role is predominantly a by-product of gender. However, at the opposite pole are found social psychologists and theorists suggesting that culture and environment are the key factors in terms of one's acquisition of a sex-role. While culture has been identified as a contributing factor in sex-role assignment, nothing has been done to validate this position.

This study sought to examine the theory that culture plays a part in sex-role acquisition. Specifically, the theory of sex-role acquisition promulgated by Bem and others (Bem, 1974, 1975; Kaplan, 1976) states that acculturation and socialization determine the process of sex-role acquisition. If that is so, then one should find that, as people move from a rigidly sex-typed culture to a less sex-typed culture, they should become more androgynous. Thus this study was significant in that it tested the impact of culture on sex-role acquisition.

Limitations and Delimitations of the Study

The population for this study was delimited to female subjects from the Anglo-American culture and the Chinese culture. The age group of the subjects studied

was confined to those between the ages of 17 and 25. Sampling of the subjects studied was mainly from females attending colleges or universities in the United States of America and those attending colleges or universities in Singapore and Hong Kong.

The limitations of the study were threefold. First, a generalization of the study cannot be made widely to all Chinese persons. Though there are many similar Chinese practices among all Chinese from every country, cultural differences do exist among Chinese from different geographical locations. Second, generalizations are confined to the specified age group since studies have shown that age is a moderator variable in sex-role acquisition. Third, this study was confined to the American culture and is not generalizable to all western cultures at large.

Organization of the Dissertation

The dissertation is organized as follows: Chapter 1 includes the statement of the problem, purpose of the study, definitions of terms, significance of the study, and delimitations and limitations of the study. Chapter 2 reviews recent literature with research hypotheses postulated for study. Chapter 3 describes the sample groups, instrumentation, and field procedures; it also states the null hypotheses and describes the analysis of data for the study. Chapter 4 presents the data

and the statistical analyses. Chapter 5 summarizes the study, and presents the findings, conclusions, implications, and appropriate recommendations.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

In recent years the study of sex-roles has generated much interest in the field of social psychology. Traditionally sex-roles have been classified as being on a unidimensional continuum, under the assumption that masculine and feminine qualities are bi-polar opposites. This would mean that the possession of one tends to preclude the possession of the other.

Constantinople (1973) observed that the very concepts of masculinity and femininity have been treated as though they represent antipodal points on a continuum. Most men would naturally score at one end and most women score at the opposite end. Thus, one is either masculine or feminine. However, in recent psychological theory, a new assertion has arisen. The traditional conception has been challenged by a number of theorists (Bem, 1974; Block, 1973; Carlson, 1971). These new theories criticized the traditional sex-role continuum as too confining and stereotyping. This new assertion challenges the assumption frequently found in literature

which says that persons who adopt a conventional masculine or feminine role are somewhat more "healthy" than those who are not sex-typed. These theorists propose that masculinity and femininity form essentially independent dualistic dimensions. They argue that the structure of a multi-dimensional construct of masculinity-femininity is possible; one designed to measure variations in subtraits to be scored separately (Constantinople, 1973).

Bem (1974) postulated the theory that masculinity and femininity are dualistic dimensions and began her research in 1974. A major development was the new instrument called the Bem Sex Role Inventory. The inventory has two scales, namely, masculinity and femininity, from which are derived two further measures, undifferentiated and androgynous. She popularized the word "androgyny" to describe one who identifies with both desirable masculine and desirable feminine traits.

Bem's concepts led to further research. Spence, Helmreich, and Stapp (1975) and Spence and Helmreich (1978) provided evidence supporting the dualistic formulation with their self-report instrument, the Personal Attributes Questionnaire (PAQ). The PAQ consists of three scales, each containing eight bipolar items. The Masculinity (M+) scale contains instrumental, agentic traits which are considered stereotypically more characteristic of males. The Femininity (F+) scale contains

socially desirable expressive, communal traits that are stereotypically more characteristic of females. The third scale is labelled the Masculinity-Femininity (M-F) scale which is more bipolar in nature.

This dualistic construct of sex-role was also used by Carlson (1971) in his two studies using projective techniques. One study involved asking the subjects to do a self-disclosure in connection with the environment in the past and to project the person they wish to be in the future. In another study Carlson had the subjects describe their reactive emotions in several different situations. In this study he adopted Bakan's agency-communal model. Through his analysis of the studies he observed that there were subjects who possess both masculine and feminine characteristics and could thus be termed androgynous. Thus an androgynous person is freed from stereotypic sex-role limitations and is able to engage comfortably and effectively in both masculine and feminine activities in diverse social situations (Jones, Chernovetx, & Hansson, 1978).

A number of theorists have claimed that sex differences in instrumentality and expressiveness have their origin, at least in part, in differential socialization experiences including sex-linked child-bearing practices. The differential socialization experiences are influential to the extent that the sex-role division in a given society or culture which emphasizes the split

may carry on to the point where one might expect differential socialization for instrumental and expressive personality traits (Runge, Frey, Gollwitzer, Helmreich, & Spence, 1982, p. 159).

Bem (1974, 1975) has strongly argued that culture with its sex-role standards has, at large, been responsible for instilling the stereotyped sex-role behaviors in each person according to the gender. A boy is expected to be masculine; to engage in activities that are for boys. Likewise, a girl is expected to be feminine, engaging in activities that are feminine, such as playing with dolls, cooking, etc. (Maccoby, 1966).

These sex-role standards have designated behaviors that differentiate between male and female. Thus through the years psychopathologists have considered gender identity to be a crucial factor in personal adjustment. In the past, emphasis has been focused on the conditions and processes which facilitate successful internalization of appropriate sex-role standards (Broverman et al., 1972). Such cultural expectations, according to proponents of androgyny, inhibit the development of a full and satisfying behavioral repertoire and the attainment of one's fullest potentials (Bem, 1976, p. 58.)

Although research on the subject of sex-roles, especially psychological androgyny, is gaining increasing interest in the western societies, few cross-

cultural studies have been conducted. One cross-cultural study (Huang, 1971) looked at the relationship between sex-role stereotyping and self-concept. A more recent study (Hogan, 1979) tested Bem's theory with German and American subjects. In 1982, Runge and his associates made a comparison between students in the United States and West Germany on masculine and feminine traits. Cross-cultural data collected by Block (1973) from the United States and five European countries support the differentiated socialization hypothesis, indicating that, in general, boys are educated to control affect and to display instrumental behavior while girls are encouraged to be emotional, empathic, and to restrain aggression.

With the same hypothesis of socialization influencing sex-role acquisition, it was the intention of this study to examine whether culture has an impact on sex-role acquisition in females. Specifically, the present study was undertaken to examine the impact of culture on sex-role acquisition in females using two cultures diverse in terms of technology and family structure. Based on the general assumption that society defines the characteristics of females which are shared by all cultures, female subjects were used for the study. However, culture as a factor in modifying sex-role acquisition could possibly be seen with the shift from one culture to another. The discussion of sex-role

acquisition in the review of literature follows the following format:

1. Theoretical perspectives of sex-role development
2. Nature versus nurture
3. Theoretical construct of androgyny
4. Sex-role typing--a function of culture

Theoretical Perspectives of Sex-role Development

That there are differences between the genders-- male and female--is an indisputable fact. On examining the physical makeup and appearance, it is evident that differences exist. Anthropological evidence and anecdotal accounts suggest that in most, if not all, countries, men and women are different in their psychological makeup. This means that certain traits are said to be more characteristic of men and others more characteristic of women. Some of these differences center around the issue of the relative contributions of biological and socialization factors.

The biological position of sex-role acquisition is challenged by social-learning theorists and other psychologists. Erikson (1968) proposed that sex typing is more a combination of biological and historical factors in addition to environmental and personality factors. A child may be born with a definite gender, specified male or female characteristics, but according to D'Andrade (1966) the secondary sex characteristics

are not completely under genetic control. Money and Edrhardt (1972) indicate in their studies that children with gender identity different from their genetic sex actually acquired sex-role behaviors and attitudes which agreed with their gender identity instead of their genetic sex.

A child's sex-role can be affected both by cultural and environmental factors. Society's expectations for boys and girls through the years have been stereotyped. They have dictated certain behaviors, toys, colors, and activities to be either masculine or feminine. Social-learning theorists postulate that the operation of selective reinforcement, and imitation and identification has a part to play (Urgerb & Labouvie-Vief, 1976). A child can be taught to identify himself or herself as a male or female through direct instruction (the child is taught to call and perceive him/herself as male or female) or by indirect instruction (a child responding to himself or herself as others respond to him/her) (D'Andrade, 1966).

Even adult sex-roles differ markedly. As noticed, men and women stereotypically do different things. While these differences may seem to decrease, yet the strongest and most consistent sex differences still appear in studies focusing on sex-role behaviors rather than personality traits. Cross-cultural and historical data suggest that, while distinct behavior

appearances are different between men and women, the diffusion of roles is not due solely to biological factors. Rather, culture, to a large extent, has specified them. Also to be noted is the overlap in behavior between the sexes, which suggests that socialization rather than biology is responsible for the bulk of the differences.

There are three main theoretical approaches which attempt to explain the processes underlying the socialization of sex-role behaviors. They are discussed as follows:

1. Psychoanalytically based identification theory
2. Reinforcement and social learning approaches
3. Cognitive developmental theories.

Psychoanalytical Theory

The identification theories of sex-role acquisition are based primarily upon Freudian psychoanalytic psychology. The psychoanalytical explanation for sex-role acquisition is based on anatomical differences (Freud, 1933). Freud proposed that an understanding of human personality traces back to the understanding of the parent-child relationships (Freud, 1925). Freud was aiming specifically at the same-sex parent-child relationship. Freud's understanding of "identification" was defined as a learning process through which children unconsciously "mold" their own "ego-ideal" after that of

their parent model (Freud, 1925). Thus it is through this identification that a child acquires the behaviors which society would require of him or her as an adult, including sex-role behavior.

Basically, psychoanalytic theory assumes that there are two motivational bases for identification: fear of loss of love and fear of retaliation; each eliciting its own form of identification (Freud, 1925; 1933). In the early period of childhood, Freud assumed that the identification process was identical for both sexes. It is at the age of about four that a child is able to discriminate between the genitals of the sexes and to experience genital sexual pleasure that the identification experiences diverge. Based on the Oedipal Complex and fear of castration and penis-envy assumption, the theory postulated that girls tend to be motivated by fear of loss of love, resulting in their identification with the mothers. In turn, boys are motivated by the fear of retaliation and thus identify with the fathers. Erikson (1964) further explained the concept that a lack of a penis in girls results in an inner sense, the feminine; while the presence of one in boys results in an outer sense, the masculine. Respectively, each acquires feminine and masculine qualities which society has set up.

Freud assumed that an individual's acquisition of sex-role is based on the basis that everyone is born

with a bisexual potential. He noted that each individual displays both masculine and feminine characteristics. Singer (1976), when reviewing the work done by Freud (1920), stated that the concept of bisexuality is the central theme of the psychoanalytic theory. Freud saw bisexuality as a biological universal for both animals and human beings, and thus an important influence on the psychological makeup. Singer (1976) wrote: "The biological basis of bisexuality, as Freud saw it, led logically to his central thesis--that bisexuality is at the heart of psychopathology" (p. 30). Thus the theme of androgyny was suggested at that time.

Much of Freud's theory was not derived from empirical data. Some studies have attempted to address these basic assumptions. Attempts to find consistency of behaviors over time were made in the researches of Kagan and Moss (1962) and Mussen (1969), who reported that "sex typing begins very early and becomes crystallized during the first few years of the child's life" (p. 712). While these data seem to support the assumption of identification theories, it is not clear that identification is the process responsible for the behavioral consistencies. The study by Fagot and Litman (1975) indicated that patterns of play were stable for boys from three to ten years of age but not for girls. It would be presumptuous at this point to conclude that identification theory is the reason of stability in sex-

role behavior since reinforcement can equally yield the same prediction.

It has been difficult to find empirical data to support internal motivation for sex-role behavior. It is also difficult to measure unconscious motives. Indirect assessment of these has been attempted by Frieze and his associates (1978) who commented that the data produced are far from being conclusive. Mussen and Distler (1959) noted that parents have salient importance in the child's life. At this point there seems to be little evidence to support the existence of identification and much less to support the contention that identification accounts for sex-role learning.

In spite of criticism of the hypotheses which Freud and his colleagues have postulated, the psychoanalytical approach with Freud as the leader has been considered by some as the breakthrough in the understanding of human development and orientation.

Social Learning Theory

Social learning is based on the principles of reinforcement and modeling, to explain sex-role acquisition, which came from a behaviorist orientation. Social learning theorists maintained that sex-role behavior is acquired through external social forces as coupled by modeling and reinforcement. The persistence of a sex-typed behavior only occurs as society

consistently responds to that behavior (Gewirtz, 1969). General behavior is not consistent across situations or time; it is flexible (Mischel, 1970). As much as they agree with psychoanalytical identification theorists that sex-role learning occurs when the child is relatively young, they do not view sex-role learning as permanent or inflexible.

Social-learning theorists do not assume that an emotional tie is a prerequisite for modeling. Instead, they propose that nurturance on the part of the model may facilitate imitation. Also, imitation can take place without emotional ties if reinforcement is provided for the imitated behavior. Thus, unlike the psychoanalytical identification theory, social-learning theory proposes that sex-role behavior is acquired through imitation of a wide variety of models (Bandura, 1969). Frieze and his associates (1978) summed it up by saying that "each child's role behavior is a unique composite of all his learning experience, rather than a carbon copy of the same-sex parent " (p. 106).

Plainly, social-learning theory postulates that the mechanism to explain sex-role acquisition is that reinforcement increases the occurrence of the reinforced behavior. Studies have been reviewed extensively by Maccoby and Jacklin (1974) to substantiate the fact that children acquire certain behaviors largely through reinforcement by parents and by societal stereotyping

standards. Thus they are molded for what they are, respectively. Each sex is reinforced differently for sex-role appropriate behavior.

