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LA THÈSE A ÉTÉ
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Personal Space: The Effects of
Sex Role, Sex, and Status
on Distancing Behaviour

by
Irwin Pencer

Thesis presented to the School of Graduate Studies
of the University of Ottawa
as partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in Clinical Psychology

Ottawa, Canada, 1980



Irwin Pencer, Ottawa, Canada, 1980.

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Curriculum Studiorum

Irwin Pencer was born in Montreal, Quebec, on July 4, 1948. He received a Bachelor of Science degree with a Major in Psychology from McGill University, Montreal, Quebec in June, 1969. He graduated from the University of Waterloo, Waterloo, Ontario in October, 1971 with a Master of Applied Science degree in Counselling and Human Relations. From July, 1975 until the present he has been enrolled as a doctoral student in the clinical psychology program at the University of Ottawa.

Abstract

The purpose of the present research was to investigate the functional relationship between the three independent variables of sex role of subject and sex and status of the other and the dependent variable of personal space, notably distance preferences. The study was based on the findings that males and higher status individuals are afforded greater personal space, and on the assumptions that sex can be seen as a status characteristic, that sex role development is not easily traced to biological components, that sex role acts as a contributor to sex differences in personal space, and that individuals who have transcended sex roles perceive the relative status of the sexes as equal. Rebecca, Hefner, and Oleshansky's model of sex role transcendence was applied to the aspect of nonverbal behaviour concerned with distance preferences in an attempt to test the following major hypotheses: 1. Sex-typed individuals prefer greater personal space with males than with females unlike androgynous individuals who do not significantly differ in personal space preferences with males versus females. 2. Sex-typed individuals ascribe less variation in actual status (in terms of differential personal space preferences) to females as opposed to males than androgynous individuals who respond to actual status regardless of the sex of the object person.

Subjects were 240 female college students who were classified by means of the Bem Sex Role Inventory into masculine, feminine, androgynous, or undifferentiated sex role categories. The behavioural measure of personal space was obtained by means of an interview procedure. A schematic

measure of personal space was administered in class at a later date and only those 119 subjects who had also participated in the behavioural measure were included in this part of the study.

Results revealed no significant sex role of subject x sex of object interaction effect. A significant sex role of subject x sex of object x status of object interaction effect was revealed on the behavioural measure but in a reverse direction of what had been predicted. Correspondence between the behavioural and schematic measures of personal space was generally low.

Results were explained in terms of the Rebecca et al. model of sex role transcendence and modifications of this model were suggested.

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Introduction

The purpose of the present study is to investigate the functional relationship between the three independent variables of sex role of subject and sex and status of the other, and the dependent variable of personal space, notably interpersonal distance.

The study of personal space had its origins in studies of the use of space in animals. Though a relatively new area of research in psychology, the study of the use of personal space in humans has recently gained momentum, and has been studied in conjunction with such demographic variables as sex, age, and ethnic background, as well as personality and affinity variables.

Since the study of personal space is still in its infancy stage relative to other research areas in psychology, it is plagued even more than these other areas with methodological difficulties and a plethora of findings often inconsistent with each other. In addition, theoretical developments are sparse. As a result, even with findings that, empirically, are fairly well established, alternative explanations or interpretations for these findings have been given.

The present study is primarily concerned with investigating sex role differences in personal space under varying conditions of sex and status. This area of concern developed out of the explanations given in the literature for sex differences in personal space involving the greater passivity, lesser aggressiveness, and lower status of females versus males. Differences in personal space between the sexes have been attributed to sex role differences between the sexes. However, sex role can be seen as not necessarily directly dependent on one's biological sex. Yet, no research has been carried out investigating the potential differences in personal space preferences of

individuals who differ in actual sex role. The concept of sex role used for purposes of the present thesis follows that of Bem (1974, 1977) and is concerned with the extent to which individuals ascribe to personality characteristics traditionally accepted as appropriate for one sex or the other or both. Individuals who ascribe to sex-appropriate personality characteristics as assessed by traditional societal expectations are defined as sex-typed, individuals who ascribe to sex-inappropriate personality characteristics as assessed by traditional societal expectations are defined as sex-crossed (in either case, depending on one's sex, masculine or feminine), individuals who ascribe to both masculine and feminine personality characteristics are defined as androgynous, and individuals who ascribe to neither masculine nor feminine personality characteristics are defined as undifferentiated.

Males are generally seen as higher in status than females and, in terms of personal space, males and higher status individuals are afforded greater personal space. Further, the status of the female, when actually higher (occupational, for example), is not as readily accepted as that of the male under the same circumstances. The present study seeks to investigate how individuals who ascribe to different sex role categories perceive the relative status of others in terms of differential distancing preferences. The particular others with which the present study is concerned are males and females of the same and higher actual status.

The present study utilizes two methods of obtaining distance measures. The first, a behavioural measure in which the subject is unaware of the true purpose of the study, is intended to provide a measure of how a person chooses space in a situation as close to real life as possible. The second, a schematic measure

in which the subject is aware that personal space is being measured, is included because of ease of standardization of procedures, convenience of administration, and as a potential substitute for the more time consuming behavioural method.

The first chapter of this thesis presents a review of the literature and ends with statements of the hypotheses. The second chapter provides an overview of the pilot study. The third chapter presents the full details of the study including a description of subjects, procedure and experimental design. The fourth chapter describes the results of the study. The fifth chapter consists of a discussion of the results, a summary, conclusions, and suggestions for further research.

CHAPTER I

REVIEW OF THE LITERATURE

The present chapter consists of a brief historical introduction to the concept of personal space, a brief overview of the research done in the personal space area, the development of the rationale for the present thesis, and a statement of the hypotheses to be tested.

Personal Space

In recent years, there has been an increase in the emphasis that has been placed on nonverbal behaviour as an area of research in human communication. This increase is evident in the area of proxemics, defined by Leathers (1976) as "the study of how man uses space to communicate" (p. 48), and by Hall (1963) as "the study of how man unconsciously structures microspace - the distance between men in the conduct of daily transactions, the organization of space in his houses and buildings and ultimately the layout of his towns" (p. 1003).

The concept of proxemics has its origins in the regulation of distance in animals. Two categories of space management in animals can be identified. The first, territoriality, has been defined by Hall (1966) as "behavior by which the organism characteristically lays claim to an area and defends it against members of its own species" (p. 7); and the second, has been defined by Hall (1966), citing Hediger (1950, 1955, 1961), as a series of bubbles or irregularly shaped balloons surrounding each animal that serve to maintain proper spacing between

individuals. Four distances are involved in the latter type of space management as defined by Hediger: flight and critical (fight) distances, used when individuals of different species meet; and personal and social distances, observed in the interaction between members of the same species. Personal distance is the distance which acts as an invisible bubble surrounding the organism. The extent to which the bubbles of individuals of the same species overlap is related to the degree to which the individuals are involved in an interaction. Social distance is considered to be a band that contains a group of a particular species beyond which individuals of that group lose contact with each other. It is not physical distance per se and, in man, has been affected by such inventions as the telephone and television.

In this thesis, the concern is with personal distance (or space) in humans where personal distance is viewed as a subsystem of proxemics. Further review of definitions used in the study of personal space, as well as theoretical developments and methodological issues¹ can be found in Appendix 4.

Overview of Findings in Personal Space

Research has been carried out relating personal space to personality, demographic, familiarity and affinity variables. Lett, Clarke and Altman (Note 1), in an attempt to establish an overview of findings in the personal space area, drew a representative sample of studies from the personal space literature and arrived at four well-established or reasonably well-established sets of results. First, "the more group members like or know each other the closer their interpersonal distance" (p. 24). The converse was also noted to be a

¹ Table 1 presents the major methods used in obtaining measures of personal space preferences.

Table 1

Methods for Measuring Personal Space^a

-
1. Naturalistic Observation - field studies
 - unobtrusive observation
 - participant observer
 2. Experimental Methodology - physiological recording
 3. Behavioural Approach Studies - subjects approach a decoy or another subject or are approached by a decoy or another subject and choose the interaction distance
 - standing or seated conditions are used
 - subjects may or may not be aware of the purpose of the study
 4. Social Schemata Techniques - pictorial or graphic representations of personal space behaviour with or without a self-referent condition
 - when a self-referent condition is used subjects are either approaching or being approached by an imagined other
-

^aAdapted from Evans (1973)

well-established finding: "the closer the interpersonal distance between people the greater their social contacts and bonds" (p. 28). Little (1965) and Mehrabian (1968a, 1968b) carried out studies in this area. Another finding is based on the proposition that "personality abnormality is associated with use of large interpersonal distance" (p. 13), and more generally, individuals who are deviant psychologically, sociologically or physically maintain greater distance from others. Findings also indicate that this proposition is based on a nonmonotonic function. For example, abnormals may maintain inappropriate distance from others as compared to normals (that is, either greater or lesser distance). Lending weight to this proposition, Sommer (1959) had found that schizophrenics varied in their distance behaviour, on occasion remaining very far from another on occasion coming very close to another, and Horowitz, Duff and Stratton (1964) had found greater variability in the personal space behaviour of schizophrenics than of normals. A fourth set of propositions, based on tentative or moderately well established findings, involved sex differences in personal space and stated that females maintain and are afforded smaller interpersonal distance than males and that mixed sex dyads interact at smaller distances. This area will be discussed in more detail in a later section on sex differences and personal space. Though race and cross-cultural studies have been carried out in the area of personal space (Baxter, 1970; Hall, 1966; Little, 1968; Watson & Graves, 1966), this area received little attention by Lett et al. Among the findings in this area are that Americans and Northern Europeans tend to have larger interpersonal distance preferences than Arabs, French and Mexicans.

Status

Status can be defined as the power or prestige ascribed a position in a particular social structure (Knowles, 1973; Young, 1957). Status is closely related to role in that role defines the position within the social structure. Roles can be classified as either ascribed or achieved. An example of a role that has been ascribed, and thus over which one has little control, is one's sex; an example of an achieved role is one's position within a university setting.

With respect to status and spatial behaviour, until recently, animals have been the subject of more extensive study than humans. Two concepts emerging from this research are territoriality and dominance which, according to Sommer (1969), are complementary processes of limiting aggression and means by which the social order is maintained. To illustrate, with pairs incompatible in dominance, such as two highly dominant individuals, aggression is limited and stability is maintained by strict adherence to territorial rights. Dominance hierarchies can also be said to preserve the social order within a culture as can be seen from the elaborate pecking orders which exist in the animal world.

In view of the complementary functions of social and spatial orders, it is not surprising to find spatial correlates of status levels and social correlates of spatial positions in both animal and human research. In the barnyard, top chickens have the greatest freedom of space, lower birds are more restricted. The threat of aversive consequences (Dean, Willis, Frank and Hewitt, 1975) for the lower status animal in interaction with the higher status animal can be said to determine the former's use of space in that situation. In humans, the threat of aversive consequences still exists even though it may not be in the form of direct physical consequences. The individual, thus, when confronted by a higher

status other, would want to maintain greater psychological, and in turn, physical distance from that other. This reaction is further reinforced in humans by the fact that the social elite actually possess more space in the form of larger homes with more rooms per home and executives are actually allotted greater privacy and larger offices than subordinates.

Research on the personal space of humans with respect to status differences has demonstrated this effect of status differences on the physical distances maintained between interactants. For example, Hall (1966) reported that status is an effective modulator of spatial interactions in that persons of higher status are approached less closely than persons of lower status.

Other research, carried out by Lott and Sommer (1967), used three questionnaires (schematic personal space measures) and a behavioural approach method which resulted in four separate studies to determine the relationship between distance preferences and status for university students. Sample size for the questionnaire studies was in each case greater than 200 and sample size for the behavioural study was 31. An operational definition of status was obtained by first requesting another group of students to draw a subjective dominance hierarchy. This resulted in the use of "a professor" (p. 91) as a higher status figure, "another student in your class" (p. 91) as a same status figure and "a freshman who is doing poorly in school" (p. 91) as a lower status figure for the final study. With regard to status, it was found that the greater the status discrepancy between subject and other, regardless of whether the status of the other was lower or higher, the greater the distance of the interaction. Mehrabian (1968a), studying individuals interacting with either higher or lower status others, found no significant differences in distance

between these two conditions, a result not inconsistent with Lott and Sommer's findings since Mehrabian was not studying peer dyads.

Other researchers have used a definition of status similar to that of Lott and Sommer (1967) in studying personal space. Edwards (1977), using a schematic approach to measuring personal space, studied 36 male and 36 female university students and found that distances were significantly larger in placements of "university lecturer" (p. 226) than of "fellow students" (p. 226). Grossman (1977), for his dissertation, studied the effect of status and dominance on interdistancing behaviour of 60 junior and senior high school students using a behavioural method of which the subject was aware to measure personal space. A significant main effect for status was uncovered. A Duncan Multiple-Range Test was applied and revealed that all three means (lower, same and higher status) were significantly different from one another at the .05 level of significance and that lower versus higher and same versus higher status were significantly different at the .01 level. This finding was unlike that of Lott and Sommer who had found that status discrepancy and not increases in absolute status produced increases in personal space preferences.

Dean, Willis, Frank and Hewitt (1975), in a field study of initial interaction distance among 562 uniformed Navy personnel, equal and unequal in military rank, found that interaction with superiors was characterized by significantly greater distance than with peers and that this distance increased with rank discrepancy. In interactions initiated by a superior, interaction distances were unrelated to rank discrepancy, thus indicating that superiors can approach others at distances indicating intimacy while the reverse is not true. This finding only partially supports those of either Lott and Sommer (1967) or Grossman (1977).

Studies investigating the extent to which passerby would penetrate high status versus low status groups (Knowles, 1973; Walker & Borden, 1976), where status was manipulated by means of age and/or dress, indicated that high status groups were significantly less permeable to invasion.

Other studies on status and personal space (Jorgenson, 1975; White, 1975; Wittig & Skolnick, 1977) failed to find a significant effect for status on interpersonal distance though Jorgenson, in a field study of 23 supervisors and 26 nonsupervisory employees, did find that equal status pairs assumed a significantly more direct angle of orientation in their interaction.

Stratton, Tekippe and Flick (1973), using self-concept (as measured by the Tennessee Self-Concept Test) as a self-rating of status and a behavioural approach method of measuring personal space, studied 19 male and 14 female freshmen and found a significant effect for self-concept in that high self-concept students approached a male student significantly more closely than medium and low self-concept students reflecting the privilege of higher status persons to approach others more readily. Using a schematic approach method, however, results were in the opposite direction.

Though results are not completely consistent, a majority of studies have found that higher status others tend to be afforded greater interpersonal distance than same status others. With regard to lower status others, findings are not as clear and distances in this condition have been found to be either greater or less than with same status peers or have shown no trends at all.