In addition to reinforcement as a mechanism for sex-role acquisition, observational learning and imitation are two more factors to be considered. These two processes produce what is called "modeling." Extensive studies assume that observational learning and imitation are essential to the acquisition of social behavior (Bandura, 1969; Bandura & Walter, 1963; Mischel, 1966, 1970).

The implication of social-learning theory on the concept of androgyny depends on the fact that a child has the opportunity to model after both sexes. The exposure to both masculine and feminine behaviors early in life provides the chance for imitation. Thus, early in life each person, regardless of the sex, has acquired the necessary skills to be androgynous. However, with societal norms and sex-stereotyped standards, one tends to lean towards a more sex-appropriate behavior according to one's biological sex orientation.

Thus far, it seems that both identification and social-learning theories have only interpreted sex-role acquisition in role socialization with little consideration of the role of the child as an active agent. The next section on the cognitive-development interpretation

offers an explanation which includes both the child and the social environment.

Cognitive Theory

From the cognitive theory perspective sex-role development is a part of an individual's progressive understanding of role prescription (Urgerb & Labouvie-Vief, 1976, p.15). It assumes that children play an active part in their own development. Underlying these theories is the assertion that children are motivated by a desire for competence and mastery over their world, thus seeking information to improve their interaction with both their physical and social worlds. Another assumption stresses the child's interaction and interpretation of his/her world as limited to his/her cognitive maturity, which, in turn, is linked to his/her present stage of development (Frieze, Parsons, Johnson, Ruble, & Zellman, 1978)

Kohlberg (1966, 1969) has hypothesized that children first learn through self-identity and then attempt to acquire and master sex-appropriate activities. He described three stages. The first stage is called the gender identity where a child discovers that people come in two sexes and that he/she falls into one of these two groups (Kohlberg, 1966). Soon the child learns to categorize others as females or males. This gender identity becomes stable with the passage of time.

At the age of five or six the child reaches the constancy of gender identity. Soon he/she begins to categorize behaviors and objects as appropriate for one sex or the other. With these categories, the basis for later stereotypes is formed. At the second stage, a child develops a system of values for various behaviors and attitudes. Specifically, each child learns to value behavior and attitudes associated with his/her own sex more than those of the opposite sex. As a result of this differential valuing, children begin to imitate sex-appropriate behaviors and to avoid sex-inappropriate behaviors and objects. Finally, the third stage describes the child's development of emotional attachment (identification) with the same sex parent as a result of the different values and modeling. This attachment leads on to further imitative behavior and role structure.

Money (1961) and Hampson and Hampson (1961) have further supported the idea that sex-role acquisition results from learning processes. Research findings by Money and his associates (Money & Ehrhardt, 1972; Money & Tucker, 1975) report that an established gender identity plays a significant role in the development of a solid psychological self. From their study with pseudo-hermaphrodites they indicated that gender can be reassigned up to about age fifteen months without any psychological danger. However, after age three years a

reassignment of gender is psychologically dangerous. This finding leads to the conclusion that there is a definite time period for the establishment of sex-role, self-perceived as either male or female.

In the framework of the cognitive theories, it is postulated that, once a child has his/her gender identity defined, he also begins to stereotype behavior and objects and form a schema of what is male and what is female (Kohlberg, 1966). Children use these schemata as a framework for interpreting what they see and to predict future behavior. Thus, through assimilation of new information, they develop through the schemata, expectancies regarding human behavior in general. This postulate is supported by consistent empirical evidence. By the age of four, preschool children are well aware of cultural stereotypes regarding sex differences and use these stereotypes to predict behavior (Schell & Silber, 1968; Nadelman, 1974). Frieze and his associates (1978) summed up their study with the statement that "it is this process, that is the formation of male and female schemata through categorization, assimilation, and generalization, that is the basis for a child's creation of sex-role stereotype" (p. 128).

From Kohlberg's cognitive approach, an implication towards androgyny is evident. An individual's cognitive functioning becomes more complex, less egocentric, and more flexible as he/she becomes more mature

chronologically. Initially, as observed, children are more stereotypic in their thinking. However, with the flexibility in thinking as they mature it is possible to encourage one to develop less stereotypic and perhaps more androgynous behaviors.

Comparison of Theories

After examining theories with respect to the acquirement of sex-role it is essential to note the similarities and differences in their definitions of sex-role. Undoubtedly, from the traditional view-point, sex-role is first associated with gender. The importance of gender identity cannot be over-stressed. It is the crucial factor in personal adjustment. With this assumption, culture as a whole has instituted standards which prescribe certain behaviors appropriate for males and certain behaviors appropriate for females.

Biological theorists tend to assume the position that the biological sex establishes one with a sex-role identity that is directly corresponding to the given gender-identity. Hutt (1972) concluded that there is evidence to date which shows that no sexual neutrality exists in the human species. In saying this she stressed the point that she is not undermining the importance of social influences; that in fact, social influences act upon an organism that is already biased in a male or female direction.

Along the same line of thought social theorists and cognitive theorists advocate and define sex-role as an identity that is acquired by each individual according to the gender in which one is brought up. Sex-role identity is the constellation of qualities an individual understands to characterize males or females as prescribed by the cultural standards.

Generally, it is noticed that all these different theorists indicate that sex-role learning occurs early in life, with empirical support for the prediction. Because the causal factors are unclear, each theory has branched out into different explanations with different emphases. The factors below may explain how the processes underlying sex-role acquisition can be completed. First, sex-role acquisition reflects the complex interaction of many variables and processes. Each of the theories does not provide a complete picture but gives some insight into it and explains some subset of the phenomena of sex-role acquisition. Second, there are three factors which seem to be of prime importance in sex-role acquisition. They consist of the behavior of the individuals in the child's social world, the child's interpretation of these behaviors and of his/her social world in general, and the reactions of other people to the child's behavior. These three factors directly affect the child's immediate behaviors and also mediate the impact of the cultural milieu of any

biological predispositions. Furthermore, Frieze and his colleagues (1978) also advocated that changes in the child's behavior patterns are most likely mediated by the developmental changes in the child's cognitive system and shifts in the reactions of others to his/her behavior. The cognitive changes could alter behavior through his/her perception of others and any situational demands. Also, the shift in reactions of others produces changes through reinforcement principles and by altering his/her conception of the situational demands.

As further noted below, the feminists in the discussion of androgyny proposed to define sex-role from a behavioral point of view. Some have extended its definition to equate it with traits and subtraits of the personality. This concept suggests that an individual should be able to demonstrate both masculine and feminine behaviors unbounded by the gender. Thus a new sex-role type is one which allows an individual to have both masculine and feminine traits and to exhibit and manifest a blend of both of these characteristics which is not limited by what society has labelled as unmanly or unwomanly (Block, 1973).

In sum, it is evident that each of these theoretical models proposed something of importance in contributing to the acquisition of sex-role. It is very apparent that sex-role acquisition is truly a

combination of biological, cognitive, sociological, and cultural factors.

Nature versus Nurture

It has been argued that men and women are destined by biology to play different roles and to have their own distinct personality traits. Freud, the father of psychoanalysis, was an early proponent of this idea, as evidenced by his statement, "anatomy is destiny." He felt that the anatomical differences between the two genders inevitably produces differences in adult temperament and personality. Parson (1980) writes: "Freud suggested that a child's anatomical structure, which is biologically determined, has inevitable and irreversible effects on the child's personality development that are independent of any differential treatment from socialization agents" (p. 3). Following Freud's view, other recent biological theories stress hormones, genes, and developmental rates as key factors, and still see biological factors as predominantly the primary determinant of sex differences (Frieze et al., 1978). Thus, these theories tend to project that, because of the biological differences, males and females also are destined to fulfill different tasks in life.

At the other extreme, there are theories which propose that men and women are seen as very similar in all but their reproductive functions. In this view,

differences in sex-roles are assumed to be the results of socialization and not biology. Much debate is going on concerning these two poles. To simplify the matter, this discussion has often reverted to the more simplistic issue of looking at sex-roles as the result of either nature or nurturance. However, most scientific investigations in the 1980s do not take a simple either/or position concerning the determinants of sex-role differences. Many hold the view that human development is an interaction of both the biological factor as resulting from nature and the experiences with the environment through nurturance.

In determining the role of biological factors in sex differences, different approaches have been used. One way was to study very young infants. If sex-differences are present at or near birth, it is possible that these differences are innate. The second approach utilizes anthropological universals. If corresponding differences between males and females in varied cultures are evident, then there are grounds to speculate about possible biological precursors. However, anthropological findings within either a nurturant socialization setting or in a natural biological framework are very speculative. It is essential to consider that many cultures emphasized similar sex-role socialization goals. Studies by Best (1977) and by William and Best (1981) indicate that, across the different cultures, there are

general similarities in the traits associated with men and women. Biological processes can be modified to some degree by experiences.

Thus, in the study of young infants, several difficulties are encountered. First, the methodological problems of testing young infants are enormous. There is a problem with studying any behaviors that are generally stable with little fluctuations. Second, difficulty arises when one attempts to consider the kinds of things that infants do as being characteristic of older children or adults. Third, there are always the stereotypic biases of observers which affect the rating of the infants. And, fourth, the different maturation rate between the sexes is another factor which contributes to the methodological problems (Frieze et al., 1978).

The discussion of sex-role as influenced by nature or nurture calls for a consideration of some of the infant characteristics which may be precursors to the major stereotypic sex-differences. Some of these are discussed as follows.

Aggression

Friedman, Richart, and Wiele (1974) reported that many studies have been carried out to substantiate the theory that males are more aggressive than females. The sex difference in aggressive behaviors manifested by

children is commonly seen as early as age three. Cross-cultural studies also indicate that boys up to the age of six or seven in a Melanesian society show much more rough-and-tumble play than do girls (Davenport, 1965). In their extensive review, Maccoby and Jacklin (1974) conclude that boys are more aggressive than girls in every culture studied.

Such differences between the two sexes are often attributed by biological theorists to the presence of androgens in males. Data gathered from ethological observations, field observations, experimentations with animals, and other clinical studies of girls who were androgynized prenatally or early in life have led to the postulation that hormone is related to both the general activity levels and the aggressive behaviors of animals and possibly humans (Goldberg, 1973; Hutt, 1972; Maccoby & Jacklin, 1974; Money & Ehrhardt, 1972). Since male fetuses possess testosterone, it could be predicted that males will be both more active through their life as well as more aggressive in various situations.

Another factor which supports this proposition is the interactions between parents and child in connection with the activity level of the infant. An active infant gets into more trouble, which in turn creates more work for the parents, which in turn may cause less patience and more willingness to punish the child on the part of the parents. If this is so, then boys, who are

presumably more active, are responding to socialization patterns which would make them more aggressive (Bell, 1968).

However, recent studies as reviewed by Maccoby and Jacklin (1974) indicate that there is no consistent sex difference in the general level of infant activity, at least prior to one year of age. This causes some further speculations on the importance of prenatal testosterone for understanding later aggressiveness in boys. Money and Ehrhardt (1972) summed it up by saying that nature appears to have a general rule that the nervous system, if left alone, develops into one that is characteristically feminine. In order for a male type of system to form, some exposure to androgen is necessary at particular developmental periods.

Research has also indicated that post-natal androgens would tend to increase aggressive behavior (Frieze et al., 1978; DeVore, 1965). However, DeVore (1965) suggested that higher levels of progesterones and estrogens increase typical female behavior.

Irritability

There is a possibility that male infants are more irritable than female infants. This difference could be due to genetic or prenatal hormonal factors. This could begin a social interaction pattern that could

lead to boys being more negative, resistive, and aggressive than girls.

As much as researchers with biological theoretical assumptions have tried to find explanation for differences between male and female infants, most studies with regard to sex differences in exploratory behavior and in intellectual and perceptual capabilities have found no significant differences between the sexes (Maccoby & Jacklin, 1974). Biological factors alone operating prenatally and in early infancy cannot explain the much more obvious differences between the activities and interests of older children. Thus, in seeking to find answers to sex-differences based on biological differences for infancy, no solid cues are available. However, there are other factors biologically which can show sex-differences at a later stage of life. For example, the hormonal system does not reach maturity until puberty. Consequently, any differences between the sexes that might be influenced by male and female gonadal hormones does not emerge prior to the onset of puberty.

Hormones

Examining sex-role acquisition from the biological perspective, variations in sex hormones play a significant role in pre-natal development of the physical characteristics that distinguish males and females. At

the prenatal stage an embryo's genetic sex (XX or XY) determines whether its gonadal cells become ovaries or testes. If an embryo carries a Y chromosome, approximately six weeks after fertilization the testes are formed. If the embryo carries only X chromosomes, by the sixth month of gestation two ovaries are formed.

Further differentiation of reproductive structures is primarily due to the presence or absence of androgen (Parsons, 1980, p.6). Thus, for six weeks, the embryo retains the potential to develop along either male or female lines. Complete anatomical differentiation as a male requires the presence of androgen (Frieze et al., 1978). Recent research has also indicated that gonadal hormone levels at a particular time of development have a direct effect on the brain. Even during the early levels of sex hormones, they affect the pattern of nerve connections in specific parts of the brain resulting in characteristically male or female patterns of nerve circuit (McEwen, 1976).

At Johns Hopkins Medical Center, John Money, Anke Ehrhardt, and their associates have taken advantage of naturally occurring cases of children who have deviated in one way or another from the normal pattern of sexual differentiation. These researchers studied children with normal and abnormal chromosome patterns and with external genitals partially or wholly inconsistent with their chromosomal sex. According to Money and

Ehrhardt (1972), differentiation of a fertile female depends on the absence of androgen and the presence of two X chromosomes. Likewise, the differentiation of a male requires the presence of both androgen and a Y chromosome. Money and Tucker (1975) have proposed the "Adam Principle" stating that the absence of early androgenic influences would induce femaleness in a person.

The studies by Money and Ehrhardt (1972) and Ehrhardt and Baker (1973) indicate that in general fetally androgenized female subjects show higher incidence of interest in masculine-oriented items and activities in preference to feminine items and activities. These data suggest that fetal exposure to androgens is associated with a higher incidence of "masculine" sex-typed attitude and behaviors. However, there were indications which suggested that the prenatal androgens may play a very small role in terms of acquiring masculine behavior in view of the setting of these subjects studied. In sum, the studies suggest that these androgynized girls were more "masculine"; however, these behaviors were still well within the normal range for females in the society. There were no doubts that these girls had a female gender identity, and that their adult sexual preferences were comparable to those of the control group. Thus, the presence of prenatal androgens does not seriously disrupt the gender

identity and gender-role identity of these females.

From this review it is evident that the suggestion that sex-differences have a biological basis has probably two substantial bases in behavioral patterns: aggressiveness and dominance in males and differential cognitive functioning. The exact mechanisms for these biological effects are unclear. There is little doubt that males and females do play different roles. These roles also vary cross-culturally. Because of the diversity of roles it is debatable whether play behaviors and adult roles are predetermined primarily by biological differences. The importance of socialization cannot be denied. At this point, the role biology plays in the development of sex-role behaviors remains an open question.

Theoretical Constructs of Androgyny

The conception of sex-role as a point on a unidimensional continuum has met with much criticism since the early 1970s. Sandra Bem (1974) and other researchers such as Block (1973), Carlson (1971), and Constantinople (1973) have questioned this traditional view. Instead they postulated the new concept of sex-role as two independent dimensions. This new concept allows one to possess qualities that have been previously classified as masculine as well as those that are classified as feminine. In other words, a person can

incorporate within his/her own makeup traits that are aggressive, instrumental, and agentic as well as those traits that are expressive, nurturant, and communal (Parsons & Bales, 1955; Bakan, 1966; Block, 1973).

This new concept of possessing both masculinity and femininity has been termed androgyny. An androgynous person is one who possesses both masculine and feminine traits (Bem, 1974). To be sex-typed can restrict one's behavior in a situation for both males and females (Bem, 1975, 1976). Bem further postulated that, while the positive aspects of masculinity and femininity are accentuated, the negative exaggerations of masculinity and femininity would tend to be cancelled out. Such a model of possessing masculine and feminine traits is advocated for both males and females.

Psychological androgyny operates with three underlying assumptions. Helbrun and Pitman (1979) outlined them as follows: first, androgyny allows greater flexibility in sex-role behavior; second, this flexibility allows for more adaptability within the social environment; finally, both males and females may attain situational flexibility given both sex-role dispositions.

Several empirical studies were carried out to test these assumptions. Bem (1975) undertook a study to investigate the assumption that androgyny allows an individual to behave flexibly when sex-role options are made

available. In this study, androgynous subjects of both sexes were found to resist conformity under pressure and were able to demonstrate nurturant, feminine behavior appropriately when situations called for it. Her findings were consistent with the assumptions proposed earlier. However, no direct claim could be made to support the assumption, since her study was based solely on between-groups comparisons. Heilbrun and Pitman (1979) confirmed these assumptions for males, but failed to provide significant androgyny-flexibility relations for the females. Lukman (1983) concluded that there is a significantly higher flexibility of coping strategies among androgynous individuals when compared with masculine individuals and the undifferentiated individuals. However, no support was found in the comparison between androgynous individuals and the feminine individuals. The flexibility indices were not significantly higher in androgynous subjects than in feminine subjects. In his study, little evidence was provided to support Bem's theory that androgyny allows one to be more flexible in his or her coping behaviors (Lukman, 1983, p. 84).

The second assumption, that greater sex-role flexibility leads to better adaptability, was found to be true only in research dealing with self-concept and adjustment among females. In Heilbrun and Pitman's study (1979), it was reported that the overall results suggest that greater flexibility in sex-role behavior lacks

adaptive value for both sexes. Bem's study (1975) suggests that a narrow self-concept leads to stereotyping and a broader self-concept leads to androgyny.

In testing the third assumption, Spence, Helmreich, and Stapp (1975) found that both androgynous males and females have a higher self-esteem as compared to those with traditional sex-role scores. However, Bem (1977) found that this is only true for the females and not for the males. Instead masculine males have a higher self-esteem. Heilbrun (1976) reported significant differences among the four sex-role outcomes. The observation affirms that androgyny emerged as most clearly associated with female adjustment with no significance found for androgynous males. Instead, the masculine males were found to be better adjusted than the androgynous males. A similar result was found in a study conducted by Deutsch and Gilbert (1976). From these studies the findings seem to indicate that better self-esteem and adjustment are consistently related to androgyny among females while masculinity continues to assume the positive functional significance for males.

Increasingly greater emphasis is being placed by psychologists and lay observers on the importance of an incorporation of both feminine and masculine traits in a person. Psychological health is defined within the confines of androgyny. It encompasses a concept that an ideal, psychologically healthy person is one who has a

blend of interests, abilities, and traits which are both expressive and instrumental, as proposed by Parson and Bales (1955). In an androgynous society people are not forced into roles or traits on the basis of gender (Barwick, 1971). People are engaging in tasks and activities and assuming responsibilities beyond the traditionally defined roles of masculinity and femininity.

The androgynous conception of sex-role would suggest that each sex would cultivate characteristics generally associated with the other in the traditional definitions in addition to its own. It was suggested that, when a society places less emphasis on gender and more emphasis on individual capacity for taking responsibility, more people will become androgynous. Barwick (1971) went on to say that, in time, as the androgynous personality is recognized, gender could become irrelevant to the assignment of roles. Roles would depend overwhelmingly on individual characteristics.

Sex-role Typing--A Function of Culture

The idea that culture is a contributing factor in sex-role acquisition has been much supported by research through the years. Differences in family environment, socioeconomic status, educational levels of parents, and parents' profession are all contributing variables to an individual's acquisition of a sex-role (Bachtold, 1976; Minuchin, 1965). Broverman with his associates (1972)

did an extensive study in defining sex-role. They concluded that there is a strong consensus that the differing characteristics of men and women exist across groups which differ in sex, age, religion, marital status, and educational level.

A number of theorists have claimed that sex differences in instrumentality and expressiveness have their origin in differential socialization experiences, including sex-linked child-rearing practices. Parsons and Bales (1955) discussed the extent of these differential socialization experiences which create the sex-role divisions in a given society or culture. This claim was supported by the cross-cultural data gathered by Block (1973) from the study done with subjects in the United States and five European countries. The study concluded that boys are educated to control their emotions and to display instrumental behaviors and the reverse is true for girls. It should be noted that all of these countries have similar sex-role structures.

Although there may be similarities in the process of sex-role development within most cultures, nonetheless, some significant differences do exist (Huang, 1971). Differences are especially more evident when comparison is made between western and eastern cultures. The differences between these cultures in child-rearing procedures and family structure account, to a large

extent, for the formation of sex-role attitudes and behaviors (Minuchin, 1965).

The American culture, with its emphasis on the significance of individualization and its permissiveness of self-expression has, in general, promoted traits which are defined within the more masculine confines for both males and females (Kiefer, 1974; Hsu, 1970). The Chinese culture, on the other hand, has differentiated more clearly between the sexes in sex-role training. Huang (1971), in her study of sex-role stereotypes and self-concept, found significant differences between Chinese and American subjects. The American females were more adventurous, forward, demanding, more willing to accept change, more active, and independent. On the other hand, Chinese females were more subjective, less self-confident, and less outgoing. Such a finding tends to suggest that American females, as compared to Chinese females, probably possess more masculine traits in addition to the existing feminine traits already instilled in them through various processes. Thus in comparison it is obvious that the American culture has a greater tendency towards being more androgynous for females than the Chinese culture.

Family Structure

In the last twenty years there have been great changes in the family--the basic unit of social

organization in any society. It is evident that the typical intact American family is nuclear and neolocal in sharp contrast to the traditional extended family which tends to center in one community or region as in most eastern cultures. In the absence of the extended familial support system, there has been a convergence of function between husbands and wives which commonly ends in role overlap and, occasionally, role reversals (Lee & Steward, 1976).

The technological changes in the United States also account for the overlapping roles between the two sexes. With woman entering the labor forces outside the home, it also seems evident that the classic designation of women as "expressive" and men as "instrumental" by Parson and Bales (1955) does not hold any longer. Women in the American society are assuming instrumental functions as they pursue the family's interests in the outside world. With the increasing awareness of men "fathering" in the home, there is also evidence to indicate that men in the American culture are assuming a more "expressive" function in the family. Thus it seems that, in the American society, women are called to function outside the feminine confines, extending to those of masculinity (Sue, 1982; Hsu, 1971). Women are taking initiatives and expanding their roles outside the home, thus engaging in activities previously termed masculine.

Another phenomenon in the American culture having

a major effect on the structure of the nuclear family is the increased incidence of divorce. From the 1960s to 1975 there was an increase of 85 percent in terms of divorce rate in marriages. The divorced family has created a situation where single-parents are assuming parental roles which are both instrumental and expressive. The parent who has custody of the children is required to assume both the role of the father and that of the mother. This seems to indicate a moving away from the more sex-typed behaviors defined in a traditional family structure.

Similarly, men in the American society are found to engage in activities previously defined as feminine. With women entering the work force outside the home, the home duties in the family are more evenly shared between husband and wife. This sharing of home responsibilities and duties is especially evident in some highly educated and/or talented couples who strive to excel in their own professions and are childless. In such a case, the functional distinctions between the two sexes are practically non-existent (Lee & Steward, 1976). Finally, the women's liberation movement towards a national recognition of woman's equality with man also freed a great number of women from the traditionally defined feminine roles.

The contemporary crisis in sex identity is essentially seen as a conflict between the traditional ideas about sex differences and the new idea of sex-

roles. While the idea of sex-roles is derived from the cultural past, the realities of changes in sex-role are now dictated with the ongoing changes in economics, technology and social organization. With the advancement of technological changes there is a strong tendency towards homogenizing the sexes economically. For example, the work technologists have produced labor-saving machinery and automated systems in the world. This, in turn, is minimizing the advantage of male strength. Also, with labor-saving devices in the home, women are finding more time to engage in activities outside the home which were once defined as male-dominant activities. With an increasing number of women joining the work force, constituting 40 percent of the force in the United States (Lee & Steward, 1976), there has come a change in economy, and thus a shared experience of work common to men and women. In other words, in highly technological countries, female and male are increasingly sharing the experience of formal employment which once was exclusively for men (Neugarten & Datan, 1973).

In contrast, the traditional Chinese family is based on an extended family structure which is made up of cooperative family units (Sue, 1982, Huang, 1971; Hsu, 1970). As much as the family structure has shifted to be less "traditional", it is still evident in many Chinese families that the extended familial concerns still exist. With the slower pace of technological

changes in their society, there is not a great leap toward merging sex-differences and sex-roles between males and females. Within the Chinese culture, the roles of females are clearly defined along the feminine lines. The extended family structure with close kinship and more stable economic factors tends to clearly mark the degree of sex-role differentiation. As Berry, Bacon, and Child (1957) have indicated, the extended family-structure society tends to be more sex-typed with a larger degree of sex differences. The nuclear family, which often stands alone, requires both men and women to be prepared to assume reversal roles. Thus sex differentiation cannot afford to be too great.

As comparison is made between cultures, it is noted that sex-role differences are evident in these two cultures. Lee and Steward (1976) concluded with the remark: "It seems safe to conclude that family structure greatly influences the structure of sex role, the society status of the sexes, and the patterns of interaction between the sexes. Analysis of family structure helps to clarify not only how the sex-roles differ within a culture but also how the interactions between the sexes differ from culture to culture" (p. 156).

Culture Assimilation

Several researchers have viewed the formation of personality as a lifelong process which interacts

dynamically with cultural and historical variables (Kiefer, 1974). Since the mid-nineteenth century, when Chinese began immigrating to the United States, there has been a steady influx of Chinese from all countries. Many had come with the intention of getting an education but ended up staying and making America their homeland. According to the 1980 census figures, there were 809,000 Americans with Chinese ancestry in the United States (Census Bureau, 1980).

Upon their decision to reside in this country on a permanent basis, it was necessary for them to make changes and become assimilated into the major dominant culture. Such an adaptation involves changes in beliefs, values, cultural heritage, life-style, social interactions, emotional expression, and the mastery of a new language. Because of the differences between these two cultures, there often are tremendous conflicts during the process of assimilation (Yao, 1979; Kiefer, 1974; Hsu, 1970). Much of the difficulty lies especially with the first generation Chinese who were bombarded with oriental values from parents and the western values taught by school, mass media, and peers. Later-generation immigrants tend to lose their original cultural values and adhere more to the new cultural demands.

Kiefer (1974), in her study of three generations of Japanese, lends support to this observation. Her findings indicate that second and third generation

Japanese in America tend to acquire the typical middle-class American life-style, a good command of the American language, skills, customs, and habits with gradual loss of the Japanese skills, language, customs, and habits. In conclusion, she stated that "the total amount of knowledge about Japanese customs is on the wane in each succeeding generation" (Kiefer, 1974, p.111).

Contemporary Chinese immigrants also become more Americanized in terms of values, customs, and habits (Yao, 1979). This change of orientation suggests that though many Chinese Americans may look "Chinese" they are in fact more "American" in their daily lives.

Further in her study, Kiefer (1974) found that the third generation Japanese women believe in sex equality more than their parents do. They resent the priority treatment given by their parents to the males. Such a finding tends to support the view that, the longer one lives in a different culture, the more likely it is that one will acquire, acculturate, and assimilate the new culture as one's own and deviate from the original culture. This tends to lead to the belief that culture indeed is an important factor in one's acquisition of sex-role.