The previous studies also reveal that, in order to maximize the status differential which, in turn, determines the use of space in a particular interaction, the following conditions should be met:

1. The particular social structure within which a person is operating is important for him. For example, a university setting is important for a student who aspires to obtain a degree.
2. The person whose status is being assessed relative to one's own functions in the same social structure as oneself. For example, a student within the social structure of a university is best compared to someone else within that social structure, for example, a professor.
3. The person whose status is being assessed relative to oneself is in a higher actual position in the social structure. An example of such a person could be a professor whose relative status is being assessed by a student.
4. The person in the higher position in a particular social structure is perceived as capable of inflicting aversive consequences on subordinates. For example, a professor can fail a student on a particular examination or research paper, a military officer can retard the advancement of a private.

With regard to the status variable in the present study, status differential will be achieved by satisfying the previously mentioned conditions. This will serve to maximize the corresponding space differential.

Sex as a status variable. As can be seen from the foregoing section, numerous measures of status exist (occupational status, educational status, military rank, age, dress), all of which have been manipulated to investigate the effects of status on personal space preferences. In our society, sex has also been viewed as a status variable.

Lockheed and Hall (1976) discuss this from the point of view of Berger, Conner and Fisek's (1974) theory of diffuse status characteristics and

expectation states. Status, as defined by Berger et al., refers to the value attributed to the different state of the differentiating characteristic. If sex functions as a status characteristic, with males more highly valued than females, the theory states that males will be more likely to hold positions of power and prestige in mixed sex groups than females. Lockheed and Hall present evidence for such a view citing numerous studies indicating that both sexes evaluate males more favourably than females, that there are differences in expectations associated with being male or female, and that males are expected generally to be better than females. Further evidence for this view can be found in the following studies. Hagen and Kahn (1975) studied 40 male and 40 female introductory psychology students and found that individuals significantly discriminate against competent women and the more traditional the men based on The Attitudes Toward Women Scale (Spence & Helmreich, 1972), the less likely they were to give competent women high status and the more likely they were to be discriminatory. Jacobson and Effertz (1974) studied leadership in groups using 36 male and 36 female introductory psychology students and found that male leaders are significantly different from female leaders in that they have to meet higher standards than female leaders and that followers will tend to perceive the group as more successful when it is led by a woman than by a man, implying lower standards for women. Megargee (1969) studied 80 and 64 pairs (combinations of male-female, high-low dominance individuals) of introductory psychology students who were respectively involved in masculine and neutral tasks. Differences between the four groups generated by the sex, dominance variables for both the masculine and neutral tasks were significant and results indicated that high dominance females were generally unwilling to assume leadership over low dominance males regardless of whether the task to be carried

out was masculine or neutral in nature. Johnson (1976), studying 60 psychology students, discussed social power as potential social influence or the ability of one person or group to influence another and found that women are significantly different from men in that they are expected to use methods of influence that are less direct, less based on reasoning, more based on personal relationships, and less active and aggressive. She cited Raven's (1965) six bases of power in an attempt to operationalize specific hypotheses about the differential use of power by males and females. According to Johnson, legitimate power, that which involves one as having the right to ask another to do something and to which the other is obliged to comply, appears to be expected of males and that even when a woman is in a position of authority she is frequently not granted legitimate power by virtue of society's expectations.

Sex differences thus often imply status differences, males being perceived as higher in status than females. It follows that if males are seen as higher in status than females, males should be allotted greater personal space than females as a nonverbal acknowledgement of the higher status of the male. In fact, as the following studies show, it has been found that females maintain and are afforded smaller personal space than males. That is, the differential status of males and females is often expressed nonverbally.

Rawls, Trego and McGaffey (Note 2) investigated correlates of personal space using five behavioural measures on a sample of 38 males and 46 females who were university juniors and seniors and found that males have significantly greater personal space zones than females. Similar results were found by Sommer (1959).

Barrios (1976), in a study of stigma and personal space on 20 male and 20 female psychology students, found that both male and female subjects prefer to

sit significantly closer to a female than male confederate and no significant differences were found in seating preferences of male and female subjects.

DeJulio and Duffy (1977), studying neuroticism and proxemic behaviour on 50 male and 43 female introductory psychology students, found no significant main effect for sex of subject but found that subjects maintained significantly greater distance from male as opposed to female experimenters.

Pedersen and Heaston (1972) studied the effects of sex of subject, sex of approaching person, and angle of approach upon personal space using a schematic and behavioural technique on 20 male and 20 female psychology students. With the schematic technique, it was found that subjects permitted females to approach significantly more closely than males.

In studies carried out using the Comfortable Interpersonal Distance Scale (CID) developed by Duke and Nowicki (1972), it was found that both male and female subjects kept male strangers further away than female strangers. Petri, Huggins and Barry (1974), using the CID, studied 38 male and 62 female undergraduate psychology students and found a significant main effect for sex of the approaching stranger for both male subjects and female subjects in this direction. In other studies using the CID (Crowe, 1975; Veitch, Getsinger & Arkkelin, 1976), on 90 female and 67 male undergraduates and 92 female and 58 male introductory psychology students respectively, it was found that females exhibited significantly smaller personal space zones than males, and that males as compared to females allowed an opposite-sex stranger to approach significantly closer. Another study explored the relationship between personal space (using the CID) and body-image definiteness (as measured by the Barrier score on the Holtzmann Inkblot Technique) using 34 male and 43 female

introductory psychology students (Sanders, 1976). Among the findings was that both sexes kept male strangers significantly farther away.

McBride, King, and James (1965), studying social proximity effects on GSR (an experimental methodological approach) in 20 males and 20 females, found that GSR to male experimenters was greater than to female experimenters.

Walker and Borden (1976), studying sex and status, found that high status groups, particularly those composed of males, were significantly less permeable to invasion.

Some studies have explicitly given a status interpretation to sex differences in personal space behaviour.

Frieze, cited by Wittig and Skolnick (1978), has indicated that women, like lower status individuals, are generally allotted smaller personal space zones than males or higher status individuals possibly because sex differences in personal space are reflecting status differences. An observational study of 101 cases of touching in public supporting this idea, was carried out by Henley (1973) in which sex was identified as a status characteristic. In a subsample of 38 cases of individuals equated for all demographic data but sex, it was found that a significantly larger number of males touch females than females touch males or than males touch males or than females touch females, further confirming the higher perceived status of the male.

Wittig and Skolnick (1978), studying status, warmth, and sex differences in personal space with 40 male and 40 female introductory psychology students and using a behavioural approach method of measuring personal space of which the subject was unaware, found that, though no significant main effect for status occurred, a significant interaction effect between sex and status was found and a Newman-Keuls test of differences between the four means revealed that subjects

placed themselves at farther distances from the lower status versus the higher status man and farther from the higher status woman than the same status woman. This result was similar to a finding in the study carried out by White (1975). Though results run counter to expectation, Wittig and Skolnick offered a partial explanation for this finding in terms of the finding that the higher status female was judged significantly less desirable as a friend than the lower status female, a situation not found with the male confederate. They further speculated that subjects sat closer to the high status male to "vicariously experience his powerfulness" (p. 501) and that the high status female was not seen as more powerful but as, in fact, lacking in power.

In interpreting their results, other investigators in the area of personal space have supported the notion of females having lower status than males. Geisen and Hendrick (1977), in a study of the effect of physical distance and sex in moderated groups on moods, evaluations, attraction, and attitude expression using 120 male and 120 female introductory psychology students, found significantly more positive reaction to female moderators in the close than in the far condition on several of the dependent measures. This was explained in terms of the female moderator being perceived as somewhat lower in status than her male counterpart which would make closer seating more appropriate and thus more satisfying. Other evidence from the literature on personal space of females being perceived as lower in status comes from studies by Lott and Sommer (1967) and Tolor et al. (1975). In the former study, in the development of the status hierarchy, females often put their boyfriends or husbands above them, unlike males who never put a girlfriend or wife above them. Also, in the actual study, twice as many subjects would choose a head chair for themselves in interaction with a female versus a male professor, reflecting less recognition

of the status of the female. Tolor et al., in an exercise on vertical schematic displacement of self and target figures, found that women place themselves in an inferior position in relation to a variety of others and only achieved some semblance of equality with respect to friend, boyfriend and girlfriend. Males, on the other hand, frequently assigned themselves a superior position. His point was that women's culturally inferior status was so ingrained that it even reveals itself on a schematic technique.

Sex Role

Discussion has so far concentrated on personal space from the perspective of sex differences and status differences. Linkages between sex and status, both generally and in terms of personal space have been discussed. Females are often described as having lower status than males and personal space differences between the sexes are frequently discussed in terms of the differential status of the sexes. The study carried out by Henley had even operationally defined sex as a status variable.

Frieze and Ramsay (1976), in a discussion of sex roles and nonverbal behaviour, state that the lower status of the female is actually perpetuated by the differential nonverbal behaviour of the sexes. Males tend to display nonverbal cues of dominance, high status and power. Females display cues of greater emotional warmth and liking which are also indicative of lower status. The nonverbal behaviours which communicate low status and submission are almost synonymous with femininity (for example, small personal space, soft and polite speech, affability). These cues are traditionally thought to be related to the female biological role though they may actually be outgrowths of the submissive social role of the female. These cues tend to be resistant to change since they

are generally unconscious and violations of these norms have led to accusations of assertiveness or aggressiveness which have had negative loadings for women. The larger personal space of the male can be seen as a manifestation of his actual dominance over the female and the relative lack of territory (physical space, privacy) of the female may serve to limit opportunity for the personal growth necessary to change sex role stereotypes. In short, Frieze and Ramsay (1976) are saying that males display nonverbal cues of high status, females, nonverbal cues of low status. Moreover, female cues are identified with femininity, male cues are identified with masculinity and both are seen as sex-appropriate. Traditional roles are maintained because behaviours may be unconscious, lack of territory of the female limits opportunity for personal growth, and women have had to deal with rejection for manifestations of assertiveness.

Further discussion of the concept of sex role is necessary here. A large number of terms have been used in discussing the differentiation of the sexes. Attempts to clarify the meaning of the various terms have resulted in confusion. Constantinople (1973), in a review of tests of Masculinity-Femininity (M-F), indicated that the confusion resulted from the inconsistent inclusion of concepts in definitions of M-F.

Spence and Helmreich (1978), in their book on the psychological dimensions, correlates and antecedents of M-F, in an attempt to clarify the study of sex differentiation, distinguished between four domains: biological gender, sexual orientation, sex role and M-F. A similar breakdown was offered by Bem (Note 3). Spence and Helmreich defined biological gender as involving classification into male or female categories. As a subclassification, gender identification was defined as "the degree to which individuals are aware of and accept their

biological sex" (p. 12). Sexual orientation referred to "the individual's preference for a sexual partner of the same or opposite sex" (p. 12). The term sex role was defined in terms of expectations about the ways typical men and women behave. Sex role expectations were defined as "those beliefs about appropriate behaviors for the two sexes, that is, behaviors that are positively sanctioned for members of one sex and ignored or negatively sanctioned for members of the other" (p. 13). M-F referred to personality attributes.

Because sex role differentiation in human societies is prevalent, males and females are seen as differing in temperament. If sex role differentiation which results in the differential status of the sexes can be traced to some biological cause, then the differential nonverbal behaviour of males versus females can be seen as an expression of a biological predisposition to behave in a certain manner and as, of necessity, relatively stable. Though many differences in sex role behaviour exist across societies, women are generally given primary responsibility for child rearing, men for supporting the family economically, and regarding power relations, men typically are seen as dominant. These findings do seem to suggest a biological or genetic basis for role and temperament differences between males and females.

As has been suggested by a number of investigators, however, the previously mentioned view is not generally accepted. For example, Mead (1935), in her study of three New Guinea tribes found that in one tribe, both men and women were trained to be nonaggressive, and in another tribe, both were trained to be aggressive. This indicates that both males and females have the potential to incorporate temperaments thought to be the domain of only one sex. Spence and Helmreich, in discussing the origins of sex role differentiation, indicated that some researchers maintain that social arrangements are a result of

"profound, genetically determined differences in the psychological makeup of males and females" (p. 5), and other researchers maintain that "the origins of sex role differentiations lie in a more limited set of innate differences between the sexes" (p. 5). These innate differences are the greater physical strength and higher metabolic rate of males and childbearing factors related to females such as nursing and caring for children. Spence and Helmreich stated that there was no evidence regarding "the existence of genetically determined differences in the temperamental makeup of men and women" (p. 5). Human personality was seen as extremely malleable and dependent on "sex-specific child-rearing practices" and "the nature and severity of sex-role differentiation imposed by that society" (p. 5). These factors, in turn, were related to political, sociological and economic forces. This viewpoint appears to be in agreement with that of Maccoby and Jacklin (1974) who stressed the importance of reinforcement and imitation in the development of sex role differences and M-F.

From what has been said, it appears that males and females are differentially reinforced to develop personality characteristics which will lead to conformity to society's demands regarding appropriate behaviour and that genetic factors with respect to sex role, if they exist at all, play a minor role. The implications of this view, which the writer supports, are that females are less constrained by biological roles (for example, childbearing) than in the past. Nonverbal behaviour that serves as an expression of differential sex role, and in turn of differential status of the sexes, is no longer easily traced to or strongly influenced by biological predispositions. It is thus much more readily open to change.

A complex relationship thus emerges among sex, status, and sex role in conjunction with nonverbal behaviour. Gender is seen as one determinant of status, with males having higher status and being afforded greater personal space than females. Sex role can also be seen as a determinant of status with the masculine role of the male perceived as higher in status than the feminine role of the female. Sex role may thus be seen as a refinement of actual gender in predicting personal space preferences. With the advent of the feminist movement, involving the change in status and sex role of females, reinforced by the limited role biological factors play in determining sex roles, the investigation of personal space behaviour of individuals differing in sex role was in fact initiated. Studies on the development of personal space preferences in children and sex differences in personal space in adults, to be reviewed in the following two sections, serve as forerunners of these studies on sex role differences in personal space in that differences between the sexes in personal space are interpreted in terms of sex role differences and differences in the socialization processes of males and females. Though these studies do not suggest that sex role can actually vary within sex, they do suggest that sex role is a factor in personal space behaviour. The third section involves a review of recent studies in which sex role is the factor actually being controlled and varied within sex and thus reflects contemporary conceptualizations of sex role development and further reinforces the relevance of sex role to the study of personal space.

Personal space and development. In attempts to determine how and when individuals develop and consolidate personal space preferences, studies have been carried out on children of various age ranges. These studies have concentrated on the development of differential personal space preferences of

males and females under varying conditions and results are often interpreted in terms of sex role development or sex-appropriate behaviour.