Development of Research Hypotheses

As discussed, it is noted that there are anthropological evidences which suggest that, in most if not

all cultures, men and women are considered to be different in their psychological makeup; i.e., certain traits are said to be male and certain ones are characteristically female. However, beyond these superficial similarities, little is known concerning the degree to which these attributions differ as a result of cultural settings. Even if there are differences found, it is not clear whether these are due to differences existing between extreme cultures or would also tend to happen even in cultures of similar structure such as the western cultures. Little has been done to compare or examine distinctly whether culture is a specific factor in the process of sex-role acquisition.

The American culture, with its emphasis on individualism and its shift to a nuclear family system, tends to encourage females into less sex-typed life styles as compared to the Chinese culture, which emphasizes more sex-typed development for both sexes. The process of acculturation and assimilation ensures that a person from another culture tends to absorb values, practices, and customs prevailing in the major dominant culture. Thus, through the years one would become less a product of one's original culture and more similar to people in the new culture.

The study was initiated to explore the specificity of culture as an influencing factor. It examined whether acculturation and socialization determine the

processes of sex-role acquisition. If this is so, then Chinese females from a more sex-typed culture should become more androgynous as they are exposed to the American culture, which is less sex-typed. Hence the following research hypotheses were advanced for the study.

1. There is a significantly higher proportion of females classified in the androgynous category, defined by Bem, as the degree of American acculturation increases, showing a significant relationship between sex-typing and degree of American acculturation.

2. There is a significant difference among the femininity mean scores on the Bem Inventory, obtained by the five groups as categorized by degree of American acculturation. The Chinese females from Hong Kong and Singapore from a more sex-typed culture will score higher than the Anglo-American females in femininity mean score. The femininity mean score will decrease as the degree of American acculturation increases from group to group.

3. There is a significant difference among the masculinity mean scores on the Bem Inventory, obtained by the five groups as categorized by degree of American acculturation. The Anglo-American females will score the highest in this mean score as compared to all the other groups. The masculinity mean score will decrease as the degree of American acculturation decreases from group to group.

CHAPTER III

METHODOLOGY

Sample Group

The sample provided for the study was composed of females whose ages ranged between 17 and 25 years and who were primarily residents on college or university campuses. The subjects were sampled from five different categories. Group 1 was made up of Chinese females who were born either in Singapore or Hong Kong and have lived and been educated in their respective homelands. These respondents were attending English-speaking colleges, though living in a predominantly Chinese culture.

Groups 2, 3, and 4 were made up of Chinese females who live in the United States, a majority of whom were attending colleges and universities in the country at the time of taking the test. The difference among these three groups lies in their length of stay in the United States. Group 2 was made up of Chinese females who came to the country after the age of ten. Group 3 was comprised of Chinese females who immigrated to the United States before the age of ten, and Group 4 was made up of Chinese females who were born in America.

Group 5 was comprised of Anglo-American female students who were attending a college or university in the United States at the time they participated in the study.

The samples for Group 1 (Chinese females in Hong Kong and Singapore) and Group 5 (Anglo-American females) were selected from large freshman courses in different colleges and universities which cooperated with the study. Cooperation and consent were given by the teachers who then followed specific standard instructions for the procedure of administering the test. Hence, the instrument was administered to the subjects in a classroom setting.

Sampling of subjects for Groups 2, 3, and 4 involved a more complicated approach, due to a lack of a definite concentration of Chinese population in many specific locations. Letters seeking cooperation for the study were sent to different Chinese associations in Chinatowns and colleges or universities on the West coast and in Illinois. Also, personal contacts were made with club presidents on the West coast seeking the cooperation of Chinese females to participate in the study. With the cooperation of these presidents, the instrument was administered in group settings. A personal approach was made to other qualified Chinese female subjects who fit into any of these three groups. In such cases the instrument was administered individually. When the

answered questionnaires were received, they were separated into their respective groups as previously defined.

Rationale

The rationale for the the method of sampling subjects was based on the assumption that there are wide differences between the Chinese culture and the Anglo-American culture. As the Chinese group is progressively being exposed to the American culture they would become less sex-typed and more andogynous like the Anglo-Americans. If culture indeed plays a part in sex-role acquisition, this exposure would show a difference in sex-role among the groups.

In differentiating Group 2 from Group 3, the age of ten years was chosen as the cut-off point. Cross-cultural studies have indicated that girls between the ages of seven and ten are often more nurturant (Barry et al., 1957, p. 329). Before the age of ten girls exhibit more feminine traits. After this age they have possibly incorporated more masculine traits into their repertoire as they are exposed more to social interactions and show greater interest in heterosexual encounters.

The non-probability, purposive sampling method was used in the study, utilizing subjects who were mainly found in California, southwestern Michigan, and northern Illinois for Groups 2, 3, 4, and 5. These subjects were

classified into the respective groups according to the degree of American acculturation.

Instrumentation

This study employed one objective instrument, the Bem Inventory (see appendix A). This instrument was chosen mainly due to clarity, brief form, and simplicity of administration and scoring. It also demands relatively little time on the part of the participants in filling out the questionnaire.

The construction of the Bem Inventory by Sandra Bem (1974) was based on the assumption that masculinity and femininity are two independent entities instead of a bi-polar unidimensional structure. There are a total of sixty items, one third of which measure traits traditionally associated with masculinity, one-third with femininity, and the remaining twenty items are filler items with respect to sex-typing. The responses are arrayed on a 7-point Likert scale ranging from 1 (never or almost never true) to 7 (always or almost always true). The respondents were asked to rate themselves as to how well each of the sixty items describes themselves. Each point of the continuum is labelled according to the rating as shown in the instrument (appendix A). On the basis of the subject's responses, masculinity and femininity scores can be derived by simple computations and analysed into any of the four categories which Bem (1974) has

identified. The four categories are masculine, feminine, androgynous, and undifferentiated.

Bem (1981) presented the psychometric analyses of the two sample groups studied at Stanford University. The first sample group included 444 males and 279 females (N = 723) who filled out the instrument in 1973. In 1978 the same instrument was again administered to another sample group of 476 males and 340 females (N = 816). Both the sample groups were derived from undergraduate students enrolled in the Introductory Psychology course. The 1978 sample group served to provide normative data.

To establish the internal consistency of the inventory, coefficient alpha was computed separately for males and females for both scales and the F-M difference scores. The obtained coefficients are presented in table 1.

TABLE 1
COEFFICIENT ALPHA FOR THE FEMININITY SCORE, THE MASCULINITY SCORE, AND THE F-M DIFFERENCE SCORE

	Males	Females
Masculinity	.87	.86
Femininity	.78	.78
F-M	.82	.82

To determine the consistency reliability of the instrument, Bem used the test-retest method in 1973 with

subjects who originally participated in the study. The instrument was administered for a second time to twenty-eight males and twenty-eight females from the 1973 sample group four weeks later. Product-moment correlations were computed between the first and second administration for all the scores of both sexes. The obtained test-retest reliabilities of both masculine and feminine scale scores for both males and females, and their feminine-masculine difference (F-M) scores, are summarized in table 2.

TABLE 2
TEST-RETEST RELIABILITIES FOR THE FEMININITY,
MASCULINITY, AND F-M DIFFERENCE SCORES

	Males	Females
Masculinity	.76	.94
Femininity	.89	.82
F-M	.86	.88

To show further empirical independence between the Masculinity and Femininity scores, Bem employed the Product-moment correlational procedure to estimate the relationship between the scales for the 1978 sample. The correlation coefficient between masculinity and femininity scores is 0.00 for males and -0.05 for females. These obtained correlational coefficients indicated that empirically the masculinity and femininity dimensions are independent of each other.

Due to the recency of the publication of the Bem Inventory there is no review of it available in the Buros Mental Measurement Yearbook.

Field Procedure

Subjects for Group 1 (Chinese females from Singapore and Hong Kong) and Group 5 (Anglo-American females) were obtained from students enrolled in large class settings. Instructors who agreed to administer the questionnaire were briefed thoroughly to ensure standardized instructions and administration, and given a written copy of the instructions (see appendix B) for administering the test. The data for these groups were obtained during regular class time. Subjects for Groups 3, 4, and 5 were obtained through contacts made in different Chinese clubs or associations on college and university campuses, as well as through contacts made with different Chinese associations in Chinatowns of large cities and college or university campuses on the West Coast with large number of Chinese ethnic student population. In this case, the questionnaire was administered in a group setting and followed the same procedure as described for the first two groups.

Individual administration of the test was given to eligible females who fall within the specified groups who were unable to be included in the group administration. Each individual was thoroughly briefed in the

procedure of taking the test. In all cases the standardized procedure of administration of the questionnaire was followed. Specifically the steps involved were as follows:

1. Each participant was given the questionnaire.
2. Each participant was assured of anonymity except for those who desired their individual scores and the overall results of the study. In such cases subjects could identify themselves.
3. Instructions for taking the test were read carefully, either by the participant herself or the examiner administering the test.
4. Emphasis was placed on answering all items in the questionnaire in order to make the response valid.
5. Subjects were given ample time to complete the questionnaire. The average time each participant took was about twenty minutes.

Data Analysis and Null Hypotheses

Initial Data Analysis

The collected raw data in each respective group were translated into a format convenient for data entry and analysis in the computer. A system was devised to assign a code showing clear distinction of each of the five groups, upon which each questionnaire in the

respective group was systematically assigned an identification number.

Appropriate computer programs were used for the analysis of the data. Each questionnaire was entered twice into the computer. A simple FORTRAN program was used to check the consistency of both entries on each subject. The program printed out both entries whenever an inconsistency was detected. The use of the identification number allowed for quick and easy reference to the questionnaire in which an inconsistency was observed. This procedure ensured accuracy of data entry.

The analysis of the data initially involved the determination of each subject's femininity and masculinity scores as measured by Bem Inventory. Next, each subject was categorized according to the defined groups, either masculine, feminine, androgynous, or undifferentiated as shown in figure 1.

In the process of classifying subjects into their respective sex-role categories, the hybrid method as suggested by Bem (1981) was used. This method considers the difference between an individual's femininity and masculinity scores as one of the bases of classification. It involves two steps.

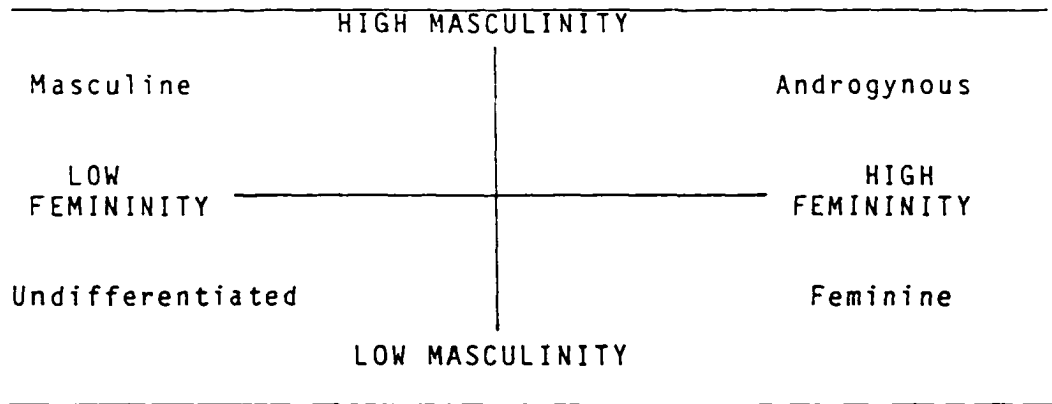


Figure 1. Bem's Sex-Role Profile

The first step involves the determination of femininity and masculinity scale scores. All the ratings in each scale were summed, from which an average was derived. The raw scores were converted into T-scores, which is a distribution with a mean of 50 and a standard deviation of 10. Using the T-scores subjects were classified as feminine, masculine, or potentially androgynous on the basis of the femininity-masculinity (F-M) difference score. The cut-off point for demarcating the three groups uses the standard deviation unit, or ± 10 points, as suggested by Bem. High scores in either direction indicate a tendency to be strongly sex-typed (or sex-reversed), positive scores indicate femininity, and negative scores indicate masculinity. Thus a subject whose femininity-masculinity score was less than -10 was considered masculine. Likewise, one whose femininity-masculinity score was greater than $+10$ was considered feminine. The rest of the subjects who did not fall into

either of the above groups were classified as potentially androgynous.

The second step involved the separation of the potentially androgynous group into either the androgynous group or the undifferentiated group. The median-split method suggested by Bem (1981) was employed. Subjects in the potentially androgynous group were classified as androgynous if both the femininity and masculinity scores were above the scale medians. Those whose femininity or masculinity score fell below the scale median were considered undifferentiated. The raw score medians of the normative sample used by Bem (1977) were 4.90 on the femininity scale and 4.95 on the masculinity scale. The sample medians on these two scales were also calculated using the responses from this study. The determination of which set of medians was used depended on the values of the sample medians.

Statement of Null Hypotheses

The research hypotheses were stated at the end of chapter 2. They were stated directionally, reflecting the theoretically anticipated outcome. Here, for statistical testing, null hypotheses are stated non-directionally. They are as follows:

1. The proportion of females classified in each of Bem's four sex-typed categories is unrelated to the degree of American acculturation.

2. There is no significant difference among the femininity mean scores on the Bem Inventory, obtained by the five groups as categorized by degree of American acculturation.
3. There is no significant difference among the masculinity mean scores on the Bem Inventory, obtained by the five groups as categorized by degree of American acculturation.

To test hypothesis 1, the chi-square test (χ^2) was used. This statistic was considered appropriate for use because the categories of data employed in the study, and the hypothesis was set up to examine the proportions of the cases which might fall in the various categories. Since the categories are exhaustive and mutually exclusive, in that each subject would fall into one and only one of the groups, the chi-square test of independence is appropriate for the analysis of the data (Games & Klare, 1967).

Analysis of variance (ANOVA) was used to test hypotheses 2 and 3. This statistical method was used because it is a highly flexible technique for testing hypotheses about several population means. It allows one to determine whether each of the sample means within the five groups is significantly different from the population mean in view of the variations of single cases from their group means. It is also a method which allows for simultaneous comparison of many means to determine

whether they differ significantly. It is a procedure which investigates the variance of all the observations including internal variation of the populations or variation from one group to another. The process allows a researcher to examine if variability is due to different sources and to base the test of significance on a comparison of these estimates using the F distribution (Huges & Grawoig, 1973, p.261).

The use of ANOVA for the analysis of the data employed three basic assumptions. The first one assumes that subjects within experimentally homogeneous sets come from normally distributed populations. Some statisticians have regarded this assumption as less important provided the sample size is not extremely small (Hays, 1973). The homogeneity of variances is the second assumption. It is important that variances within groups do not vary too much, in which case it would lead to the suspicion of an inaccurate estimate of the population variance from within sets (Guilford & Frutcher, 1973, p. 235). However, it has often been debated that a large sample size would counteract the likelihood of such an occurrence (Hays, 1973). The third assumption concerns with the necessity of random sampling within each set, which means that observations are mutually independent and have equal opportunity to occur.

For testing each of the null hypotheses, a two-tailed test was employed, and alpha was set at 0.05.

CHAPTER IV

RESULTS

Introduction

This chapter presents the findings from the analyses of data collected from the sample groups which were studied. It includes a section on the general presentation of data in terms of how they were collected, and information concerning the sample. The second section presents the basic data for the analyses and the results of the testing of each of the null hypotheses.

Presentation of Data

The original form of the Bem Inventory, a self-administered instrument, was used for the collection of data (appendix A). Each item in the scale was either a one-word descriptive term or a short phrase of words which is self-explanatory. Since the instrument was normed using college samples yielding significantly reliable scores, no pilot study was carried out. It has also been used in cross-cultural studies. The instrument was used as it was with no alteration or addition of any items.

Table 3 shows the number of subjects in each of the five acculturation groups.

TABLE 3

NUMBER OF SUBJECTS IN EACH ACCULTURATION GROUP

Gr 1--Chinese from Hong Kong & Singapore	82
Gr 2--Chinese to the U.S. after age 10	106
Gr 3--Chinese to the U. S. before age 10	43
Gr 4--American-born Chinese	38
Gr 5--Anglo-American females	105
TOTAL	374

Group 1 was made up of Chinese females living in Hong Kong and Singapore who have had no exposure to living in an American cultural setting. Group 2 was comprised of Chinese females who came to the United States after the age of ten. Group 3 were females who came to the United States before the age of ten. The American-born Chinese made up Group 4. Group 5 included the Anglo-American females. The sampling of subjects for the last four groups was done in the states of California, southwestern Michigan, and northern Illinois.

The analyses of data were done using the 374 responses which were gathered. There were a total of 381 returned questionnaires. However, seven of these questionnaires were rejected for several reasons-- inappropriate ratings, incomplete ratings, or unanswered questions. Each of the 374 usable questionnaires was

systematically classified into its respective group.

Group Placement

In classifying subjects into either androgynous or undifferentiated groups the median derived from this sample group was used instead of the norm median in Bem's Manual. Bem suggested that either median can be used according to the judgment of the researcher, though she indicated that with a single-sex sample the norm median is preferred. The sample median for femininity is 4.90, exactly that of the norm median. The sample masculinity median is somewhat lower than the norm median, with a value of 4.425 as compared to 4.95.

The primary reason for using these medians was that the sample of females studied was unlike that of the norming group used in Bem's study. The difference of cultures in this group is believed to make a difference in terms of the median values. In this case a sample median would seem more appropriate. Also, the total sample size in this study warrants the desirability of utilizing its own sample median.

Table 4 presents a summary of the sample group according to the sex-role classification suggested by Bem.

TABLE 4

CLASSIFICATION OF SAMPLE GROUP ACCORDING
TO BEM'S SEX-ROLE CLASSIFICATION

Masculine	74
Feminine	73
Undifferentiated	143
Androgynous	84

Subjects were classified into their respective sex-role categories using Bem's suggested hybrid method. A FORTRAN program was used to classify the respective groups following the description as outlined in chapter 3. Briefly, for each individual, the femininity and masculinity raw scores were tallied and then converted into T-scores. The individual was then classified into either feminine, masculine, or potential androgynous groups depending on the F-M difference score. Responses with a high F-M difference score above +10 were classified as feminine. Those responses with a negative score of less than -10 were considered masculine. The sample medians were used to classify the rest into either androgynous or undifferentiated categories. Androgynous subjects were those with femininity and masculinity scores above the sample medians. Those subjects with femininity or masculinity scores below the sample median were classified as undifferentiated. Scatter diagrams

showing the distribution of masculinity and femininity scores for each acculturation group is shown in figures 2, 3, 4, 5, and 6.

Testing the Hypotheses

The results of the testing of the hypotheses are presented hypothesis by hypothesis.

Null Hypothesis 1

The proportion of females classified in each of Bem's four sex-typed categories is unrelated to the degree of American acculturation.

Chi-square (χ^2) was used to test this hypothesis statistically. Table 5 summarized the findings.

The frequency of response in each cell is given together with the proportion of the group total given in parentheses. The chi-square value of 40.72 with 12 degrees of freedom is significant. Thus the hypothesis is rejected. The five acculturation groups are differently distributed among Bem's four sex-type categories. The proportion of persons classified as androgynous generally increases from Group 1 to Group 5, Group 4 being an exception.

It is evident that the findings indicate that Group 5 which is made up of Anglo-American females has a higher percentage (38%) of females falling in the androgynous category as compared to Group 1--Chinese females who have never lived in the American culture--

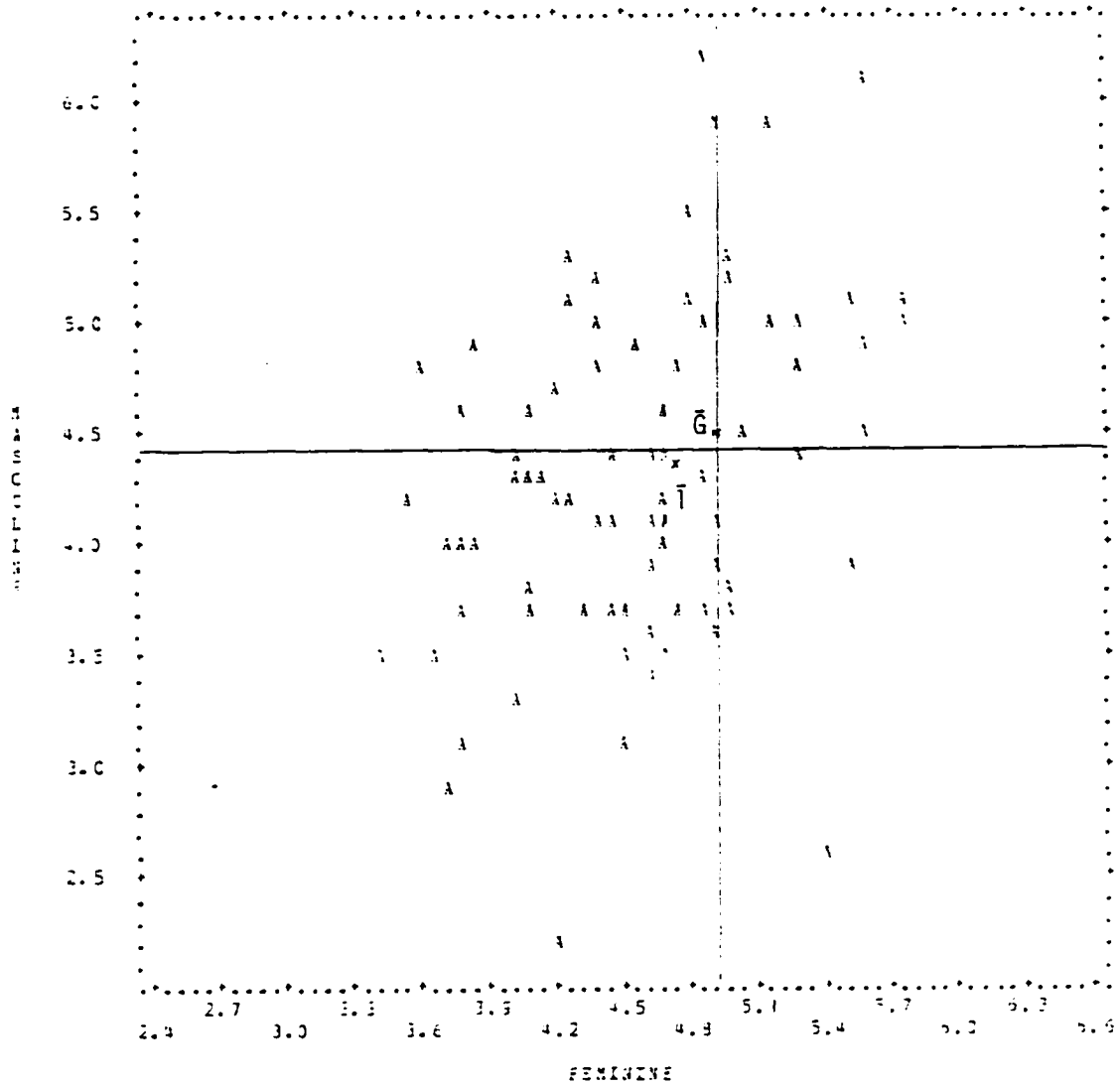


Figure 2. A Scatter Diagram Showing the Distribution of Masculinity and Femininity Scores for Group 1--Chinese Females from Hong Kong and Singapore

\bar{G} = Total group mean \bar{I} = Group mean

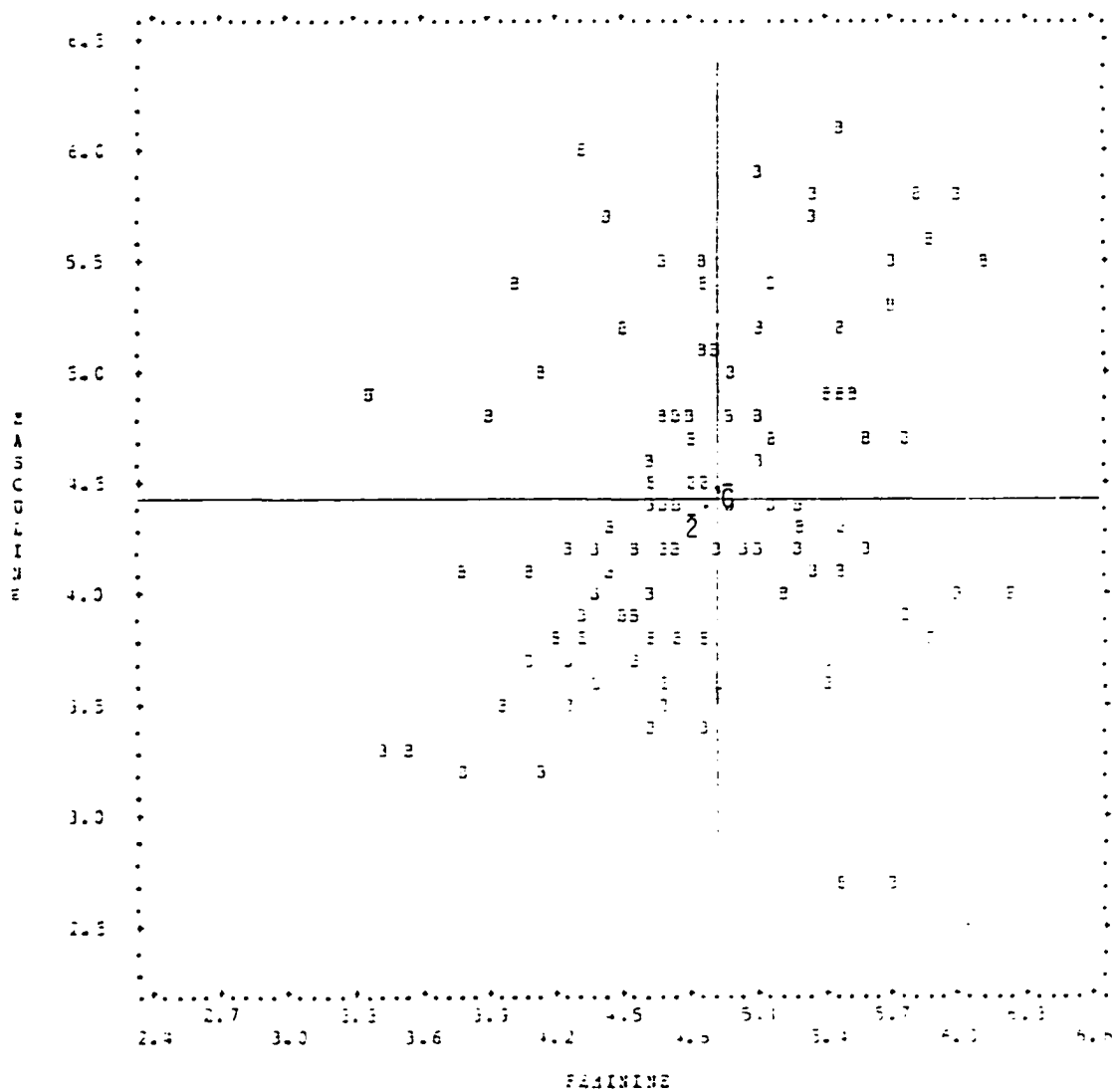


Figure 3. A Scatter Diagram Showing the Distribution of Masculinity and Femininity Scores for Group 2--Chinese Females to the U. S. after Age Ten