Melson (1977) indicated that because awareness of sex-typed behaviour increases between 3 to 5 years of age, sex differences in personal space preferences may begin to crystallize within this age range as well. Because of the possibility of the existence of sex differences in personal space within this age range, a relationship between sex role identification (based on the Rabban Toy Choice Measure, Rabban, 1950) and personal space was hypothesized. Melson used a social schemata technique, involving subjects placing same, opposite and mixed sex pairs, and naturalistic observation of same sex pairs, to obtain measures of personal space preferences. The sample studied consisted of 36 males and 44 females between the ages of 3 and 5. Results of the study indicated that personal space schema emerge between 3 and 5 years of age, and the greater distance in placement of opposite sex pairs by older children suggested an increasing awareness of sex differences with age. The relationship between sex role identification and spacing for males (which did not occur for females) and the higher sex role identification score for males at all ages were explained in terms of possible negative sex role learning for males in which greater sanctions on their behaviour than on that of females are made. Melson, with respect to the greater distances chosen by older boys in both social schema and observed behaviour relative to girls and its coincidence with heightened sex role identification, raised the question whether boys' toys elicit space preferences or whether boys seek toys that require extensive space because of greater personal space preferences and higher activity level. Essentially the question implied was whether sex differences in personal space could be readily traced to biological factors.

Bass and Weinstein (1971) studied 59 boys and 54 girls ages 5 to 9 using a social schemata technique. No significant main effect for sex was found though differences between sexes was greater for older subjects. It was concluded that sex was probably not a relevant variable between 5 and 9 in determining personal space preferences.

Lomranz, Shapira, Coresh, and Gilat (1975) studied boys and girls aged 3, 5, and 7, using an experimental approach method, and found no significant effect for sex of subject but that significantly less distance was kept from girls than boys. Sex of object differences were explained in terms of learned patterns of behaviour involving expectations for girls to be sociable, unaggressive and for boys to be assertive, strong and aggressive. Boys, as a result, may have been communicating greater resistance to invasion of personal space while girls may have been communicating cues encouraging, or at least not resisting, invasion.

Pedersen (1973) investigated personal space preferences of 66 males and 66 females in Grades 1 to 6 in an analysis of variance repeated measures design, using a social schemata technique and found that there was a significant main effect for sex of subject. Across all grade levels and stimulus persons, females placed their self-figure significantly closer to other figures than did males, though at Grade 1, females were found to have larger personal space zones than males. By Grade 3, males had significantly larger personal space preferences than females and this persisted until Grade 5. Between Grades 3 and 5, personal space tended to decline for both sexes. The downward trend in personal space reversed itself for females by Grade 6, resulting in similar personal space preferences for both males and females at this level. Social learning factors were cited in discussing the large personal space preferences for Grade 3 boys and reversal in personal space for Grade 6 girls.

Meisels and Guardo (1969) investigated the development of personal space schemata in 235 males and 196 females in Grades 3 through 10 by means of social schemata techniques. Among the findings was that, in negative affect conditions, females used significantly more space than males. This was explained in terms of the process of sex role identification in which males, in overt behaviour, are aggressive and females, dependent and passive. Generally, similar findings were noted by Whalen, Flowers, Fuller, and Jernigan (1975).

In another study, Guardo (1969), using 30 male and 30 female in Grade 6, investigated acquaintance and liking in relation to personal space using social schemata techniques. Girls were found to have significantly smaller interfigure distances than boys for situations with a best friend and with someone liked very much. These results were explained in terms of sex-appropriate behaviour involving greater freedom for women in our society to interact at closer distances relative to males. Another finding was that girls preferred significantly greater inter-figure distance than boys for the peer figure described as someone of whom one is afraid. This finding was discussed in terms of sex-appropriate behaviour as well since boys are more overtly aggressive than girls and are thus expected not to display as much anxiety as girls when threatened.

Guardo and Meisels (1971) also studied praise and reproof involving 235 boys and 196 girls in Grades 3 through 10 using a social schemata technique. Under conditions of praise, girls were significantly closer to parents than boys, younger children were significantly closer to parents than older children, and children were significantly closer to the father. Under reproof, children were significantly more distant from the father. The finding that girls and younger children were closer to parents under the praise condition was seen in

terms of social role considerations involving a greater need for approval of girls and younger children relative to boys and older children.

Tennis and Dabbs (1975) studied 20 boys and 20 girls in each of Grades 1, 5, 9, and 12 and college sophomores using experimental approach and social schemata techniques. Males preferred significantly greater personal space than females and a significant interaction effect between age and sex occurred. Older males relative to older females, had significantly proportionately greater personal space preferences than younger males versus females. Tennis and Dabbs offered a sex role interpretation of sex differences and sex differences across age, stating that older males, unlike Grade 1 males, are aware of society's expectations and attitudes regarding physical closeness between adult males.

In summary, well-established results indicate that, with regard to sex differences in personal space across age, differences between boys and girls have been found to be minimal at the Grade 1 level and possibly even up to Grade 3 possibly reflecting a lack of differentiation of sex roles during this period of development. A trend favouring greater personal space preferences in boys only, however, is evident from age 3 on in that personal space of boys appears to correlate positively with sex role identification. This correlation is not exceedingly high and was found only on a schematic measure of personal space, but the results nevertheless reflect the potential relationship of sex role identification to personal space. In fact, by Grade 3, girls have smaller distance zones, possibly reflecting less restrictions on them for the development of intimate relationships with others regardless of the sex of the other and greater restrictions on approach behaviour for boys.

Personal space and sex differences. Leibman (1970) hypothesized that, because of the differential socialization processes of males and females, which

encourage females to be more dependent, emotional, and capable of forming intimate relationships than males, females would maintain greater distances from male versus female strangers and that females would be more likely to intrude on the personal space of females than of males. Leibman studied 98 non-college females using a behavioural method in which subjects, unaware of the true purpose of the study, were presented with one of three seating conditions. Results indicated that subjects sat only somewhat closer to females than to males on a long bench, chose to intrude on female space significantly more frequently than male space when required to choose, and sat significantly closer to a female when she was chosen over a male as compared to other situations. Leibman concluded that social norms regarding appropriate distancing behaviour between males and females become important only when subjects are required to choose between invading male versus female space.

Buchanan, Juhnke, and Goldman (1976) carried out an experiment similar to that of Leibman but one that took place in an elevator. Results were partially in agreement with those of Leibman in that both male and female subjects avoided spatial intrusion of a male confederate.

Tolor (1975), Tolor and LeBlanc (1974) and Tolor, Cramer, D'Amico and O'Morra (1975) have been involved in investigating procedural variations in measuring interpersonal distance and in studying sex differences in interpersonal distances. Of particular relevance is the study carried out by Tolor and LeBlanc on 72 male and 35 female undergraduates. Males were found to have significantly greater interpersonal distance preferences to a male experimenter than females and to sit further away from a female confederate than female subjects. Results were interpreted in terms of a male's greater need for

independence (a conclusion in line with that of Leibman) and less need for assisting others.

Dosey and Meisels (1969), using two behavioural approach methods and a social schemata method, studied personal space preferences of 91 male and 95 female introductory psychology students under stress conditions of having one's physical attractiveness called into question and found that females approached closer to females than males, while males used virtually the same distance in approaching the same versus the opposite sex. This was accounted for by a cultural norm of attractiveness for females in interaction with male strangers. In an implied threat as stress condition, Bailey, Hartnett and Gibson (1972) studied 40 male and 40 female introductory psychology students and, using a behavioural approach method with subjects approaching and being approached, found that subjects tended to stay significantly further from males than females, that the largest personal space zone occurred in the male-male condition, that females showed little relative difference in distance preference between object persons, and that males allowed greatest closeness to the female object person. The large male-male space zone finding was explained in terms of societal norms which view physical aggression as a male domain leading males to stand back from other males. In a study of sex differences and type of movement, which also used a behavioural approach method (subject approaching and being approached), Hartnett, Bailey, and Gibson (1970), studying 32 male and 32 female introductory psychology students, found that personal space was significantly greater when subjects approached the experimenter than vice versa and that this was significant for females but not for males. It was concluded that obtained differences between males and females were consistent with appropriate sex role behaviours involving the greater passivity of females.

Little (1965) and Willis (1966), in studies of the effect of sex and degree of acquaintance on personal space preferences, found respectively, that males differentiated between strangers and others and females between friends and others; and that, unlike males, females differentiated between friends and good friends, in terms of personal space preferences. Results were explained in terms of differential social conditioning of males and females.

As can be seen from the previous review, two well-established findings are that people generally maintain greater distance from males than females and that females interact at smaller distances than males. Explanations for sex differences in personal space have been couched in terms of differential societal expectations for the sexes involving the greater independence of the male, less restrictions on intimacy for the female, the greater passivity of the female, the importance of physical attractiveness for the female, and the greater perceived threat of the male. Findings from several studies have also reflected the importance of the sex of the other as opposed to the sex of the subject in determining one's personal space preferences. In general, results are interpreted in terms of the differential sex roles of males and females.

Personal space and sex role. Though, traditionally, Masculinity-Femininity and sex role behaviour have been viewed as directly dependent on one's sex, contemporary views of Masculinity-Femininity and sex role argue in favour of potentially similar sex roles for either sex. Bem (1974), in developing the Bem Sex Role Inventory, used the concept of androgyny to reflect this viewpoint. Androgynous individuals were seen as having both masculine and feminine personality characteristics and thus greater flexibility of behaviours than

their sex-typed counterparts who were either masculine or feminine in personality characteristics.²

The important of sex role learning for sex differences in personal space, leads to speculations about personal space preferences of individuals who do not fit stereotyped sex roles either in attitude, behaviour or specified personality characteristics. A limited number of studies in this area have in fact been done.

In a correlational study carried out by Rawls et al. (Note 2), the relationship between personal space and masculinity based on the M Scale of the Guilford-Zimmerman Temperament Survey was investigated (Guilford & Zimmerman, 1949). Subjects were 38 male and 46 female university juniors and seniors. Findings were not significant.

In a study exploring traditional versus non-traditional attitudes toward sex role, Tipton, Bailey and Obenchain (1975) studied 72 female undergraduates and, using a behavioural approach method, in which subjects were aware space was being investigated, predicted that "1. feminists would be more aggressive and assertive in invading male personal space and that; 2. feminists would permit more invasion of their personal space due to their greater affiliativeness and openness than females with more traditional attitudes" (p. 100). The Attitudes Toward Women Scale (Spence & Helmreich, 1972) was used to obtain feminist and non-feminist categories. The first hypothesis was supported in that traditionals stayed significantly further away from the male object person than feminists. Other findings were that feminists did not differ significantly from traditional females in approach to other females and traditionals tended to

² Appendix 1-C, Part 1, contains further information regarding the background of the contemporary Masculinity-Femininity test movement, the Bem Sex Role Inventory, and behaviour flexibility studies.

remain at greater distances from males than females though this latter finding was not significant. Regarding the second hypothesis, data were in the expected direction but were also not significant.

Powers and Guess (1976), arguing that Tipton et al. had carried out their study using questionable procedures (among these, non-random sampling, a confusing operational technique and overt disclosure of dependent variable), replicated the Tipton et al. study using a behavioural approach method of which the subject was unaware and classified individuals as feminists who had scored above the midpoint on both feminist/non-feminist and dominant/submissive semantic differential scales. No significant differences between feminists and non-feminists were found in their approach behaviour to males and further research in this area was suggested.

The previous review of sex role studies with respect to personal space thus indicates that no research on sex role differences has been carried out using a definition of sex role which has direct relevance to one's repertoire of possible behaviours. One's attitude toward the role of women (the measure used in the Tipton et al. study) does not indicate that one behaves in a manner consistent with these attitudes or that one ascribes to personality characteristics consistent with these attitudes. Further, concluding that one is non-traditional on the basis of two items of a semantic differential (feminist, dominant), as was done in the Powers and Guess study, does not inject much strength into the independent variable studied. It would appear that the definition of sex role needs strengthening before conclusions are reached in this area. It is further maintained that, given the direction of evolution of society towards more egalitarian roles for men and women, the decreasing value placed on sex-appropriate behaviour, and the somewhat outdated interpretations

frequently given to sex differences in personal space in published research, the area of sex role should be further investigated with regard to personal space.

A Model of Sex Role Transcendence

It has been established that sex and status are important areas of concern in the study of personal space. Sex role studies have recently begun to be carried out as well. A major concern of the present thesis is to investigate the manner in which these factors interact in determining personal space preferences.

Rebecca, Hefner, and Oleshansky (1976) have developed a three stage model of sex role transcendence which is relevant to this problem. This model purports to account for the failure of more traditional models to explain sex role development in that it goes beyond traditional society's expectations regarding sex role differentiation, it argues in favour of an environmental basis for the development of sex role in that any genetic predispositions that might encourage the development of sex-typed personality characteristics and consequent behaviour are considered insignificant, and it recognizes the existence of the evolution of the relative status of the sexes.

Stage I of this model represents a period of undifferentiated sex roles. As a child gradually becomes aware of society he moves toward Stage II, that of polarized sex roles, in which the child accepts conventional sex roles and views the fit to the stereotype as necessary. Societal expectations and values reinforce sex-appropriate behaviour at this stage. A parallel between this stage and the traditional view of Masculinity-Femininity can be made in that, at this stage, masculinity and femininity are seen as mutually exclusive and individuals are sex-typed (according to Bem, high Masculinity-low Femininity for

males; low Masculinity-high Femininity for females). In conformity with a traditional view of sex-appropriate behaviour; and as noted by Frieze and Ramsay, females are perceived as lower in status than males at this stage. This difference in status is seen nonverbally as well in that females (and lower status persons) are afforded smaller personal space than males (and higher status persons). Research findings on the development of personal space zones in children and sex differences in adults are in fact frequently interpreted from a Stage II reference point. The male's larger personal space zones are considered sex-appropriate and differential status of the sexes are frequently offered as interpretations of these findings (Bailey et al., 1972; Barrios, 1976; Buchanan et al., 1976; DeJulio & Duffy, 1977; Guardo, 1969; Guardo & Meisels, 1971; Hartnett et al., 1970; Henley, 1973; Leibman, 1970; Little, 1965; Lombranz et al., 1975; McBride et al., 1965; Meisels & Guardo, 1969; Melson, 1977; Pedersen, 1973; Sanders, 1976; Tennis & Dabbs, 1975; Walker & Borden, 1976; Willis, 1966; Wittig & Skolnick, 1978).

Rebecca et al. describe the transition to Stage III, that of sex role transcendence, as involving a paradigm shift. Stage III, rather than being given wide societal support, is supported only by specific reference groups. At this stage, behaviour is determined by personal choice in the face of situational demands rather than societal expectations of sex-appropriate behaviour. Parallels between this stage and the contemporary views of Masculinity-Femininity are readily seen in the concept of androgyny in which behaviour is characterized by the demands of the situation and not in terms of what is appropriate for one's sex. Behavioural flexibility, rather than conformity to expected norms, is prepotent and sex-typed personality characteristics have been transcended. With regard to status, males and females

are viewed as equal in that the concept of sex-appropriate behaviour, involving the higher position and prestige of the male in society as an expected state of affairs, has vanished.