$\bar{\sigma}$ = Total group mean $\bar{\zeta}$ = Group mean

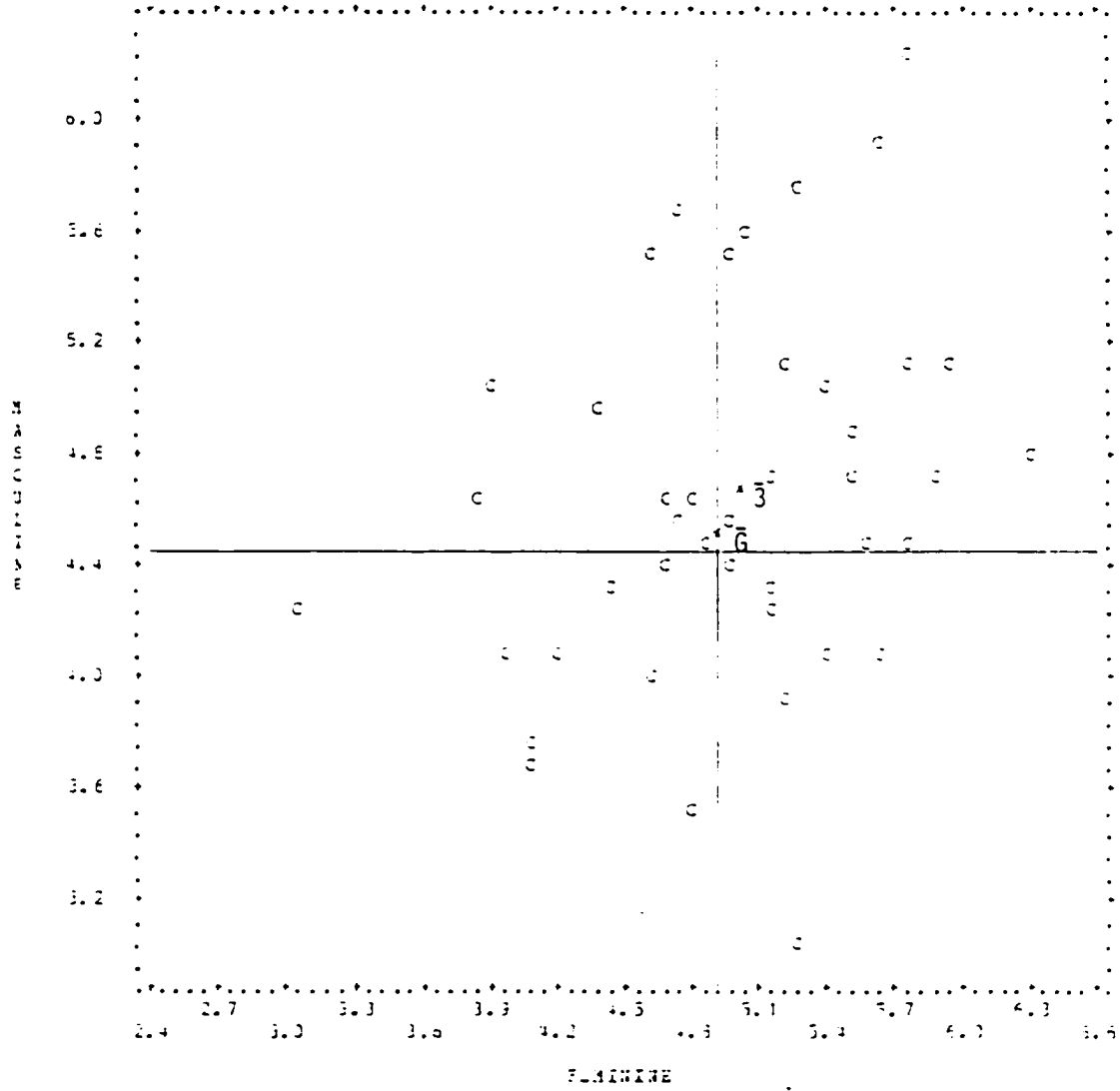


Figure 4. A Scatter Diagram Showing the Distribution of Masculinity and Femininity Scores for Group 3--Chinese Females to the U. S. Before Age Ten

\bar{G} = Total group mean $\bar{3}$ = Group mean

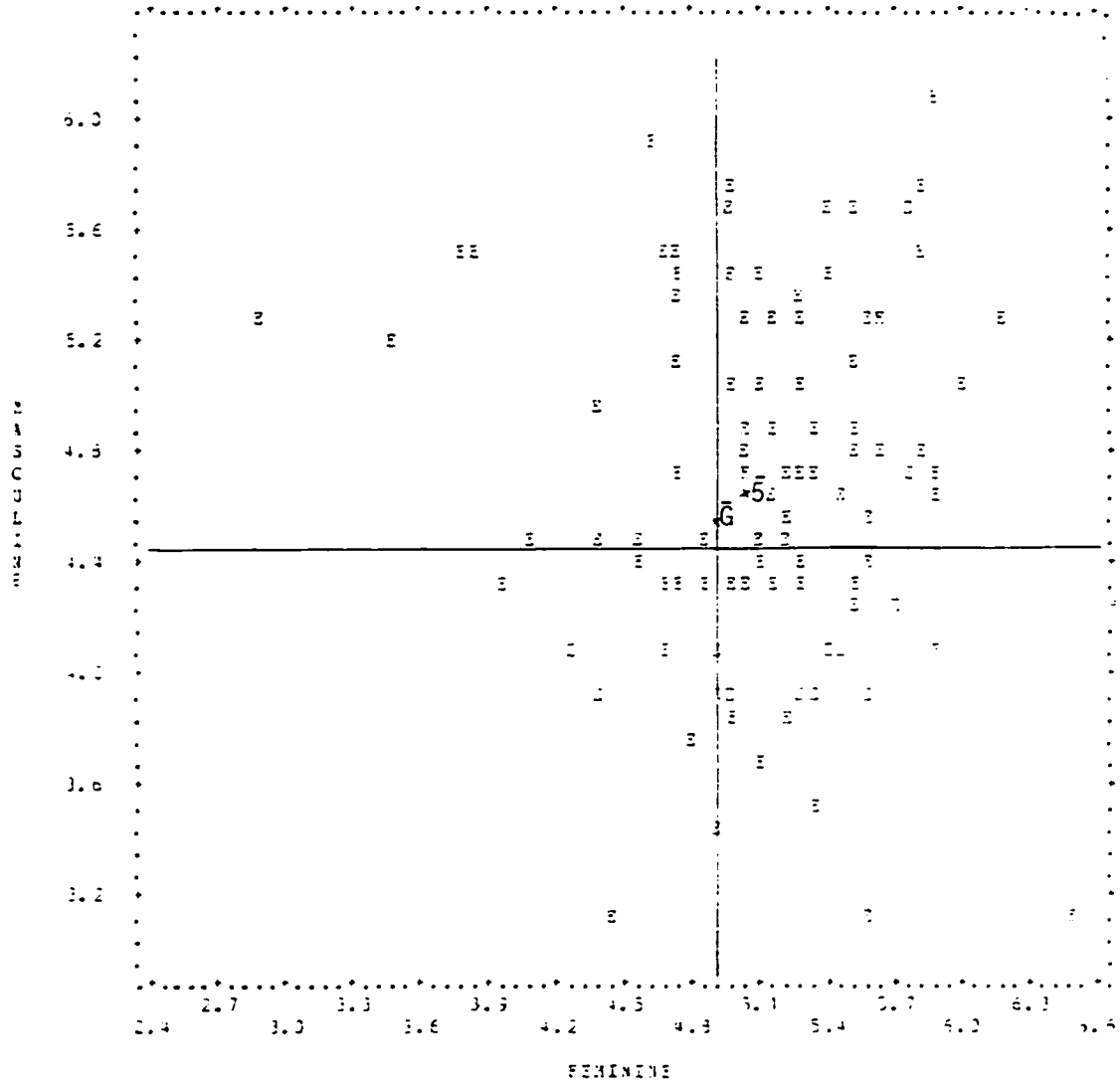


Figure 6. A Scatter Diagram Showing the Distribution of Masculinity and Femininity Scores of Group 5--Anglo-American Females

\bar{G} = Total group mean \bar{S} = Group mean

TABLE 5

FREQUENCIES AND PROPORTIONS OF FEMALES
IN BEM'S FOUR SEX-TYPED CATEGORIES

	Masculine	Feminine	Undifferentiated	Androgynous
Group 1	23 (.280)	11 (.134)	38 (.463)	10 (.122)
Group 2	13 (.123)	19 (.179)	53 (.500)	21 (.198)
Group 3	10 (.233)	10 (.233)	14 (.326)	9 (.209)
Group 4	10 (.263)	10 (.263)	14 (.369)	4 (.105)
Group 5	18 (.171)	23 (.219)	24 (.229)	40 (.381)
TOTAL	74 (.198)	73 (.195)	143 (.381)	84 (.225)

which has only 12 percent of the females falling in the androgynous group.

This finding presents evidence that American acculturation is related to sex-typed acquisition as measured by the Bem Inventory. With increasing exposure to the American culture the percentage of females in each succeeding group according to the degree of acculturation has increased significantly. The exception to this is Group 4--American-born Chinese-- which has the least number of females in the androgynous category, contrary to the expectation in terms of acculturation. The finding also indicates a higher percentage of females in

Group 5 falling in the feminine category as compared to Groups 1 and 2. It further shows that Group 1 has the lowest mean in the feminine category. There appears to be a large proportion of subjects falling in the undifferentiated category for Groups 1, 2, 3, and 4. The percentage is above 30 percent.

Null Hypothesis 2

There is no significant difference among the femininity mean scores on the Bem Inventory, obtained by the five groups as categorized by degree of American acculturation.

The femininity mean scores of the five groups are given in table 6.

TABLE 6
FEMININITY MEAN SCORES OF EACH OF THE
FIVE ACCULTURATION GROUPS

Acculturation Group	Mean
Gr 1--Chinese from Hong Kong & Singapore	4.57
Gr 2--Chinese to the U. S. after 10	4.87
Gr 3--Chinese to the U. S. before 10	4.99
Gr 4--American-born Chinese	4.90
Gr 5--Anglo-American females	5.11

Group 5 has the highest mean in comparison to the rest of the groups. Group 1, contrary to the postulated research hypothesis, has the lowest mean.

This shows that Anglo-American females scored higher in the femininity items as compared to Chinese females. With the exception of Group 3, a decrease on the mean score is evident with the decrease of American acculturation. This resulted in showing the Chinese females from Hong Kong and Singapore rating themselves lower on the feminine items in comparison to the rest of the groups.

The analysis of variance to test the statistical significance of these apparent differences of means is shown in table 7.

TABLE 7
ANOVA OF FEMININITY MEAN SCORES OF THE FIVE GROUPS
ACCORDING TO DEGREE OF AMERICAN ACCULTURATION

Source of variation	Degree of Freedom	Mean Square	F-ratio	Tail Area Proportion
Treatment	4	2.57	7.19*	.0001
Within	369	.36		
Total	373			

The F ratio value of 7.19 indicates that the null hypothesis is rejected at the 0.0001 level of confidence. The finding shows that the difference of means among the five groups is highly significant and not due to chance.

With the statistical result indicating a significant difference among the means, a Newman-Keul's test of significance between each pair of means was further

employed. The Neuman-Keul's technique requires that the means be ordered in increasing size from left to right and from top to the bottom. Table 8 shows the groups means thus ordered.

TABLE 8
NEWMAN-KEUL'S TEST OF CONTRASTS OF FEMININITY
MEANS FOR THE FIVE ACCULTURATION GROUPS

Means	Group 1 4.57	Group 2 4.87	Group 4 4.90	Group 3 4.99	Group 5 5.11
Group 1	x	.308* (.21)	.330* (.25)	4.26* (.275)	5.46* (.29)
Group 2		x	.022 (.21)	.118 (.25)	.238 (.275)
Group 4			x	.096 (.21)	.216 (.25)
Group 3				x	.120 (.21)
Group 5					x

Each entry in the table indicates the difference between the mean of the group at the column head and the mean of the group at the row head. For example, the mean of Group 4 minus the mean of Group 1 is .330. The critical values for the test differ according to the number of ordered steps between a pair of means. For example, there are five steps from Group 5 to Group 1, three steps from Group 3 to Group 2, etc.

The critical values for the contrasts of these means are shown in parentheses in table 8.

Comparing the means with the critical values in parentheses, it is evident that the means of Groups 5, 3, 4, and 2 are each significantly higher than the mean of Group 1.

This finding shows that the Chinese females from Hong Kong and Singapore who have not lived in the United States have a significantly lower mean on the femininity scale than the other groups.

Null Hypothesis 3

There is no significant difference among the masculinity mean scores on the Bem Inventory obtained by the five groups as categorized by the degree of American acculturation.

The means of each of the five acculturation groups are shown in table 9. It indicates that Group 5 has the highest mean and Group 1 the lowest as compared to all the groups. The finding shows that the Anglo-American females rated themselves high in the masculinity items.

Again, with the exception of Group 4 the mean scores of the groups shows a decrease as the degree of acculturation decreased among the groups. The American-born Chinese rated themselves lower on the masculine items as they similarly rated themselves on the feminine items. It has a lower mean compared to Chinese females who came to the United States before the age of ten.

TABLE 9

MASCULINITY MEAN SCORES OF EACH OF THE
FIVE ACCULTURATION GROUPS

Acculturation Group	Mean
Gr 1--Chinese from Hong Kong & Singapore	4.30
Gr 2--Chinese to the U. S. after 10	4.40
Gr 3- Chinese to the U. S. before 10	4.65
Gr 4- American-born Chinese	4.48
Gr 5--Anglo-American females	4.69

Table 10 presents the analysis of variance used to test the statistical significance of mean differences among the five groups.