Presentation of Research Questions and Expectations

Frieze and Ramsay have stated that sex roles involving the lower status of the woman relative to the man are perpetuated by the differential nonverbal behaviours of males and females (for example, the smaller personal space of the female relative to the male). Society is evolving in the direction of more egalitarian sex roles for males and females and according to some researchers (Bem, Spence) toward the eventual abandonment of sex roles. The androgynous individual, who responds behaviourally to what is appropriate for a particular situation rather than to what behaviour is appropriate for his sex, represents the most evolved sex role category. The present study thus serves to investigate the nonverbal behaviour of individuals of different sex roles to determine if nonverbal manifestations of the perceived status of the other (male-female, professor-student) have evolved along with changes in societal attitudes toward sex role. This will provide an indication of the strength of the barriers against change.

As previously mentioned, findings in the literature on personal space have indicated that individuals generally maintain greater distance from males versus females and from higher status versus same status individuals. The present study offers the opportunity for replication of these findings using two alternate methods of personal space measurement. The questions asked are as follows:

Are males afforded greater personal space than females?

On the basis of previous findings, particularly with regard to the differences in perceived status of males and females, it is predicted that males are afforded greater personal space than females.

Are higher status individuals afforded greater personal space than same status individuals?

On the basis of previous findings, it is predicted that higher status individuals are afforded greater personal space than same status individuals.

Personal space, as was seen in the section on personal space and development, has been extensively studied from a developmental point of view, and if one views sex role as a developmental process, as have Rebecca et al., the usefulness of investigating personal space in terms of sex role development is appreciated. Though differences in personal space between the sexes have been explained in terms of differential sex roles of males and females involving the greater aggressiveness of males and the greater passivity and lower status of females, with the implication that these differences are a necessary result of biological differences between the sexes, sex role development has been viewed by various researchers (Rebecca et al., 1976; Spence & Helmreich, 1978) as not constrained by biological factors. This suggests that differences in personal space even between same sex individuals may be a result of differences in sex role characteristics. This argues as well for the appropriateness of sex role as an area of investigation with regard to personal space. Some empirical support for such differences has been found in a pilot study (see Chapter II) carried out by the writer and in previous research, and this investigation can thus be viewed as a means of testing the relevance of sex role characteristics as a predictor of personal space preferences. In terms of sex role development as outlined by Rebecca et al., the third question asked is thus:

Are there differences between sex-typed (Stage II) and non-sex-typed (Stage III) individuals in terms of personal space preferences?

Because of the four categories of sex role available from a contemporary interpretation of sex role and as an offshoot of the previous question, a fourth question is asked as follows:

Are there differences among individuals from the different sex role categories in terms of personal space preferences?

Stage II individuals (based on the Rebecca et al. model) have presumably accepted societal expectations regarding sex-appropriate behaviour and the differential status of the male and female. Stage III individuals have transcended societal expectations of sex-appropriate behaviour and do not ipso facto perceive males as higher in status than females. Nonverbally, Stage II individuals can thus be expected to perceive males as higher in status than females by physically approaching the latter more closely than the former in an interaction. Stage III individuals, perceiving the sexes as equal in status, unless otherwise informed, can be expected not to differ significantly in terms of personal space preferences between males and females. A comparison, then, between Stage II (sex-typed) and Stage III (androgynous) persons in terms of personal space preferences in interaction with others of both sexes should reveal differences in the way individuals at these two stages act particularly with respect to the relative perceived status of the sexes. Preliminary investigation (Tipton et al., 1975) has in fact supported differences between feminists and traditionals in approach behaviour toward males. If Stage II individuals allot greater space to males than females and Stage III individuals do not differentiate in terms of space between males and females, then it can be

said that, for Stage III individuals, sex-appropriate behaviour involving the perceived higher status of males over females does not exist and Rebecca et al.'s (1976) model may be viewed as valuable in predicting certain aspects of nonverbal behaviour. The fifth question asked is thus:

Are there differences between sex-typed (Stage II) and androgynous (Stage III) individuals in terms of personal space preferences when interacting with males versus females?

It is predicted that sex-typed individuals prefer greater personal space with males than with females unlike androgynous individuals who do not significantly differ in personal space preferences with males versus females.

Because of the four categories of sex role available from a contemporary interpretation of sex role and as an offshoot of the previous question, a sixth question is asked as follows:

Are there differences among individuals from the different sex role categories in terms of personal space preferences when interacting with males versus females?

In addition to a "status" or "sex-appropriate behaviour" interpretation to sex differences in personal space, studies have been carried out which have shown that a status and sex interaction occurs with respect to personal space. Generally these results have indicated that females of higher actual status have been perceived in personal space terms as lower in status relative to males of higher actual status (Giesen & Hendrick, 1977; Lott & Sommer, 1967). At a Stage II level (based on the Rebecca et al. model), it can be said that individuals perceive males as higher in status in keeping with sex-appropriate expectations and there is an incongruency in a female having a position of higher actual status than a male. Such a belief has been supported by findings from many investigations (Hagen & Kahn, 1975; Jacobson & Effertz, 1974; Johnson, 1976;

Megargee, 1969). As a result, the higher actual status of the female in a particular situation may be denied or at least diminished by the Stage II individuals. At a Stage III level, sex-appropriate expectations vanish, males and females are seen as equal in status and equally capable of attaining higher actual status. A comparison, then, between Stage II (sex-typed) and Stage III (androgynous) persons in terms of personal space preferences in interaction with others of both sexes and varying status levels may reveal differences in the way individuals at these two stages view the relative status of others with respect to both the sex of the other and the actual status of the other. A seventh question is thus:

Are there differences between sex-typed (Stage II) and androgynous (Stage III) individuals in terms of personal space preferences when interacting with males versus females of varying status? .

It is predicted that sex-typed individuals do not differentiate in terms of personal space with females of the same versus higher status as much as with males of the same versus higher status and that androgynous individuals respond to actual status regardless of the sex of the object person. Sex-typed individuals would thus tend, as shown by their personal space preferences, not to accept the higher actual status of the female.

Because of the four categories of sex role available from a contemporary interpretation of sex role and as an offshoot of the previous question, an eighth question is asked as follows:

Are there differences among individuals from the different sex role categories in terms of personal space preferences when interacting with males versus females of varying status levels?

Summary of Hypotheses

1. It is predicted that males are afforded greater personal space than females (Replication).
2. It is predicted that higher status object persons are afforded greater personal space than same status object persons (Replication).
3. There are differences between sex-typed and androgynous individuals in terms of personal space preferences.
There are also differences among the sex role categories of individuals in terms of personal space preferences.
4. It is predicted that sex-typed individuals prefer greater personal space with males than with females unlike androgynous individuals who do not significantly differ in personal space preferences with males versus females.
An interaction between sex role categories of individuals and sex of the object person in terms of personal space preferences is predicted as well.
5. It is predicted that sex-typed individuals ascribe less variation in actual status (in terms of differential personal space preferences) to females as opposed to males than androgynous individuals who respond to actual status regardless of the sex of the object person. Sex-typed individuals thus tend, as shown by their personal space preferences, not to accept the higher actual status of the female.

An interaction between sex role categories of individuals and sex and status of the object person in terms of personal space preferences is predicted as well.

CHAPTER II

PILOT STUDY

The present chapter describes the preliminary study, carried out during the summer of 1978, on the effects of sex role, sex, and status, on personal space preferences.

The purpose of this study was threefold. First, because of the essentially exploratory nature of the study of sex role in conjunction with personal space, some empirical support for the effect of sex role on personal space was desired prior to carrying out the main study. Second, because a large number of different methods have been used to investigate personal space (e.g. different schematic techniques, great variability in room size and procedures in behavioural methods) it was felt that a preliminary study would help iron out any procedural problems involving such factors as credibility of room to be used in the behavioural measure, wording of directions, order of administration of questionnaires and usefulness of the schematic measure as an alternative for the behavioural measure. Third, because the study required that subjects interact with individuals of varying status levels, it was important that the status levels used in the final study would be perceived by the subjects as different from each other. As a result, subjects in the preliminary study were asked to develop a subjective status hierarchy which could then be applied in the final study. This last procedure was similar to one used by Lott and Sommer (1967) in a study of status and personal space.

Data were analyzed by means of a four-way analysis of variance design with independent variables of sex of subject and sex of object person, sex role of

subject, and status of object person, and dependent variables derived from the schematic measure of personal space and the behavioural measure of personal space. Results indicated that one's sex role does affect one's personal space preferences in interaction with others of either sex and of varying status levels.

Method

Subjects

Subjects were English-speaking University of Ottawa summer students in Psychology and Education obtained on a volunteer basis. The total number of subjects for the schematic measure of personal space was 67, 17 males and 50 females. The total number of subjects for the behavioural measure of personal space was 38, 13 males and 25 females, all of whom had also participated in the schematic measure.

Apparatus, Instruments, and Experimental Rooms

In the preliminary study, two experimental rooms were used. One room consisted of a table and two chairs and was used to give the subject directions and information before entering and after returning from the experimental room. The experimental room, used for carrying out the behavioural measure of personal space, was 4.57 metres square and contained an oblong table and two chairs. A diagram of the room is shown in Figure 1. As can be seen, the door was in the centre of one of the walls and the table was placed against the wall opposite the door and slightly to the right of the door. A swivel armchair was placed in front of the table and facing the wall. A second chair was of plastic and

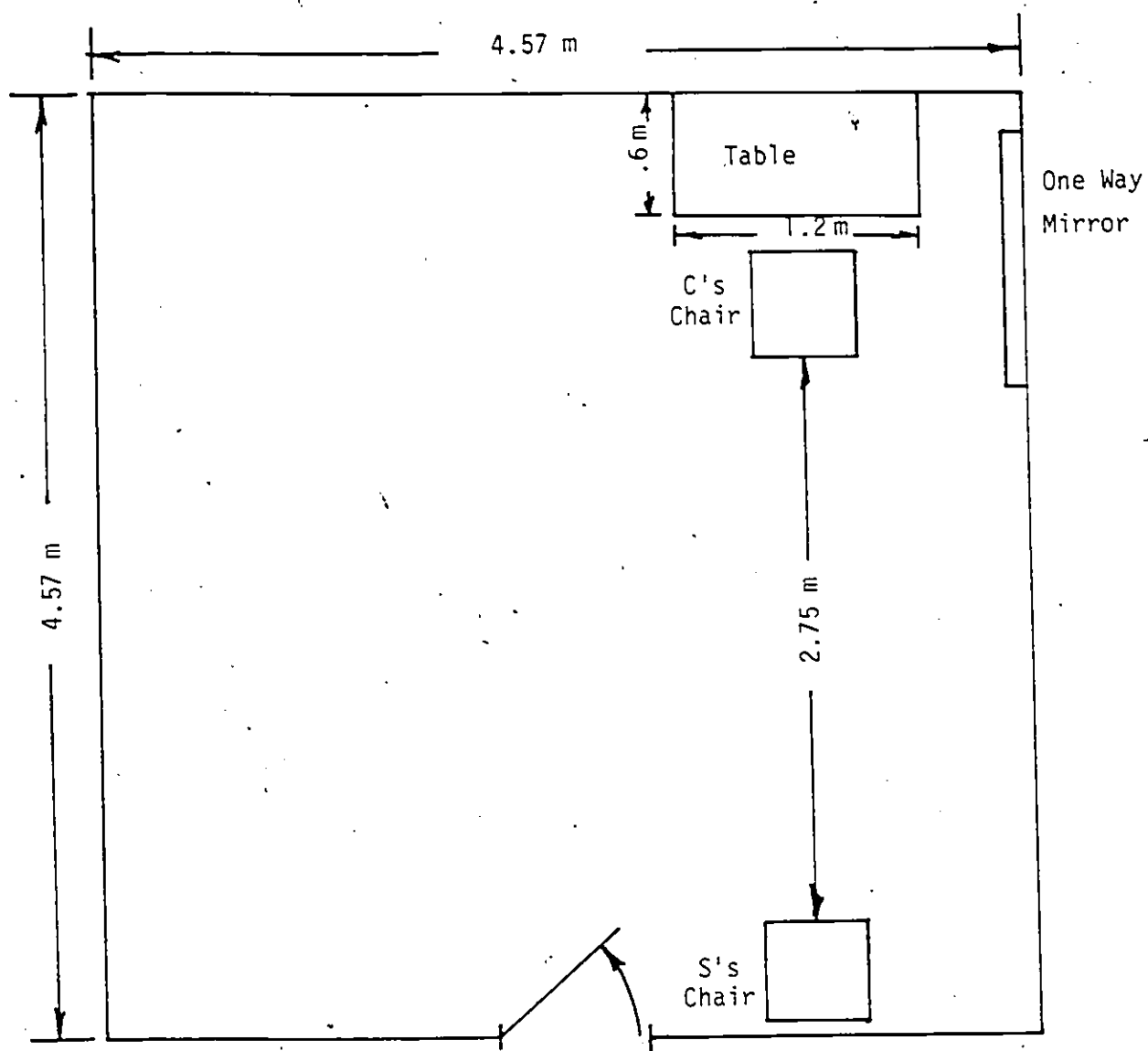


Figure 1. Experimental interview room used in pilot study.
(Scale: 1 metre = 3 centimetres).

metal construction and was placed to the right of and adjacent to the door and facing the opposite wall. A one-way mirror was situated on the far right wall of the room.

Four confederates were used in this study (2 males and 2 females) and provided the 4 sex, status combinations needed to test the hypotheses. Each confederate of each sex played only one role, that of a student (same status role) or professor (higher status role). Confederates were blind with respect to the hypotheses of the study. Prior to the actual experiment, confederates were provided with a list of instructions which can be found in Appendix 1-B, Part 1, and subsequently participated in a 1½ hour training session in which role playing of the interview situation and practice in taking measurements of distance, relative position, and predominant body lean were provided.

The instruments used in the study consisted of a status hierarchy, a schematic personal space measure (items of which were presented in three different forms representing three different random orders) adapted from the Comfortable Interpersonal Distance Scale developed by Duke and Nowicki (1972), and the Bem Sex Role Inventory (Bem, 1974). These three instruments were administered as a package. A post-experiment questionnaire was administered to obtain subjects' reactions to the study. Copies of the questionnaire package and post-experiment questionnaire can be found in Appendix 1-A, Part 2 and Appendix 1-B, Part 3 respectively.

Bem Sex Role Inventory. The Bem Sex Role Inventory consists of separate scales of Masculinity and Femininity and a set of neutral items described as a Social Desirability Index. Each scale consists of 20 adjectives representing personality characteristics. Subjects respond by indicating on a 7-point

scale ranging from "never or almost never true" to "always or almost always true" the degree to which each personality characteristic applies to them. Each subject is subsequently classified into one of the following four sex role categories by means of a median split procedure: masculine (high Masculinity, low Femininity), feminine (low Masculinity, high Femininity), androgynous (high Masculinity, high Femininity), undifferentiated (low Masculinity, low Femininity).