TABLE 10

ANOVA OF MASCULINITY MEAN SCORES OF THE FIVE GROUPS
ACCORDING TO THE DEGREE OF ACCULTURATION

Source of Variation	Degree of Freedom	Mean Square	F-ratio	Tail Area Proportion
Treatment	4	1.660	3.214*	.0132
Within	369	.518		
Total	373			

An F -ratio value of 3.21 shows a significant difference among the means of the five groups at the 0.013 level of confidence. Thus the null hypothesis set for the study was rejected.

The finding indicates that the difference of means on the masculinity scores is significant among the groups of Chinese females and the Anglo-American females.

A Newman-Keul's analysis was carried out to test the significance of the difference between each pair of means. Table 11 shows the order in which the means were arranged, and the difference between each pair of means. The critical values for the contrasts of means are shown in parentheses in the same table.

TABLE 11
NEWMAN KEUL'S TEST OF CONTRASTS OF MASCULINITY
MEANS FOR THE FIVE ACCULTURATION GROUPS

Means	Group 1 4.30	Group 2 4.40	Group 4 4.48	Group 3 4.48	Group 5 4.69
Group 1	x	.10 (.25)	.17 (.30)	.347* (.33)	.386* (.35)
Group 2		x	.07 (.25)	.247 (.30)	.287 (.33)
Group 4			x	.174 (.25)	.213 (.30)
Group 3				x	.034 (.25)
Group 5					x

Comparing the means of each group with the

corresponding critical values in parentheses, it is clearly shown that each of Groups 5 and 3 has a mean which is significantly higher than that of Group 1. The rest of the differences of means are not significant. This means that both Anglo-American females and Chinese females who came to the United States before the age of ten have significantly higher means on the masculine scale as compared to Chinese females from Hong Kong and Singapore.

Note on Assumptions of the ANOVA Model

In chapter 3 (p.63), three assumptions of the analysis of variance model were discussed.

The first assumption is that of normality of distribution. This assumption was tested by obtaining measures of skewness and kurtosis, both of which are zero in the normal distribution. Table 12 shows, for femininity and masculinity scales, the values of skewness and kurtosis. In each case the value of t is given with the probability that the skewness or kurtosis is significantly different from zero.

For the masculinity scale, the assumption of normality is clearly upheld. For the femininity scale there is some negative skewness, with $p = .043$. As the F distribution is robust with respect to the assumptions, the femininity scale may be considered to be adequately normally distributed.

TABLE 12
TABLE OF NORMALITY

	Femininity	Masculinity
Skewness	-.26	-.04
Skewness/SE	-2.03	-.30
p	.043	.764
Kurtosis	-.03	-.27
Kurtosis/SE	-.11	-1.07
p	.912	.285

The second assumption is that of homogeneity of variance. Table 13 shows the variances of femininity and masculinity scales for each of the five acculturation groups.

TABLE 13
VARIANCES OF FEMININITY AND MASCULINITY SCALES

	Femininity	Masculinity
Group 1	.303	.593
Group 2	.360	.548
Group 3	.462	.449
Group 4	.360	.578
Group 5	.348	.423

Hartley's F_{max} ratio (Winer, 1971, p. 206-207) was used to test the assumption of homogeneity. For the femininity scale, $F_{max} = .462/.303 = 1.53$, and for the masculinity scale, $F_{max} = .593/.423 = 1.40$. With five variances and 105 degrees of freedom, the critical value of F_{max} , with an alpha level of .05, is approximately 2.0. Hence the assumption of homogeneity of variances is upheld.

The third assumption concerned random selection. This assumption could not be upheld, due to the difficulty of selecting samples, particularly for the middle groups.

CHAPTER V

SUMMARY, RESULTS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

This chapter presents the summary and conclusions of the study, implications of the findings and recommendations for further research. The study was undertaken with the aim of testing the theory that culture is one of the important factors in sex-role acquisition.

Purpose

The main purpose of the study was to examine if culture is a significant contributing factor to sex-type behavior in females. Specifically, it sought to find an answer to the question, "Does culture affect the degree of androgyny and feminine sex-typing?" Culture as a factor was limited to the study of American acculturation from a basically Chinese culture. Thus, if culture is a factor, a significant difference would be shown in the results of the different groups of Chinese

with various amounts of American acculturation as measured by the Bem Inventory.

Three hypotheses were formulated and projected for this study. The first hypothesis dealt with the proportions of sex-typed classified females related to the degree of American acculturation. The second hypothesis examined the difference of femininity mean scores among the five acculturation groups. The last hypothesis was concerned with the difference of the masculinity mean scores of the same five groups.

An Overview of Related Literature

The review of related literature for this study can be classified into four sections. The first section is the theoretical perspectives of sex-role development. Specifically, there are three major theoretical approaches which attempt to explain the processes underlying the socialization of sex-role behavior. The first is a set of identification theories based on Freudian psychoanalytic psychology. Basically, they proposed that anatomy decides one's sex-role orientation through identification with the same-sex parent. The second is on social-learning theory which emphasizes the importance of reinforcement and modeling. External influences with a heavy endorsement of behavior orientation were stressed. The third is a theoretical framework based on the cognitive theory which emphasizes an individual's

progressive understanding as an important factor in the process of sex-role development. It was obvious that no conclusive statement can be made in deciding which theory really accounts for sex-role acquisition. It is, in fact, a combination of all factors proposed, including biology, socialization, cognition, and culture.

The second section of the review examines the issue of nature versus nurture in sex-role development. It is apparent that an interaction between these two factors can occur in several different ways.

As the study utilized Bem's theoretical conception of sex-role and her instrument for measuring sex-role orientation, the third section is a study of Bem's theoretical construction of androgyny. Sex-role was introduced as two independent dimensions. Bem (1975) suggested that, ideally, a person can acquire both masculine and feminine traits. A person with a possession of such traits would be considered well-adjusted, flexible, and more adaptable, and would probably function better in a changing and demanding society of the 1980s. Such a person is also defined as androgynous, a term which was popularized by Bem.

The last section presents a study of culture as a function in sex-role typing. There are many differences between the American culture and the Chinese culture. The great differences in family structure and technological advancement are contributing factors to the

roles which women in each respective culture assume. Chinese females in an eastern-oriented culture appear to be more sex-typed compared to American females in a western culture like America which often involves an overlap of both masculine and feminine roles. As the Chinese families immigrate into the United States, they often experience some conflicts due to differences in cultural demands. The expectations from school, work, or play are American in orientation, much different from those at home. Thus, in order to belong, thrive, and succeed, a necessity of acculturation and assimilation into the dominant American culture seems unavoidable.

Sampling and Instrumentation

The sample for study was made up of a non-probability purposive sampling of 374 subjects who were mostly from college or university settings. Group 1 was comprised of 82 subjects sampled from Hong Kong and Singapore. Chinese subjects in the United States were sampled mainly from California, southwestern Michigan, and northern Illinois, making a total of 187 respondents. These made up the three Chinese groups classified according to the degree of American acculturation. There were 106 subjects who belong to Group 2, defined as Chinese females who came to the United States after age ten. Group 3 was comprised of 43 Chinese females who came to the United States before the age of ten. The remaining

38 respondents were American-born Chinese who made up Group 4. A total of 105 Anglo-American females, comprising Group 5, was sampled in the same states.

The instrument employed for the study was the Bem Inventory. It was chosen for its brevity, clarity, and simplicity of administration and scoring as well as the economy of time on the part of the respondents. Although the instrument was used for Chinese-speaking subjects overseas in Hong Kong and Singapore, no translation was necessary since subjects who responded were attending English-speaking colleges.

Summary and Discussion of Findings

This section presents a summary of the findings of the study with regard to the three main hypotheses. A discussion of the results is also included after each hypothesis. All of the three hypotheses were tested at an alpha level of 0.05.

Null Hypothesis 1: The proportion of females who were classified in each of Bem's four sex-typed categories is unrelated to the degree of American acculturation.

Corresponding to this null hypothesis is the research hypothesis which stated that there is a significantly higher proportion of females classified in the androgynous category, as defined by Bem, as the degree of American acculturation increases, showing significant relations of sex-typing to degree of American acculturation.

On the basis of the data from the five groups a chi-square analysis was undertaken. The hypothesis was rejected with a probability smaller than 0.005. The proportions of females classified on the basis of masculine, feminine, undifferentiated, and androgynous was significantly different among the five groups depending on the degree of American acculturation.

A close examination of the two extreme groups, namely, Group 1, Chinese females with no American acculturation, and Group 5, Anglo-American females, indicated that there is three times as high a proportion of females from Group 5 in the androgynous category as from Group 1. This supported the research hypothesis that culture does influence the development of sex-role. This finding added support to the concept which Barry and his associates (1957) had proposed about family structure-- that females from nuclear families tend to go beyond the traditionally defined feminine traits into more masculine traits. The Anglo-American females in this study seemed to illustrate this point well with a higher percentage of females in the androgynous group as compared to the Chinese females. It also concurred with the findings in Huang's study (1971, p. 230). Her study indicated that American females' perceptions of their sex-role tend to exceed the traditional feminine self-concept and to correspond more closely to that of the male self-concept, which is more masculine in character.

An examination of the androgynous category reveals one group with respect to which the first research hypothesis was not supported. While there was a general increase in the proportion of females in this category as the amount of American acculturation increased in each of the specified groups, this was not the case for Group 4, the American-born Chinese females. This group had the least proportion of females falling in the category of androgynous. On examining the number of females from Group 4 falling in each of the four sex-typed categories, it was observed that this group had an equally low percentage of females in both the masculinity and femininity category with the highest falling into the undifferentiated category. Since this group is composed of American-born Chinese females living in the United States with no exposure to living in a Chinese culture, one would expect them to be more androgynous, somewhat similar to Group 5.

Several possible reasons could explain this anomalous outcome. First of all, it is suspected that there may be a conflict of role expectations from home, which are predominantly of Chinese heritage, and those from school and other social interactions, which are predominantly American in nature. Secondly, there may be a higher need to preserve one's cultural identity as Chinese--which often is described as tender, gentle, and nurturant. Thirdly, living in the highly competitive

American culture, with a necessity to survive and to feel a sense of belonging, they may be required to adopt more aggressive and individualistic behaviors. A demonstration of such behavior would be classified in the masculine bracket according to Bem's sex-type categories. These factors may, to some extent, account for the equal proportion of the American-born Chinese being classified in the feminine and masculine categories.

The increasing focus on the Asian Americans in the United States, through mass media such as Newsweek (April 2, 1984) and U.S. News and World Report (April 2, 1984), may have created a greater feeling of comfort and pride for the Chinese females to live up to their heritage as well as to feel patriotic about being American citizens. Research has also shown that people who have immigrated to another land tend to uphold and preserve their mother heritage more consciously than if they were to have remained in their own country (Kiefer, 1974). There seems to be a fear of losing the heritage as distance separates one from the original homeland. This would indicate that the parents of this group of Chinese females were more conscious of inculcating the Chinese values in their children in order to retain the Chinese heritage.

The effort in integrating the feeling of being an American citizen and the need to keep one's own heritage could account for the equal mean score in both masculine

and feminine categories. This group of females tend to project themselves as more individualistic, assertive-- defined as masculine-- yet, may also be holding back, trying to project themselves as nurturant, fitting more into the feminine category. Likewise, this may also account for the high percentage of Chinese females in all the four groups who are placed in the undifferentiated category.

Yet, a more probable reason may be due to the modest manner of responding that Chinese usually give to questions. A similar pattern of responding was also evident in the study conducted by Huang (1971). She commented that the Chinese subjects showed an element of modesty or humility so typical of traditional Chinese culture in the manner of their responses (Huang, 1971, p. 225). Subjects seemed to select responses in the middle of the range rather than the extremities. Thus, it is highly probable that, in responding to the questionnaire, most of the Chinese females were reticent in rating themselves on the high score of either a 7 or 6, or even a low score of 1 or 2. With that pattern of answering, it certainly would result in a larger proportion of them being classified as undifferentiated according to the method which Bem uses.

In his study of Chinese and Americans, Hsu (1981) pointed out that Chinese are generally situation-centered as compared to Americans, who are individual-centered.

With this observation, it is possible that the Chinese females in the study may have responded to the questionnaire differently from the Anglo-American females. In rating themselves on the scale from 1 to 7, the Chinese females could have looked at themselves in different situations. As college females, they would view themselves in different roles, such as a daughter, wife, working woman, or a student. In each situation they would probably rate themselves differently. Since the Chinese are more situationally orientated, it may be inaccurate to confine them to rating themselves using items in the Bem Inventory. This would probably suggest that the instrument did not truly and adequately measure the sex-role orientation of the Chinese females. The difference in perception would affect the way they rated themselves, thus affecting the classification into the different sex-typed categories as proposed by Bem.

Another unexpected outcome of the findings with respect to this hypothesis was that there were more females in Group 1 who were classified in the masculine category than in the feminine category. With the general concept of the Chinese females one would expect to have more females being classified in the feminine category. Yet results showed that there were twice as many females of Group 1 classified in the masculine category as in the feminine category.

One possible reason may be attributed to the

population which was sampled. The general impression of Chinese females as being more sex-typed often is a representation of the general female population at large, characterized by the adult population. The sample for Group 1 was made up of young females in a competitive college setting which is not usually highly accessible to the general public. Entering college is a competitive enterprise which demands both intelligence and determination. Women, in general, do not pursue a college education. Thus, this group of women was atypical of the Chinese female population. In comparison with the general Chinese females they were probably more determined, competitive, assertive, and aggressive. In order to stay and succeed in college it appears that they need to demonstrate such qualities.

One also wonders whether some of these traits that were exhibited may have been learned and acquired through patterning after their mothers who, though appearing to westerners to be more sex-typed, were, in fact, operating with inner strength and instrumental characteristics which could be classified as masculine. An exhibition of such behavior plus a self-perception in the frame of mind would tend to classify the Chinese females in the masculine category more than the feminine category.

With the western influence on the East through consumerism and mass media, Chinese females in Hong Kong

and Singapore may possibly be gaining a new and different perception of the woman's role in society. There may be a new strife to play roles similar to those of men and receive the recognition due them. Could there be a new awareness in this group of Chinese females similar and comparable to what happened in the United States among the women in the early 1970s? Possibly, with time, as they succeed in their chosen roles, the need to prove themselves and to compete would lessen. This may change their perception and allow them to value their own feminine traits.

One also wonders, is the traditionally Chinese culture, which has been believed to be more sex-typed in the past, now undergoing changes and becoming less sex-typed, as the influence of the West increases? Hong Kong and Singapore are two countries in the East which are highly westernized, especially with the influx of tourism and consumerism. If a sex-role orientation for the female is changing, this would add more support to the present findings that culture is an important factor in one's sex-role development.

Null Hypothesis 2: There is no significant difference among the femininity mean scores on the Bem Inventory obtained by the five groups as categorized by degree of American acculturation.

The research hypothesis corresponding to this null hypothesis stated that there is a significant difference among the femininity mean scores on the Bem

Inventory, obtained by the five groups as categorized by degree of American acculturation. The Chinese females from Hong Kong and Singapore, from a more sex-typed culture would, score higher than the Anglo-American females in femininity mean score. The femininity mean score decreases as the degree of American acculturation increases with the groups.

The results of one-way analysis of variance indicated that null hypothesis 2 should be rejected. There was a significant difference in the femininity scores among the five acculturation groups, with a probability of 0.0001. The mean score of the Anglo-American females was the highest as compared to the other groups. The Chinese females from Hong Kong and Singapore of Group 1 scored significantly lower than all the other four groups. This is in contrast to the research hypothesis 2, which posited a decreasing femininity mean score with increasing American acculturation. Some possible reasons for this finding are similar to those previously discussed under hypothesis 1.

Again, based on Barry et al. (1957), the Chinese females should show higher means in the feminine scale than the Anglo-American females since the Chinese culture is rooted in traditionally large, cooperative family units of the consanguine type, while the American family is, in general, of the small, isolated nuclear type in which parents often assume both feminine and masculine

roles during emergencies. Yet, the finding was contrary to the expectation as stated in the research hypothesis.

Cultural differences in the understanding of the items may have influenced the way the respective groups responded to the questionnaire, which would account for the disparity. Furthermore, the Chinese culture which emphasizes modesty and humility as prime values may influence the Chinese females to understate rather than overstate a characteristic to flatter themselves. Thus, the modest manner of handling situations may have portrayed the Chinese females as more sex-typed when, in fact, the unexhibited inner characteristics are more instrumental and masculine in nature.

The Anglo-American females, in general, are more opinionated, open, and ready to accept compliments, and thus to rate themselves with extreme scores (Huang, 1971, p. 229). This could account for their higher feminine mean score as well as a higher proportion in the androgynous category. The Chinese females with a different cultural background may still be searching for a more comfortable and acceptable position to view themselves as they face conflicting cultural demands and expectations. The Chinese females in the United States seem to have more of a struggle in establishing an identity beyond the sex-role confines. In addition to the sex-role identity, they have to battle with the issue of being considered a minority in the country.

Null Hypothesis 3: There is no significant difference among the masculinity mean scores on the Bem Inventory, obtained by the five groups as categorized by degree of American acculturation.

The related research hypothesis stated that there is a significant difference among the masculinity mean scores on the Bem Inventory, obtained by the five groups as categorized by degree of American acculturation. The Anglo-American females would score the highest in this mean as compared to all the other groups. The masculinity mean score decreases as the degree of American acculturation decreases with the groups.

The results of one-way analysis of variance indicated that this null hypothesis must be rejected with probability of 0.01. There is highly significant difference of masculinity mean scores among the five acculturation groups. Thus, the differences among them were not due to chance but to the degree of American acculturation. Results indicated that the Anglo-American females have the highest mean score followed by Chinese females who immigrated to the United States before the age of ten. The mean scores of these two groups are significantly higher than the mean score of Chinese females from Hong Kong and Singapore. This finding supported the research hypothesis 3 that Group 5 would score higher than the rest of the groups due to the degree of American acculturation.

In both femininity and masculinity scores Group 4

consistently showed a lower mean than Group 3. Seemingly, Group 4, defined as American-born Chinese, would be expected to have a higher mean score in masculinity in view of the amount of American acculturation compared to the Chinese females who came to the United States before the age of ten. It appears that these American-born Chinese were ambiguous about their self-perception in terms of sex-role. They may be experiencing the conflict of being American citizens and trying to find the balance of feeling comfortable about their own Chinese heritage. It would seem that this tension may have created the low scores in both masculinity and femininity categories, thus resulting in a high percentage of undifferentiated females according to the Bem Inventory.

The Chinese females who came to the United States before the age of ten seemed to be more certain about their perception of their femininity. As Barry and his associates (1957) pointed out, girls between the ages of seven and ten are often more nurturant, exhibiting more feminine traits before the age of ten. The high mean score would support the assumption that their sense of femininity was quite well established before coming to the United States. Thus, it would imply that before immigrating to the United States, their feminine characteristics were further reinforced with the Chinese family values and expectations. Upon arrival in a new country with a new culture they were more ready to adapt and pick

up values transmitted in the dominant culture in which they lived. Also, parents often utilize the adaptability of children to learn new culture, customs, and traditions to teach them these values so as to adjust and adapt to the new land which they have adopted.

Summary of Major Results

The data reported in this study show that culture is a factor in the development of sex-role for women. There were significantly different proportions of females in each different sex-typed category according to the degree of American acculturation. The Anglo-American females rated themselves high in both feminine and masculine scales thus placing a higher proportion of them in the androgynous category. The Chinese females, in general, have a higher proportion classified in the undifferentiated category. They scored low in both masculine and feminine scales.

The Chinese culture, which stresses modesty and humility as important values and virtues, may have influenced their manner of responding towards an understatement rather than an overstatement in flattering themselves.

Difference in understanding the English language may also account for the differences in responding to the questionnaire by the two groups. The usage and understanding of the English words and phrases are often

interpreted differently, due to the difference in culture. Thus, in answering the questionnaire the Chinese females could have understood the items in the Bem Inventory differently from the way the Anglo-American females did. In such a case, the difference of responses may have been largely influenced by the difference of cultures.

Emerging from this discussion the following major results are enumerated:

1. There were significantly more Anglo-American females in the sex-typed category called androgynous as compared to the four Chinese female groups.

2. There was a higher percentage of Anglo-American females in Bem's feminine category than Chinese females from Hong Kong and Singapore.

3. The percentage of females in the undifferentiated category was higher for all the four Chinese groups as compared to the Anglo-American group.

4. The proportion of subjects in the androgynous category increased as would be expected from Groups 1 to 5 with the exception of Group 4.

5. The Hong Kong and Singapore Chinese group had the highest proportion of females classified in the masculine category.

6. The Hong Kong and Singapore Chinese group had the lowest proportion of females being classified in the feminine category.

7. There was a significant difference in the masculinity mean scores among the five groups.

8. Both Anglo-American females and Chinese females who came to the United States before the age of ten had a masculine mean score which was significantly higher than that of Chinese females from Hong Kong and Singapore.

9. American-born Chinese females scored low in both masculine and feminine scales as compared to the Chinese females who came to the country before age ten.

10. There was a significant difference in femininity mean scores among the five groups.

11. Chinese females from Hong Kong and Singapore had a significantly lower femininity mean score as compared to all the other groups.

Conclusions

Two conclusions are drawn from the foregoing findings as follows:

1. The proportion of females as classified in Bem's four sex-role categories was significantly related to the degree of American acculturation.

2. Culture was an influencing factor in the development of sex-role

Implications

The findings of this study support the theory that culture is an important factor in influencing the

acquisition of sex-role. Generally, culture tends to discriminate between males and females in the process of sex-role stereotyping. Masculine behaviors and characteristics are usually ascribed with higher social value than are feminine behaviors and characteristics. While androgyny has been proposed as an ideal for both men and women, the issue may really lie in the culture in which one lives. It is important for society to begin to esteem highly traits and behavioral characteristics which are feminine. This would prevent people from striving to be only of one sex-type--masculine. Rather, the value of seeing the complementary traits, both masculine and feminine, would be valued. In such a case, women would feel proud to be feminine and to accentuate their femininity without striving to become more like men and ascribe to their masculine behavioral characteristics.

Further exploration is necessary to examine the differences in how Chinese females view themselves in terms of sex-role orientation. The unexpected distribution for both the femininity and masculinity scores may suggest that the Chinese females define themselves in different ways which are not measured by the Bem Inventory. The low rating on the feminine scale with a higher percentage of females in the masculine category as compared to the Anglo-American group could suggest that there is a difference in perception. The Chinese, in general, do not define themselves with words or

verbalization; rather they do so through comparison of behaviors whereby modification of different behaviors takes place. In a way, it would suggest that in making their own assessment the Chinese females probably see themselves as more masculine than the American culture would give them credit for.

Within the Chinese culture, the apparently "submissive" or "subservient" manner is really an indication of loyalty rather than of femininity, as interpreted by the westerners. The roles which men and women assume in the Chinese culture tend to be well defined; yet within the "feminine" role which the females assume, they are not construed as "weak" or "submissive". There seems to be a strength behind the facade that is being displayed. Such would be a difference between the Chinese and Anglo-American females. A qualitative study in a clinical setting utilizing interviews and observation may be worthwhile to study further the difference of sex-role between the two cultures.

Recommendations

Based on the foregoing findings and conclusions of the study the following recommendations are proposed:

1. The study should be replicated with another measuring instrument of sex-role in order to test Bem's determination of how a person is classified into the sex-

typed categories. This would also validate her theoretical conception on the issue of sex-typing.

2. A similar study may be carried out to test the theory of culture as a factor in sex-role development using other cultures beyond the Chinese culture which was studied. This, in fact, could be made more comprehensive by studying more than two cultures concurrently.

3. In examining sex-typing, it may be helpful to develop a longitudinal study utilizing children of both sexes during the developmental years to study how sex-role orientation is acquired through the years.

4. A replication of the study using the male population within the same cultural context would be interesting to observe whether culture affects sex-role development among males.

5. The study validated culture as an influencing factor in sex-role development. Further research could be generated to examine how sex-role is acquired through the influence of the family, especially in a Chinese culture.

6. An additional exploration into sex-role differences between men and women in a Chinese culture could determine if their sex-role orientation is defined and labelled the same way as in the western society using so-called objective instruments such as the Bem Inventory.

7. An in depth study of the mother-daughter relationship in a Chinese culture, as to how sex-typed

behaviors and characteristics are transmitted may prove to be beneficial. Such an undertaking may allow western-influenced researchers to examine the difference of perception of roles in a different culture and the validity of using western defined sex-typed categories to classify their sex-role orientation.

APPENDICES

APPENDIX A

PLEASE NOTE:

Copyrighted materials in this document have not been filmed at the request of the author. They are available for consultation, however, in the author's university library.

These consist of pages:

P. 109-110 Bem Inventory

**University
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300 N Zeeb Rd., Ann Arbor, MI 48106 (313) 761-4700

APPENDIX B

INSTRUCTIONS FOR TAKING THE INVENTORY

1. Fill in information within the BOX at the right-hand corner. Ignore the other information on name, age, sex, date, etc.
2. Read directions on the front page carefully and follow the directions as given.
3. Emphasize that information provided by each participant is kept confidential. Assure participants of anonymity since names and personal data are not called for.
4. Remind participants orally that it is important that they do not skip any items. Questions about the meaning of any item should be answered in as neutral a fashion as possible.
5. Give participants ample time to complete the inventory.
6. It is recommended that lead pencils with erasers be used so that any changes in responses will be clearly made to facilitate accurate scoring. However, it is not mandatory.
7. It is best to give the questionnaire to a group and have them do it at once and return at once upon completion. However, where group administration is not possible, individual administration is fine. Just make sure that the answered inventory is returned.

Subjects to be included are:

1. females—Chinese, hopefully represented by the following 3 groups:
 - a. American-born Chinese
 - b. Chinese immigrated to U.S. before age 10
 - c. Chinese immigrated/came to U.S. after age 10
2. college age females, roughly between ages 17 to 25.
 - * it is not necessary that they are in school but that they are within that age bracket.

Note: usually it takes 10 to 15 minutes to answer the inventory.

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VITA

Name: Chui-Liu Serena Gui

Date of Birth: June 16, 1950

Place of Birth: Kuching, Sarawak, Malaysia

Education Background:

Secondary School Diploma: Green Road Government
Secondary School, 1968.

Bachelor of Science: Southeast Asia Union
College, 1972.

Master of Arts: Walla Walla College, 1977

Doctor of Philosophy: Andrews University, 1984
(Counseling Psychology)

Exprience:

1973-74 Homeroom teacher, Grades 2 and 3,
Sunny Hill School, Kuching, Sarawak.

1974-75 Secondary school teacher in math,
Bible, and Cookery, Sunny Hill
School, Kuching, Sarawak.

1976-77 Graduate Assistant at Department of
Education/Psychology Dept., Walla
Walla College, Washington.

1977-79 Women's Residence Dean, Food Service
Director, and Registrar, Southeast
Asia Union College, Singapore.

1981-83 Graduate Assistant at Department of
Educational and Psychological Services,
Andrews University, Michigan.

1981-82 Part-time Counselor, Andrews University Counseling and Testing Center, Michigan.

1982-83 Assistant Director, Human Relations Center, Institute of Church Ministry, Andrews University, Michigan.

1983-4 Intern at the Clinical Psychology Department, Reading Rehabilitation Hospital, Pennsylvania.