Investigation of the internal consistency and test-retest reliability of the Bem Sex Role Inventory, carried out by Bem (1974) at a four week interval, yielded coefficient scores in the .70-.86 range for the former and product-moment correlation scores in the .89-.93 range for the latter.

The Bem Sex Role Inventory was chosen for the present study because it could be readily incorporated into Rebecca et al.'s model of sex role transcendence with respect to sex-typed (or Stage II) versus androgynous (or Stage III) individuals and because it has been used more extensively than other contemporary tests in behaviour validation research involving the investigation of sex-stereotyped behaviour and because results of this research have been encouraging.

In view of the accepted definition of sex role as discussed in the previous chapter (pp. 16-17), the Bem Sex Role Inventory, used in this study to obtain measures of sex role, must actually be seen as a contemporary test of Masculinity-Femininity rather than a sex role inventory. However, for convenience and because of the research carried out by Bem and her associates, which has uncovered relationships between M-F categories on the Bem Sex Role

Inventory and actual sex role behaviour, the masculine, feminine, androgynous, and undifferentiated categories obtained on the Bem Sex Role Inventory will from here on be referred to as sex role categories.³

Schematic measure of personal space. The schematic measure of personal space was adapted from the Comfortable Interpersonal Distance Scale which had been developed by Duke and Nowicki (1972). In the Comfortable Interpersonal Distance Scale, a drawing representing an imaginary round room, consisting of 8, 80 millimetre, randomly numbered lines emanating from a common centre, is presented to the subject. Subjects are required to imagine themselves at the centre point and imagine a particular person approaching along a particular line. They are then required to indicate, by making a mark anywhere along the line, where they would like the stimulus person to stop. The distance between subject and stimulus person is then measured and serves as the score. This is followed by other situations in which particular persons are imagined approaching along other lines. The first two situations used in the Comfortable Interpersonal Distance Scale are anchor items used to encourage differentiation of close and far distances prior to the administration of the actual experimental conditions. In addition to the directions presented here, other instructional sets have been used (Duke, Note 4).

Though the Comfortable Interpersonal Distance Scale appears to be a useful instrument in the study of personal space, a number of adaptations were considered appropriate for the present study. First, in order to minimize possible confounding effects which may have resulted from having different

³ A more detailed discussion of the Bem Sex Role Inventory can be found in Appendix 1-C, Part 1.

situations presented on one page, it was felt that a separate page for each situation would be more appropriate. As a result, since only one situation per page was being presented, only one line per page was required. Though a number of different instructional sets have been used in the research carried out on the Comfortable Interpersonal Distance Scale, and though the scale readily lends itself to adaptation in instructional set, the conditions required by the present study, that of a subject approaching an already stationary person, has not, to the writer's knowledge, been applied to the scale. As a result, a second adaptation, one involving a change in instructional set, was made for purposes of the present study.⁴

Procedure

The experimenter went into class and requested that subjects fill out the questionnaire package. Subjects were told that the purpose of the study was to investigate the relationship between personal space, status, and personality differences. Volunteers were also requested to be involved in a brief interview at a later date for the second part of the study (see Appendix 1-A, Part 1) for a copy of the introduction used in class). The questionnaire package was then administered in class (Appendix 1-A, Part 2) and those subjects who were interested, subsequently wrote their name and telephone number on an appropriate spot on a schedule sheet which had been passed around. Subjects were subsequently contacted by telephone to confirm their appointments.

⁴ A sample of the schematic measure of personal space used in this study can be found in Appendix 1-A, Part 2, Section 2 and further discussion of the Comfortable Interpersonal Distance Scale from which the schematic measure of personal space was derived can be found in Appendix 1-C, Part 2.

For the second part of the study, which consisted of the behavioural measure of personal space, subjects came individually to a waiting room at 20 minute intervals where they were greeted by the experimenter and escorted to the first room. Here, the subject was given the following directions:

A committee of university professors has been formed to investigate the status of the summer course program at the University of Ottawa. The present study proposes to provide input to this committee regarding how students feel about the courses they are taking and in what ways these courses may be improved for next year.

Situation A: In the room across the hall is Professor _____ . He/She is chairman of the program committee and has carried out much research in the area of program assessment over the past number of years. He/She will be jotting down some of your ideas today. Please be assured that any information regarding your ideas, feelings, and attitudes will remain confidential. Follow me and I'll show you the room where Professor _____ is waiting for you.

Situation B: In the room across the hall is _____ , a summer student, who has agreed to jot down some ideas for the committee. Please be assured that any information regarding your ideas, feelings, and attitudes will remain confidential. Follow me and I'll show you the room where _____ is waiting for you.

The subject was then escorted to the experimental room and directions continued as follows:

Please knock and go in.

Inside the experimental room, the confederate was seated on a swivel armchair at a table against the far wall. The confederate turned to face the subject upon entering and, glancing at the chair adjacent to the door, stated:

Pull up a chair.

Once the subject was seated, the confederate introduced himself/herself as follows:

Situation A: Hello, I'm Professor _____ . I'm the chairman of the Summer Course Program Committee and am interested in your impressions about the summer programs at the University of Ottawa.

Situation B: Hello, I'm _____ , a summer student at the University of Ottawa, and I've agreed to take notes on your impressions for the Summer Course Program Committee.

The issue of evaluating the summer course program was chosen because it was felt to be relevant to summer students, was an area summer students were bound to have opinions about and thus would not lead subjects to feel unduly intimidated, and would tend to result in a fairly neutral interview so that other variables which might affect personal space preferences would be operating only minimally. Based on the findings of the subjective status hierarchy, status levels of "summer student" and "professor" were chosen to represent same and higher status conditions in the interviews. In order to maximize the ease with which the confederates could carry out their tasks, regardless of condition, confederates used their own names. The directions "pull up a chair" were given because it was felt that this would lead to greater variability in distance than such directions as "take a seat" or "sit down" ..

After the interview, the subject returned to the first room and was administered orally the post-experiment questionnaire (Appendix 1-B, Part 3) to obtain information about reactions to the interview situation and the interviewer. Essentially this questionnaire served as a check on the manipulation of the status variable and provided information regarding the face validity of the procedures used. The subject was then debriefed and thanked. -

Experimental Design

Though it would have been preferable to categorize subjects according to sex role categories before their interviews were arranged to ensure adequate representation in each cell, because of time restrictions and difficulties in scheduling, this was not possible. As a result, subjects were grouped randomly across confederates within the confines of subject and confederate schedules. Care was taken for each confederate to see approximately the same number of subjects and similar proportions of each sex.

Subjects were classified according to sex role by means of the median split procedure weighted for sex suggested by Bem, 1977 (Note 5). The median Masculinity and Femininity scale scores generated by the present subjects were used to classify subjects into appropriate categories. This procedure yielded four levels of sex role: masculine, feminine, androgynous, and undifferentiated. Other independent variables were sex of subject, sex of interviewer, and status of interviewer. This resulted in 4x2x2x2 analysis of variance design consisting of four levels of sex role (previously mentioned), two levels each of sex of subject and sex of interviewer (male, female), and two levels of status of interviewer (same, higher), and three dependent variables (distance, relative position, and body lean) for the behavioural measure of personal space. A separate analysis of variance was carried out on each of the three dependent measures.

The dependent variable of distance was obtained by measuring the distance between the centre fronts of the subject's and confederate's chair. Relative position was obtained by computing the difference between the respective sides of the subject's and confederate's chairs. Appendix 1-B, Part 1 reviews, in more detail, the measurement procedures for the distance and relative position measures.

A one-way analysis of variance was carried out to investigate the effect of age of subject on the three dependent behavioural measures. Investigation of the effect of age on the perceived status of the interviewer was carried out.

The schematic measure of personal space yielded a 4x2x2x2 analysis of variance design with sex role and sex of subject, and sex and status of interviewer as independent variables and with repeated measures on sex and status of interviewer. The one dependent variable was distance.

Further, in keeping with the exploratory nature of the pilot study, analyses of the main dependent measures on both the behavioural and schematic measures were carried out omitting various combinations of variables.

Finally, Pearson correlation coefficients were calculated to compare the various aspects of the behavioural measure with the schematic measure of personal space in order to obtain an indication of the validity of the latter measure.

Classification of subjects into sex role categories, the behavioural measure analyses, Pearson correlation coefficients, and crosstabulations were carried out by means of the procedures described in the second edition of Statistical Package for the Social Sciences (SPSS) (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975), and the schematic measure analyses, by means of the BALANOVA procedure contained in the SOUPAC system (SOUPAC, 1973), the latter procedure appropriate for designs involving repeated measures.

An alpha of .05 was chosen as significant for purposes of the analyses carried out in the present study.

Results

Results of the pilot study are divided into four main sections as follows: the subjective status hierarchy, validation of the procedure, the hypotheses, and comparisons between behavioural and schematic measures.

The Subjective Status Hierarchy

With regard to the development of a subjective status hierarchy, 60% of subjects perceived their status as equivalent to student or special student and only 10% of subjects viewed their status as equivalent to that of a professor. Other categories cited by subjects (post-graduate student, clerical staff, lecturer, professionals) were much less frequently responded to as status equivalents and 16% did not provide a status equivalent at all (see Table 2 for response frequencies and percentages for each category). With regard to those individuals perceived by students as highest in status, dean, president, head (for example, university head or faculty head), and professor were most frequently cited.

Classification of Subjects into Sex Role Categories

The median Masculinity and Femininity Scale scores for the present subjects were 4.85 and 4.95 respectively. Those subjects obtaining scores > 4.85 and < 4.95 on the M and F scales respectively were classified as masculine; those obtaining scores < 4.85 and > 4.95 were classified as feminine; those obtaining scores > 4.85 and > 4.95 were classified as androgynous; those obtaining scores < 4.85 and < 4.95 were classified as undifferentiated.

Table 2

Perceived Status Equivalents of Subjects

Perceived Status Equivalent	Frequency	Percentage
Student or Special Student	40	59.7
Post-Graduate Student	1	1.5
Clerical Staff	2	3.0
Professor	7	10.4
Lecturer	1	1.5
Professional	2	3.0
Mixed	3	4.5
Blank	11	16.4
Total	67	100.0

Validation of Procedure

For the behavioural measure, though there were about twice as many female as male subjects, subjects were fairly equally distributed across sex role categories, sex of interviewer and status of interviewer. Table 3 presents a breakdown of subjects by sex and sex role for the behavioural measure.

Experimenter classification of differential relative position and body lean were consistent with classifications made by confederates.

Analysis of variance on the three dependent variables of the behavioural measure (distance, relative position, body lean) with respect to age of the subject revealed no significant effects. Inspection of the data, however, did reveal that there was a tendency for older subjects to perceive interviewers as the same in status even in the higher status condition. The raw data are presented in Table 4.

With regard to awareness of the true purpose of the interview, when subjects were unaware of the purpose of the behavioural measure (68% were unaware) there appeared to be a tendency to accept the manipulated status conditions more readily. The raw data are presented in Table 5.

There was also an issue concerning the face validity of the experimental room used in the behavioural measure. Some subjects commented on its large size and bareness which made them suspicious that, in fact, the room and the situation was a set-up for the study of factors which had not been mentioned though they were not always sure what those factors were.

With regard to the schematic measure, subjects were distributed fairly evenly across sex role. Table 6 presents a frequency breakdown of subjects by sex and sex role category for the schematic measure.

Table 3

Classification of Subjects by Sex Role Category and Sex
for the Behavioural Measure of Personal Space
(N = 38)

Sex of Subject	Sex Role Category			
	Masculine	Feminine	Androdynous	Undifferentiated
Male	3	2	3	5
Female	7	7	7	4
Total	10	9	10	9

Table 4

The Effect of Age on Acceptance or Rejection
of Status Manipulation
(N = 38)

Status Condition	Age			
	≤ 25		> 25	
	Frequency	%	Frequency	%
Higher Status Condition				
Acceptance	5	62.5	4	33.3
Rejection	3	37.5	8	66.7
Same Status Condition				
Acceptance	4	56.7	10	83.3
Rejection	2	33.3	2	16.7

Note. Rejection of higher status condition indicates that confederate is perceived as same status; rejection of same status indicates confederate is perceived as higher status.

Table 5

The Effect of Awareness of True Purpose of Interview on
Acceptance or Rejection of Status Manipulation
(N = 38)

Status Condition	Awareness			
	Aware		Unaware	
	Frequency	%	Frequency	%
Higher Status Condition				
Acceptance	1	14.5	10	66.7
Rejection	6	85.7	5	33.3
Same Status Condition				
Acceptance	5	100.0	8	72.7
Rejection	0	0.0	3	27.3

Note. Rejection of higher status condition indicates that confederate is perceived as same status; rejection of same status indicates confederate is perceived as higher status.

Table 6

Classification of Subjects by Sex Role and Sex
for the Schematic Measure of Personal Space
(N = 67)

Sex of Subject	Sex Role of Subject			
	Masculine	Feminine	Androgynous	Undifferentiated
Male	4	3	4	6
Female	10	14	15	11
Total	14	17	19	17

A one-tailed t -test of the significance of the difference between the means of item "close" and item "far" on the schematic measure of personal space yielded significant results in the expected direction ($t = -9.08$, $p < .001$) indicating that subjects consistently chose significantly greater distance for the "far" item compared to the "close" item thus indicating that subjects differentiated close and far physically as well as "psychologically" and providing a rationale for the use of such a measure of personal space.

Hypotheses

Results of the four-way analysis of variance (sex role and sex of subject, sex and status of interviewer) with respect to distance on the behavioural measure are presented in Table 7 and with respect to distance on the schematic measure are presented in Table 8.

Hypothesis 1. Hypothesis 1 predicted that males would be afforded greater personal space than females. No significant findings were noted on the behavioural measure. On the schematic measure, however, a significant effect was found for sex of object ($F = 19.66$, $p < .001$), significantly greater distances being maintained from male versus female object persons.

Hypothesis 2. Hypothesis 2 predicted that higher status object persons would be afforded greater personal space than same status object persons. On the behavioural measure, a significant effect was noted for status of interviewer ($F = 9.09$, $p < .05$) but in a reverse direction of what had been predicted. On the schematic measure, however, a significant effect was noted for status of object ($F = 22.26$, $p < .001$) in the direction of expectation.

A significant interaction effect, represented graphically in Figure 2, was noted for sex and status of interviewer ($F = 6.92$, $p < .05$) on the

Table 7

Analysis of Variance: Effects of Sex Role and Sex of Subject, and
Sex and Status of Interviewer on Distance Between
Two Chairs in an Interview
(N = 38)

Source	SS	df	MS	F-Ratio
Main Effects				
Sex of Subject	93.29	1	93.29	.05
Sex Role of Subject	17893.75	3	5964.58	3.03
Sex of Interviewer	1581.32	1	1581.32	.80
Status of Interviewer	17917.29	1	17917.29	9.09*
2-Way Interactions				
Sex of Subject x Sex Role of Subject	12852.78	3	4284.26	2.17
Sex of Subject x Sex of Interviewer	237.70	1	237.70	.12
Sex of Subject x Status of Interviewer	2053.10	1	2053.10	1.04
Sex Role of Subject x Sex of Interviewer	26832.80	3	8944.27	4.54*
Sex Role of Subject x Status of Interviewer	5921.25	3	1973.75	1.00
Sex of Interviewer x Status of Interviewer	13654.51	1	13654.51	6.92*
3-Way Interactions				
Sex of Subject x Sex Role of Subject x Sex of Interviewer	755.23	2	377.62	.19
Sex of Subject x Sex Role of Subject x Status of Interviewer	455.88	1	455.88	.23
Sex of Subject x Sex of Interviewer x Status of Interviewer	3399.91	1	3399.91	1.72
Sex Role of Subject x Sex of Interviewer x Status of Interviewer	27003.09	2	13501.54	6.85**
Error	25636.88	13	1972.07	

* $p < .05$ ** $p < .01$

Table 8

Analysis of Variance: Effects of Sex Role and Sex of Subject and
Sex and Status of Object Person on Distance with Repeated
Measures on Sex and Status of Object Person
(Schematic Measure of Personal Space)
(N = 67)

Source	SS	df	MS	F-Ratio
Sex of Subject	4.80	1	4.80	.01
Sex Role of Subject	4183.18	3	1394.39	2.20
Sex of Subject x Sex Role of Subject	2450.10	3	816.70	1.29
Error	37394.10	59	633.80	
Sex of Object	1463.02	1	1463.02	19.66*
Sex of Object x Sex of Subject	184.41	1	184.41	2.48
Sex of Object x Sex Role of Subject	129.44	3	43.15	.58
Sex of Object x Sex of Subject x Sex Role of Subject	63.29	3	21.10	.28
Error	4391.31	59	74.43	
Status of Object	2735.21	1	2735.21	22.26*
Status of Object x Sex of Subject	72.14	1	72.14	.59
Status of Object x Sex Role of Subject	388.12	3	129.37	1.05
Status of Object x Sex of Subject x Sex Role of Subject	66.05	3	22.02	.18
Error	7249.79	59	122.88	
Sex of Object x Status of Object	1.14	1	1.14	.02
Sex of Object x Status of Object x Sex of Subject	4.63	1	4.63	.10
Sex of Object x Status of Object x Sex Role of Subject	348.00	3	116.00	2.49
Error	2744.46	59	46.52	

* $p < .001$

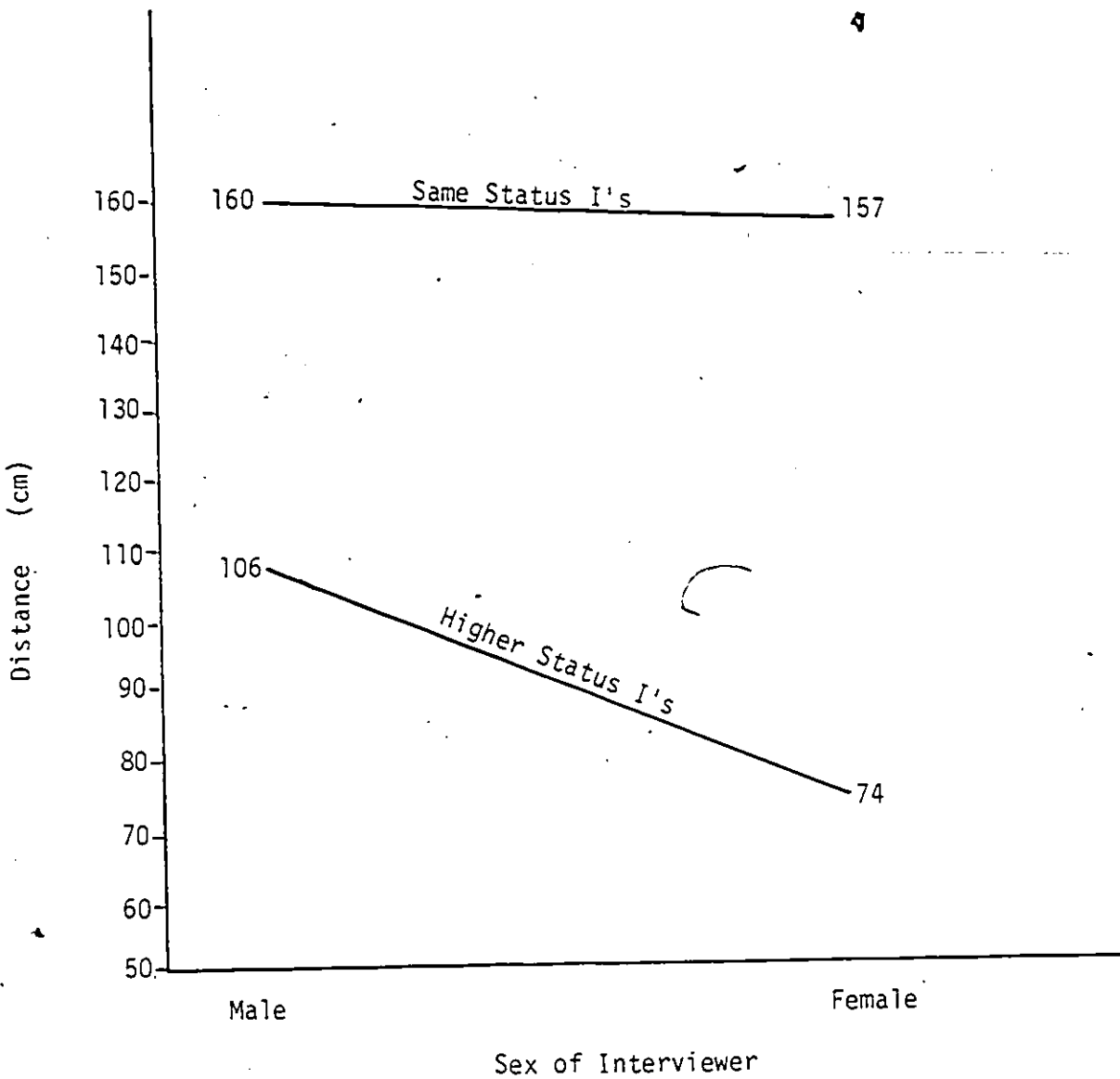


Figure 2. Mean distance for each condition of the sex of interviewer x status of interviewer interaction effect (N = 38).

behavioural measure only. Subjects maintained approximately the same distance from same status interviewers regardless of sex and tended to approach the female higher status interviewer more closely than the male higher status interviewer.

Hypothesis 3. Hypothesis 3 predicted differences among sex role categories and more specifically between sex-typed and androgynous individuals in personal space preferences. On the behavioural measure, the main effect of sex role of subject approached significance ($F = 3.03, p < .07$), inspection of the data indicating that masculine and androgynous subjects tended to maintain smaller distances than feminine and undifferentiated subjects. On the schematic measure, though the main effect of sex role of subject was not significant ($F = 2.20, p > .05$), a trend in favour of greater distances for undifferentiated and smaller distances for androgynous persons was uncovered, a finding similar to that obtained on the behavioural measure.

On the behavioural measure, omitting male subjects from the analysis because of their small numbers and omitting masculine and undifferentiated sex role levels from the analysis in order to test out Rebecca et al.'s (1976) model by comparing Stage II (sex-typed and feminine in this case) versus Stage III (androgynous) individuals, led to the uncovering of a significant effect for sex role of subject ($F = (1,13) = 7.10, p < .025$). Feminine subjects were found to prefer significantly larger distance than androgynous subjects.

Hypothesis 4. Hypothesis 4 predicted a sex role of subject x sex of interviewer interaction effect. This was confirmed for the behavioural measure only ($F = 4.54, p < .05$) and is represented graphically in Figure 3. Inspection of the data indicate that feminine subjects appeared to maintain much greater distances from males versus females unlike subjects of other sex

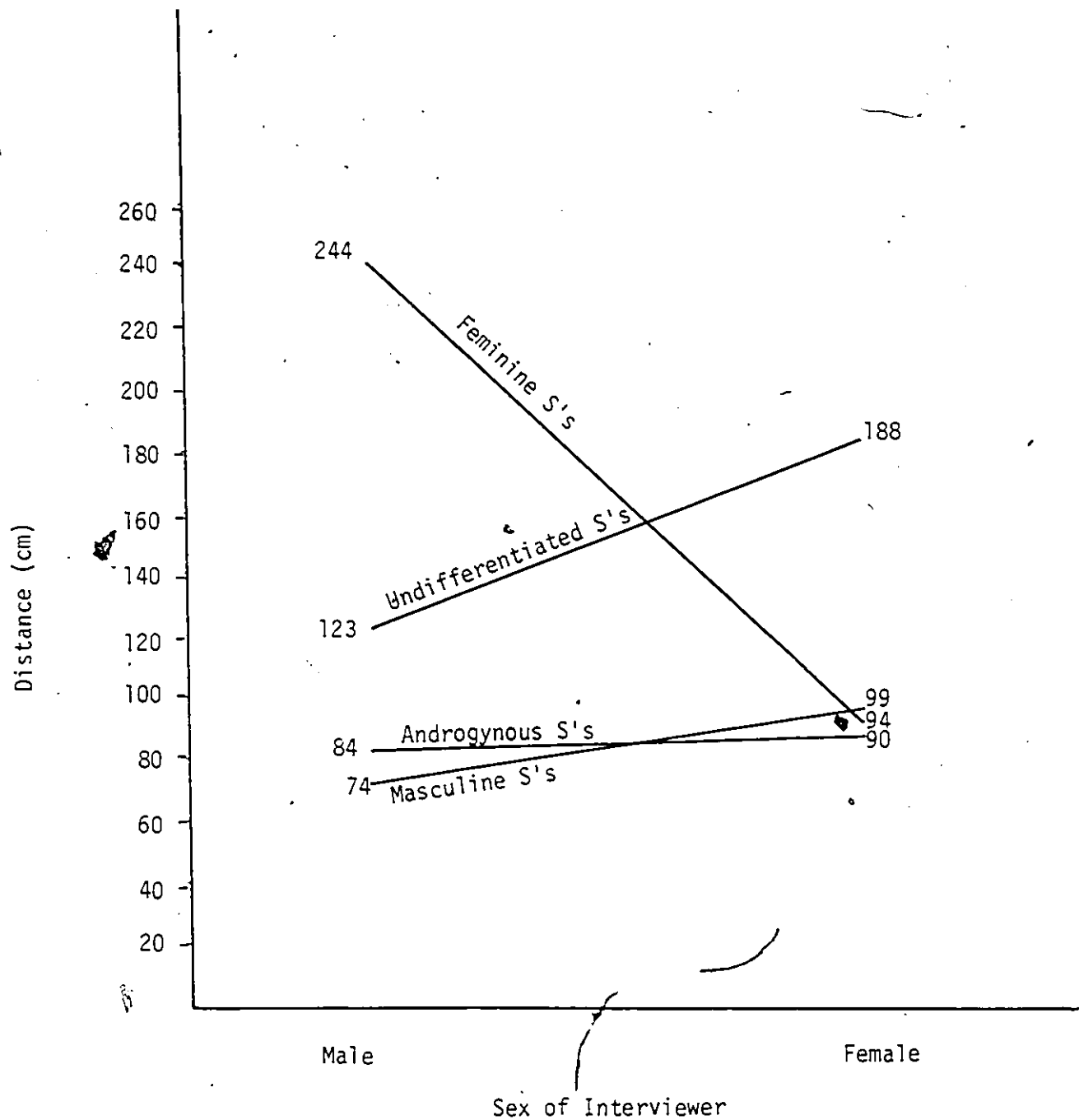


Figure 3. Mean distance for each condition of the sex role of subject x sex of interviewer interaction effect (N = 38).

role categories who either did not appear to distinguish too much between the sexes in terms of distance or preferred somewhat greater distances with females.

Hypothesis 5. Hypothesis 5 predicted a sex role of subject x sex of interviewer x status of interviewer interaction effect. This was confirmed for the behavioural measure ($F = 6.85, p < .01$) and is represented graphically in Figure 4, though the validity of results is questionable given the number of subjects per cell. On the schematic measure, the sex role of subject x sex of interviewer x status of interviewer interaction effect approached significance ($F = 2.49, p < .07$) and is represented graphically in Figure 5. Inspection of the data for the schematic measure revealed that undifferentiated persons differentiated more between same status females and all other sex/status combinations preferring proportionately much less distance with the female same status object person.

When data were analyzed omitting various independent variables or levels of independent variables from the analysis, generally no new findings were uncovered for either the behavioural or schematic measure. Because of the small number of subjects in these instances no interaction effects were investigated. In addition, no significant results, with regard to relative position of subjects or body lean of subjects based on the behavioural measure, were noted for any of the independent variables.

Comparison Between Behavioural and Schematic Measures

Comparisons between the behavioural and schematic personal space measures by means of Pearson correlation coefficients revealed that generally little

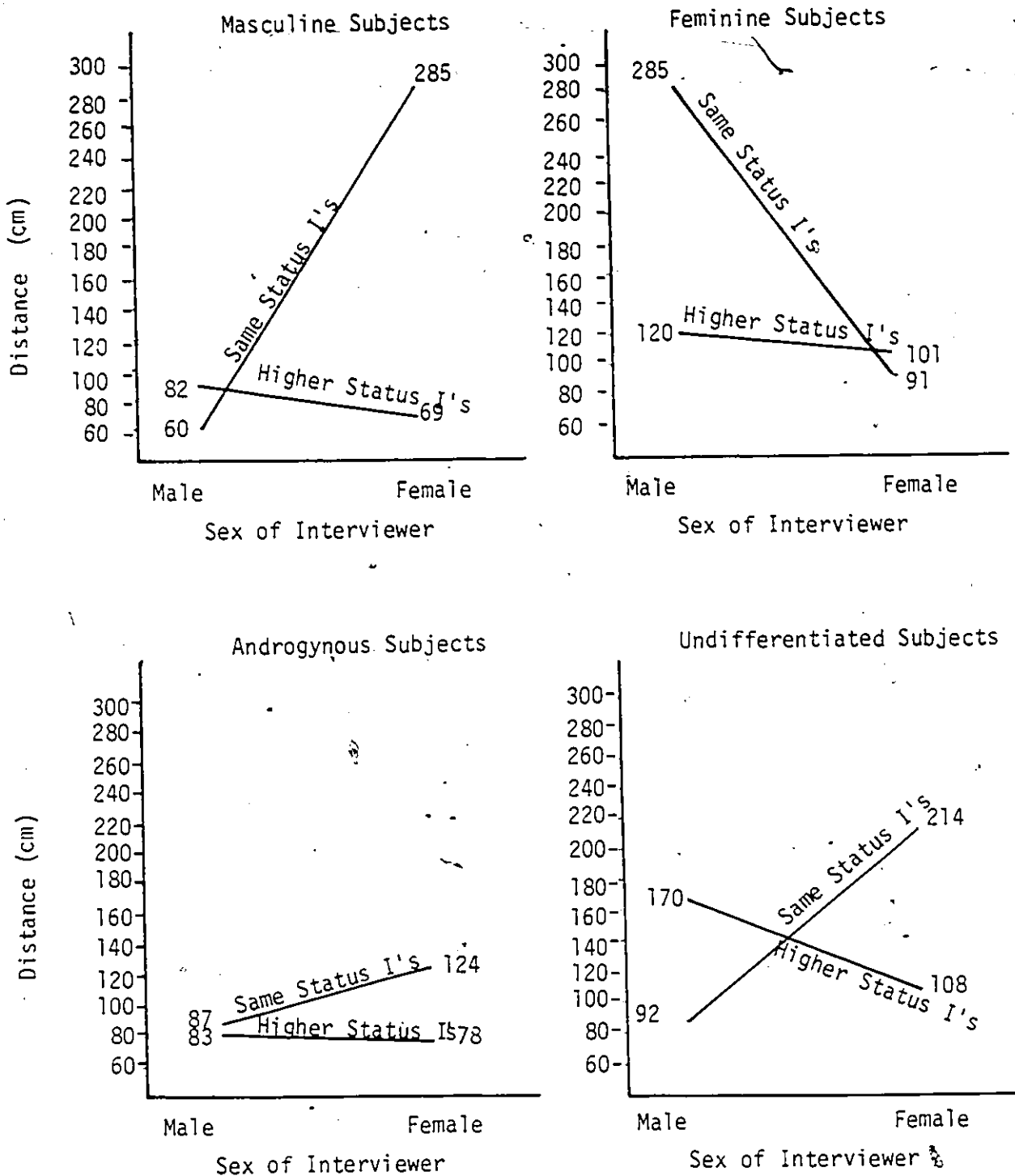


Figure 4. Mean distance for each condition of the sex role of subject x sex of interviewer x status of interviewer interaction effect (N = 38).

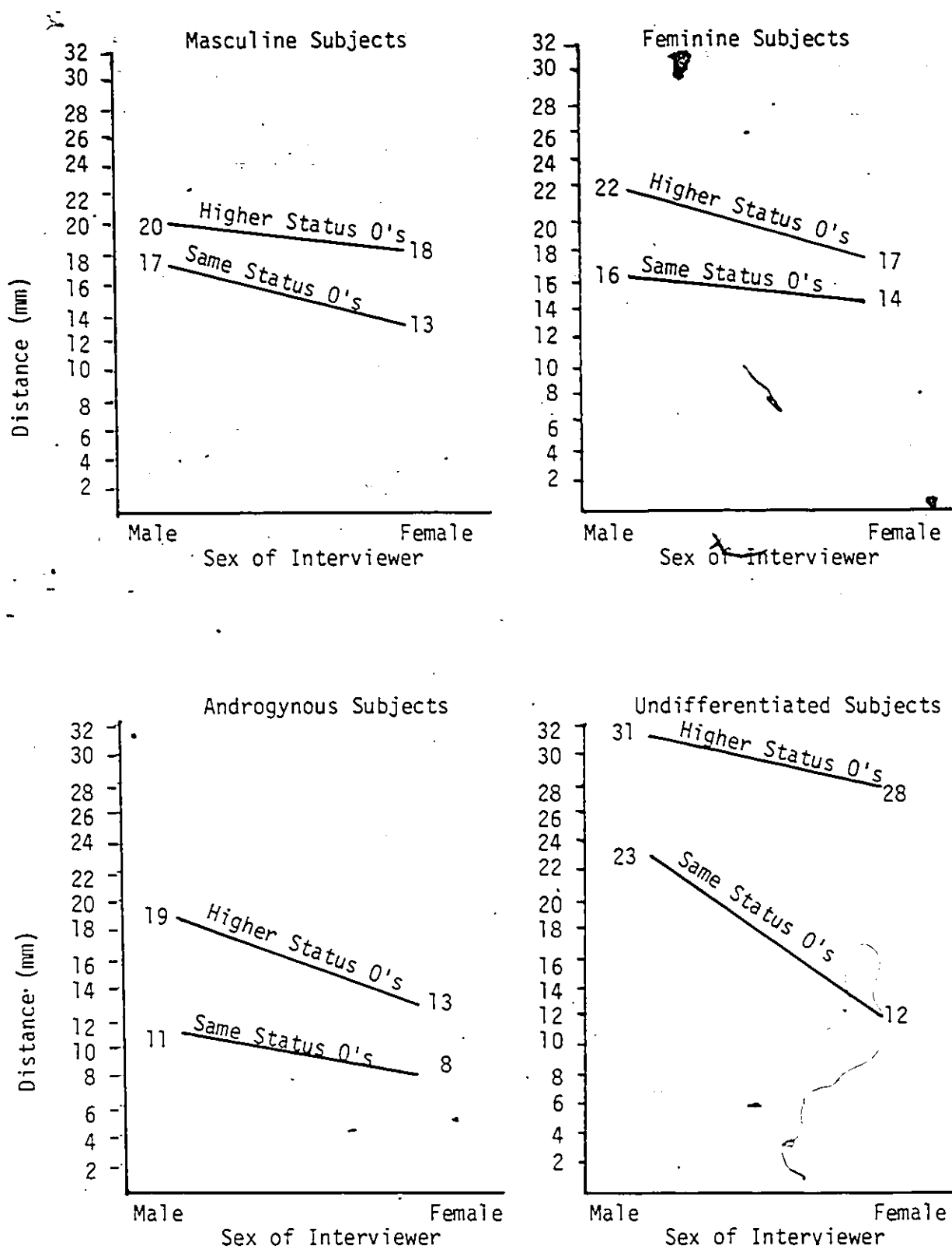


Figure 5. Mean distance for each condition of the sex role of subject x sex of object x status of object interaction effect (N = 67).

relationship existed between the two measures. The only correlation to reach significance was the relationship between the behavioural distance measure and the schematic measure of the same status, female interviewer condition ($r = .74, p < .05$).

Discussion of Results

On the subjective status hierarchy, subjects ascribed relatively higher status to professor, head, or dean than to student and the majority of subjects viewed themselves at the status level of student. On the basis of these findings, it appears appropriate to use the categories of student and professor for the two levels of the status variable in the main study.

In the behavioural measure, because sex role was found to be related to personal space (feminine and undifferentiated individuals have larger distance preferences than masculine and androgynous individuals, feminine females have larger distance preferences than androgynous females), this variable appears to be a promising one to study with respect to personal space. Further, feminine individuals were found to prefer much greater distance from males than females, unlike individuals with masculine, androgynous or undifferentiated characteristics. Though the number of subjects used was small, this interaction appears to fit Rebecca et al.'s model of sex role transcendence which views sex roles as differentiated (and males as higher in status) at Stage II and sex role as nonexistent (and males and females as equal in status) at Stage III. These results together with no significant sex of subject effect on the behavioural measure or the schematic measure argue for the inclusion of sex role as a factor influencing personal space and suggest that one's Masculinity-Femininity may be a more important indicator of personal space preferences than one's gender in the situations investigated.

For the dependent behavioural measures of body lean and relative position, no significant findings were revealed. The inexactness of the relative positive measure and the inclusion of directionality of angling in the analysis were considered to be factors contributing to the latter finding. As a result, the procedure for determining relative position was thus streamlined and included in the main study (see Appendix 2-B, Part 1). The body lean measure was included in the main study without changes because of the main study's much larger number of subjects.

Results for the behavioural distance measure and the schematic measure differed with regard to sex role of subject, sex of interviewer, and status of interviewer, and generally, correlation coefficients between the two measures were low. For the schematic measure, unlike the behavioural measure, the only effect in which sex role approached significance was a three-way interaction, though sex and status of interviewer as main effects were significant in the direction found in the literature on personal space (males and higher status interviewers were accorded greater distances). For the behavioural measure, the effect of sex of interviewer was nonsignificant and the effect of status was significant but in the reverse direction of what was expected (higher status interviewers were allotted smaller distances than same status interviewers). Though it may be argued that, because of its "in vivo" nature, the behavioural measure represents a more accurate picture of what happens in the population, the small number of subjects used for the behavioural measure and the replication of previous findings on sex and status for the schematic measure prevent any conclusion in this direction. As a result, both measures are included in the main study which is based on a much larger number of subjects.

Because subjects were more willing to accept the devised situation (interview) and the indicated status of the interviewer as real when they were unaware of the true purpose of the interview, and to avoid any confounding effects of one measure on another that might occur if subjects were aware that the two exercises were related, it was desirable for the main study to be set up so that no connection would be made between the schematic measure and the behavioural measure (interview). As a result, for the main study, it was decided to administer the two measures separately and as unrelated experiments carried out by different investigators. Further, in the light of some criticism of the experimental room used in the pilot study, a room providing greater face validity was sought for the main study.

The pilot study has thus served to establish the most appropriate procedure for the main study in addition to confirming the relevance of sex role in the study of personal space.

CHAPTER III

METHOD

The main study, like the pilot study, sought to investigate the effect of sex role of subject on personal space preferences. The main study was thus similar to the pilot study in terms of the majority of independent variables studied and measures used. Some changes were made however. A brief overview of these changes follows.

Fewer time restrictions existed for the main study because of the greater availability of the subject pool. This led to greater control over the number of subjects in each sex role category and a substantial reduction of subject awareness of the true purpose of the interview. The larger number of subjects in the main study led to better representation of subjects in each of the conditions studied. Another major change involved the omission of the sex of subject variable, in order to reduce the total number of variables studied and as a result of the nonsignificant effect of this variable in the pilot study. Other changes involved the behavioural measure in which the office used was set up to have a greater face validity and in which each confederate played both student and professor role to minimize the confounding effects of individual differences.

Subjects

As a result of the indicated importance of the sex of "the other" relative to the sex of the subject in the personal space literature

(Barrios et al., 1976; Crowe, 1975; De Julio & Duffy, 1977; McBride et al., 1965; Petri et al., 1974), and because of the large number of variables that would otherwise result, it was decided to use only female subjects in the present study.

Subjects were made available from nine English-speaking University of Ottawa introductory courses in Psychology, Sociology, and English, comprising a total of 584 females. The Bem Sex Role Inventory was administered to 371 subjects resulting in a group of 240 subjects who participated in the behavioural measure of personal space of which 119 participated in the schematic measure of personal space.

For the behavioural measure, English-speaking subjects comprised 95% of the total group of 240 subjects. Most of the remaining 5% were those who felt more comfortable in French, but all subjects spoke and understood English. Subjects, both married and single, ranged in age from 16 to 52, the overall mean age being 22. Eighty-three percent of the subjects fell in the age range 17 to 25. First year university students comprised 75% of the total subject group, second year university students 15% of the group, and third year students, 6% of the group. The remaining 4% had either spent greater time in university or were special students. Native Canadians comprised 84% of the subjects. Of the 16% not born in Canada, 87% had been living in Canada for at least three years.

Apparatus, Instruments, and Experimental Rooms

Two experimental rooms were used. One room consisted of a table and two chairs and was used to give the subject directions and information before entering and after returning from the experimental room. The experimental room, which was used for carrying out the behavioural

measure of personal space, was 4.23 metres x 2.57 metres. In the pilot study, a room 4.57 metres square had been utilized which was bare except for a table and two chairs. Because some subjects commented on the oddness of this room in terms of its large size and bareness, particularly in the professor condition, it was decided that a room resembling an office in use would appear more convincing. Because much variability in the size of rooms used in personal space studies has been found (Barrios et al., 1976; Dosey & Meisels, 1969; Grossman, 1977; Meisels & Dosey, 1971; Pedersen, 1973; Tipton et al., 1975; White, 1975; Williams, 1971), it was decided that a standard office that would allow for variability in distance preferences across subjects and still contain a number of items seen as essential in an office would be appropriate. As well, to provide for greater variability in distance preference, a rectangular as opposed to a square room of equal area, was chosen. A floor plan of the room and its contents can be found in Figure 6. As can be seen, the door to the room was at one end of one of the long walls and a window was situated at the far corner of the short wall on the right as one enters. The room contained a table facing the window, a fabric swivel armchair with chrome legs facing the table, and a wood frame leatherette armchair situated on the short wall adjacent to the door and facing the swivel chair. Other items included in the room, to increase the face validity of the study, were shelves with books, a clock, a telephone, a floor lamp and a plant. These items were arranged to look natural yet still offer much freedom of choice in terms of seating preference for subjects.

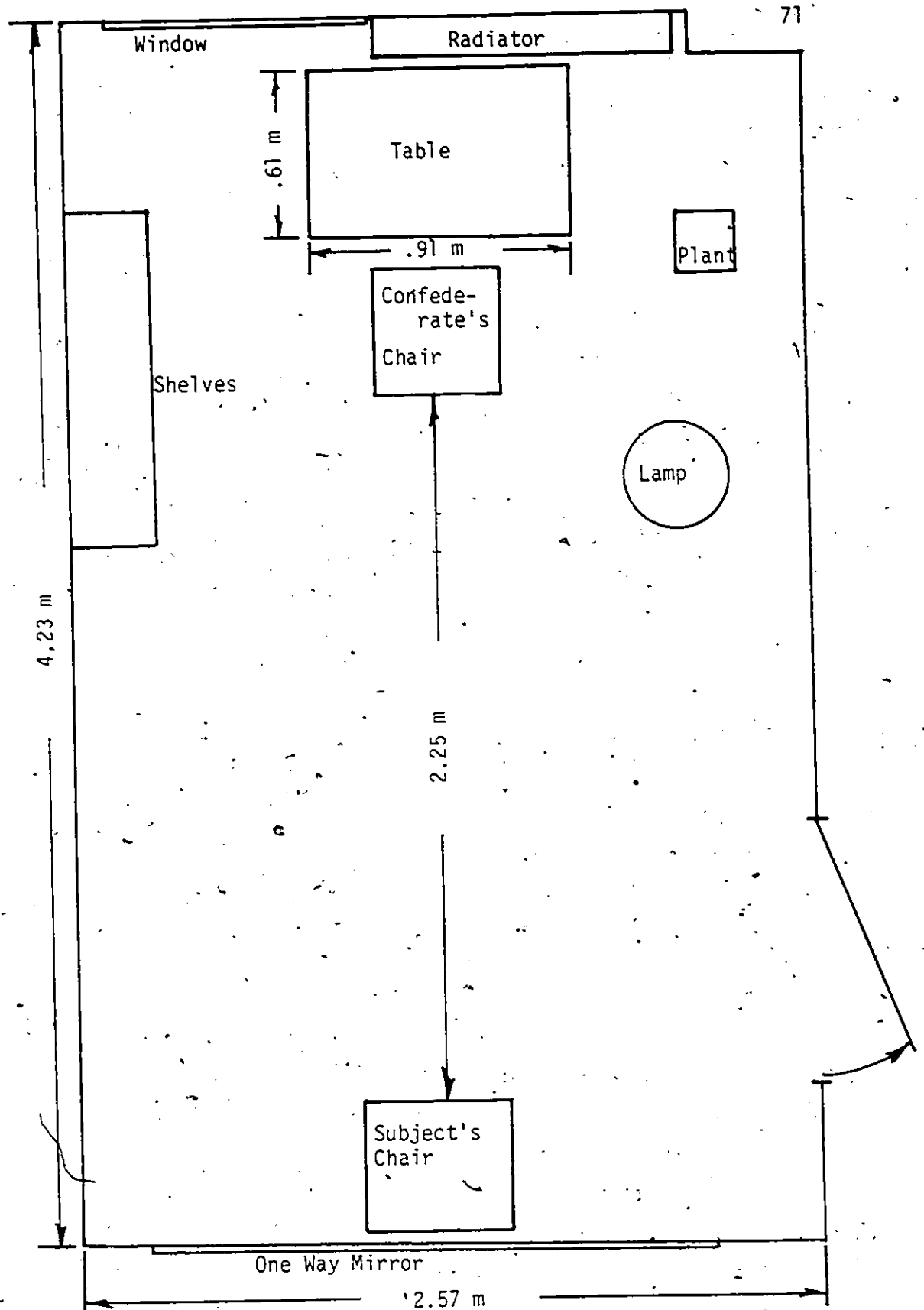


Figure 6. Experimental interview room used in main study.
 (Scale: 1 metre = 5 centimetres).

Six confederates were used in the study (3 males and 3 females). Though each confederate played only one role in the pilot study, it was felt that any effects that might have occurred across status levels might have been because of person rather than status. To avoid this possibility in the final study, it was decided that each confederate would play both higher status and same status roles. As a result, confederates were chosen on the basis of whether they could reasonably fit both roles. Further, in order to maximize the face validity of the interview situation in view of differences in age, manner and/or physical appearance among the confederates, and to allow for findings to be generalizable beyond just one higher status condition, it was decided to ascribe different high status roles to different confederates. As a result, each confederate was assigned the role of "undergraduate student" in the student condition and one confederate of each sex was assigned the role of "Professor in the Department of Psychology", "Professor and Head of the Department of Counselling Psychology", or "Professor and Vice-Dean of the Faculty of Social Sciences", in keeping with the results of the subjective status hierarchy obtained in the pilot study and the findings of Lott and Sommer (1967).

Prior to the actual experiment, confederates were provided with a list of instructions which can be found in Appendix 2-B, Part 1, and subsequently participated in a 1½ hour training session in which roleplaying of the interview situation and practice in taking measurements of distance, relative position and predominant body lean were provided.

The psychological test instruments used in the study consisted of the Bem Sex Role Inventory (Bem, 1974) and a schematic measure of personal space adapted from the Comfortable Interpersonal Distance Scale developed by Duke and Nowicki (1972). A post-experiment questionnaire, to assess the subjects' reaction to the behavioural measure, was administered as well.

The adapted Comfortable Interpersonal Distance Scale had been included in the pilot study in order to investigate its validity by means of comparison to the behavioural measure of personal space and though the relationship between the two measures was found to be low, the number of subjects studied was small and indications of significant results did occur on this measure. As a result, it was decided to include the schematic measure in the final study as well.

Both the Bem Sex Role Inventory and the schematic measure of personal space have been described in the pilot study (Chapter II) and further information can be found in Appendix 1-C, Part 1 and Part 2. Copies of the Bem Sex Role Inventory and the schematic measure of personal space can be found in Appendix 2-A, Part 2 and Appendix 2-C, Part 2 respectively. A copy of the post-experiment questionnaire is found in Appendix 3-B, Part 3.

Post-experiment questionnaire. The post-experiment questionnaire was administered to obtain an indication of subject reactions to the behavioural measure of personal space in order to obtain an indication of the face validity of the experimental set-up. In order to determine if subjects viewed the interview situation as an unthreatening experience, questions about feelings of comfort-discomfort and relaxation-anxiety were asked. The questionnaire also sought to obtain indications of the

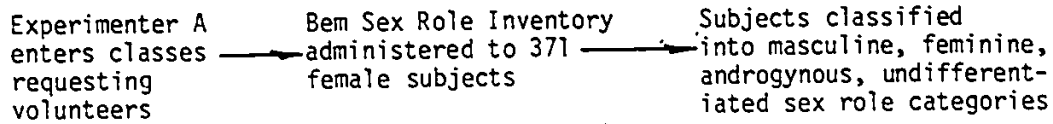
perceived status of the interviewer and changes in the perceived status of the interviewer during the course of the interview. These questions essentially served as checks on the manipulation of the status variable.

Procedure

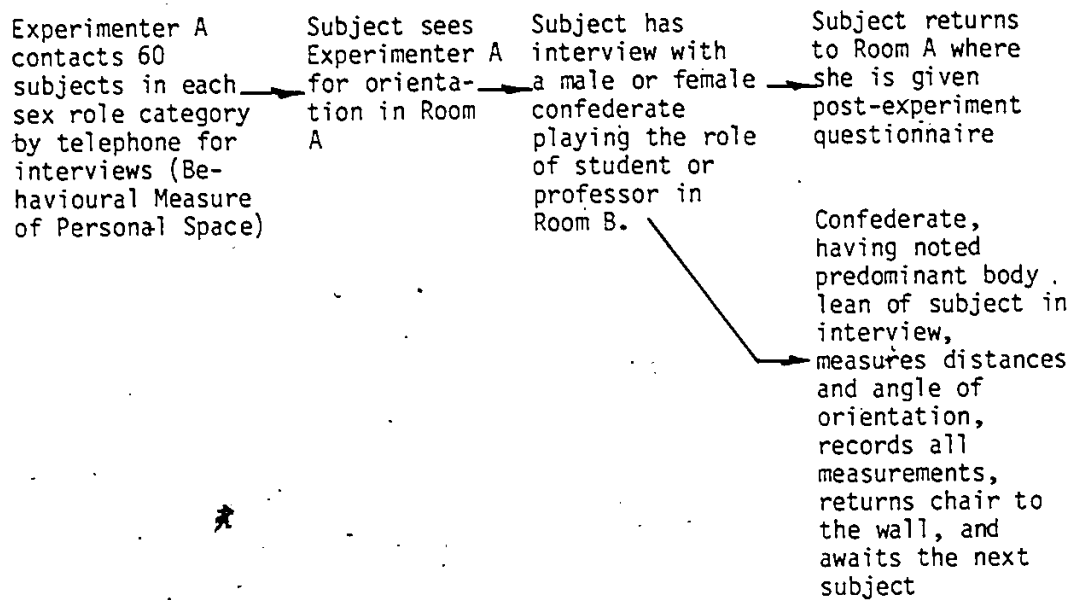
In the pilot study, subjects were administered the Bem Sex Role Inventory and the schematic measure of personal space on the same occasion in class and this was followed by participation in an interview at a later date on an individual basis. This procedure may have led to greater than necessary awareness of the true purpose of the interview and could have been avoided by a different order of presentation of the various parts of the study. Because of time limitations on the pilot study, this could not be done. In the main study, however, a procedure was used which was intended to minimize awareness of the true purpose of the interview. Essentially the study was divided into three main phases carried out sequentially as follows: Bem Sex Role Inventory group administration, individual interview (behavioural measure of personal space), schematic measure of personal space group administration. This was followed by a fourth and final phase which involved debriefing. See Figure 7 for a flow chart of the procedure.

Phase 1. Experimenter A went into the various classes requesting volunteers. The instructions given to the subjects can be found in Appendix 2-A, Part 1. Essentially the subjects were told that the purpose of the study was to investigate the relationship between personality characteristics and attitudes toward counselling programs in high school students, and that there were two parts to the study, the first part

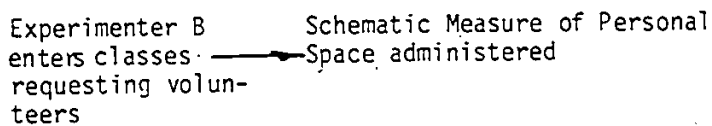
Phase 1



Phase 2



Phase 3



Phase 4

Experimentor A returns to classes to debrief and provide a resumé of study

Figure 7. Flow Chart of procedure.

involving the completion of a personality questionnaire that could be done right in class and the second part involving a personal interview about attitudes toward counselling programs in high schools. The Bem Sex Role Inventory was then administered. A total of 371 students were given the test, because, given the relative percentages of individuals that generally fall into the four categories of sex role according to Bem (1977), it was felt that this would generate the 60 subjects needed in each category in order to carry out the analysis. Subjects were subsequently classified into sex role categories on the basis of the medians generated by both the present subjects and those of Bem for females (Bem, Note 6) by means of the procedures outlined in Bem (1977, Note 5).

Phase 2. Once the sex role category of each individual was established, subjects were contacted by telephone to set up personal interviews. Subjects came individually to a waiting room at 15 minute intervals and were greeted by Experimenter A and escorted into the first room. There the subject was given the following instructions:

A research group of university professors and students has been formed at the University of Ottawa to investigate the effectiveness of counselling programs in secondary schools.

The present study is concerned with investigating the relationship between personality characteristics of students and the type of secondary school counselling programs they would prefer. Basically I am attempting to find out what approaches are most effective with what type of students.

You will be participating in a 5 minute interview today to discuss your views on your secondary school counselling program (how your counselling services,

guidance counsellors, assisted you in choosing a college curriculum, a potential career and with personal problems) and what emphases and facilities you see as most important (e.g. personal versus vocational counselling, therapy versus information providing) in a high school counselling program.

Situation A: In the room down the hall is Professor Anne/Allen Taylor. She/He is:

- 1) a Professor in the Department of Psychology
- 2) Head of the Department of Counselling Psychology
- or 3) Vice-Dean of the Faculty of Social Sciences

here at the University of Ottawa and is heading the present research team. She/He has carried out extensive research in the area of counselling psychology particularly with regard to secondary schools over the past number of years. She/He will be jotting down some of your ideas today. Please be assured that any information regarding your ideas, feelings, and attitudes will remain confidential. After your interview, please return to this room for further instructions.

Situation B: In the room down the hall is Anne/Allen Taylor an undergraduate student who has agreed to jot down some of your ideas for the research team. Please be assured than any information regarding your ideas, feelings, and attitudes will remain confidential. After your interview, please return to this room for further instructions.

The subject was then escorted to the experimental room and directions continued as follows:

Please knock and go on in.

Inside the experimental room the confederate was seated on a swivel chair at a table situated at the far wall. The confederate turned to face the subject as she entered, made brief eye contact, gestured toward the chair and stated in as neutral a manner as possible:

Pull up a chair.

Once the subject was seated, the confederate introduced himself/herself as follows:

Situation A: Hello, I'm Professor Allen/Anne Taylor. I'm a Professor in the Department of Psychology (or the Head of the Department of Counselling Psychology, or the Vice-Dean of the Faculty of Social Sciences) here at the University of Ottawa and am heading the present research team which is investigating the effectiveness of counselling programs in high schools. I'm interested in your impressions about your high school counselling program and in any suggestions you might have about what approaches or facilities you see as potentially worthwhile in such an environment.

Situation B: Hello, I'm Allen/Anne Taylor, an undergraduate student at the University of Ottawa and I've agreed to take notes on your impressions about your high school counselling program and suggestions you might have about what approaches or facilities you see as potentially worthwhile in such an environment.

The issue of evaluating high school counselling programs was chosen because of its face validity in that it was felt to be relevant to undergraduate students still in the throes of choosing a career, because most students would have had at least some recent contact with their counsellors (and those that did not would know people who did), because it was felt to be an area undergraduate students were bound to have opinions about, and thus would not lead subjects to feel unduly intimidated, and because it would tend to result in a fairly neutral interview so that other variables which might affect personal space preferences would be operating only minimally. Seated as opposed to standing distance was used because it was felt to have greater face validity in this situation, it was easier to measure and because Wittig & Skolnick (1978) had found more significant effects in the seated condition in an actual comparison of seated and standing conditions in an interview situation. Confederates all used the same name, unlike in the pilot study where real names were used, because it was felt that this would minimize individual differences, in turn resulting in the maximization of the effect of the different status conditions.

After completion of the five minute interview, the subject returned to the first room and was given the post-experiment questionnaire (Part 3 of Appendix 2-B) part of which was filled out by the subject and part of which was administered orally.

Phase 3. The third part of the study involved the administration of the schematic measure of personal space. In the pilot study, this had been carried out in the first part of the study and led to a situation where a number of subjects were aware of the purpose of the behavioural measure of personal space. In order to avoid any confounding effect of one measure on another, it was decided that subjects would have to see this part of the study as totally unrelated to the other parts. This was accomplished by having Experimenter B go into the same classes previously seen by Experimenter A in the hope that the majority of the subjects who had participated in the behavioural measure would also participate in the schematic measure in order to provide a means of comparing the two measures. Experimenter B gave instructions that a study on personal space was being carried out and requested that the students fill out a questionnaire which involved choosing personal space preferences under varying conditions which, unknown to the subject, would parallel the conditions generated by the individual interview (the behavioural measure of personal space). Appendix 2-C contains a copy of the instructions, the complete schematic measure of personal space and a copy of the post-experiment question which was given to obtain subject reactions to the schematic measure and to the study as a whole. As can be seen in Appendix 2-C, Part 2, the first two items of the schematic measure consist of the anchor items "close" and "far". The experimental items of the schematic

measure were assigned in random order and three forms were produced by means of this procedure. For each condition, the distance between the slash made by the subject on line DA and the inner circumference of the circle surrounding A was subsequently measured with a metric ruler (see Appendix 2-C, Part 3 for an illustration of this procedure).

Phase 4. Subjects were debriefed subsequent to the completion of Phase III of the study. A summary of the study was prepared, a copy of which can be found in Appendix 2-D, and where possible, Experimenter A returned to the classes involved to hand out copies to students who participated in any one section of the overall research project, to discuss preliminary results, and to answer questions. Where this was not possible, teaching assistants were provided with copies of the summary which they subsequently were to distribute in class. The experimenter's telephone number was also provided in this summary in the event that further information was desired by subjects.

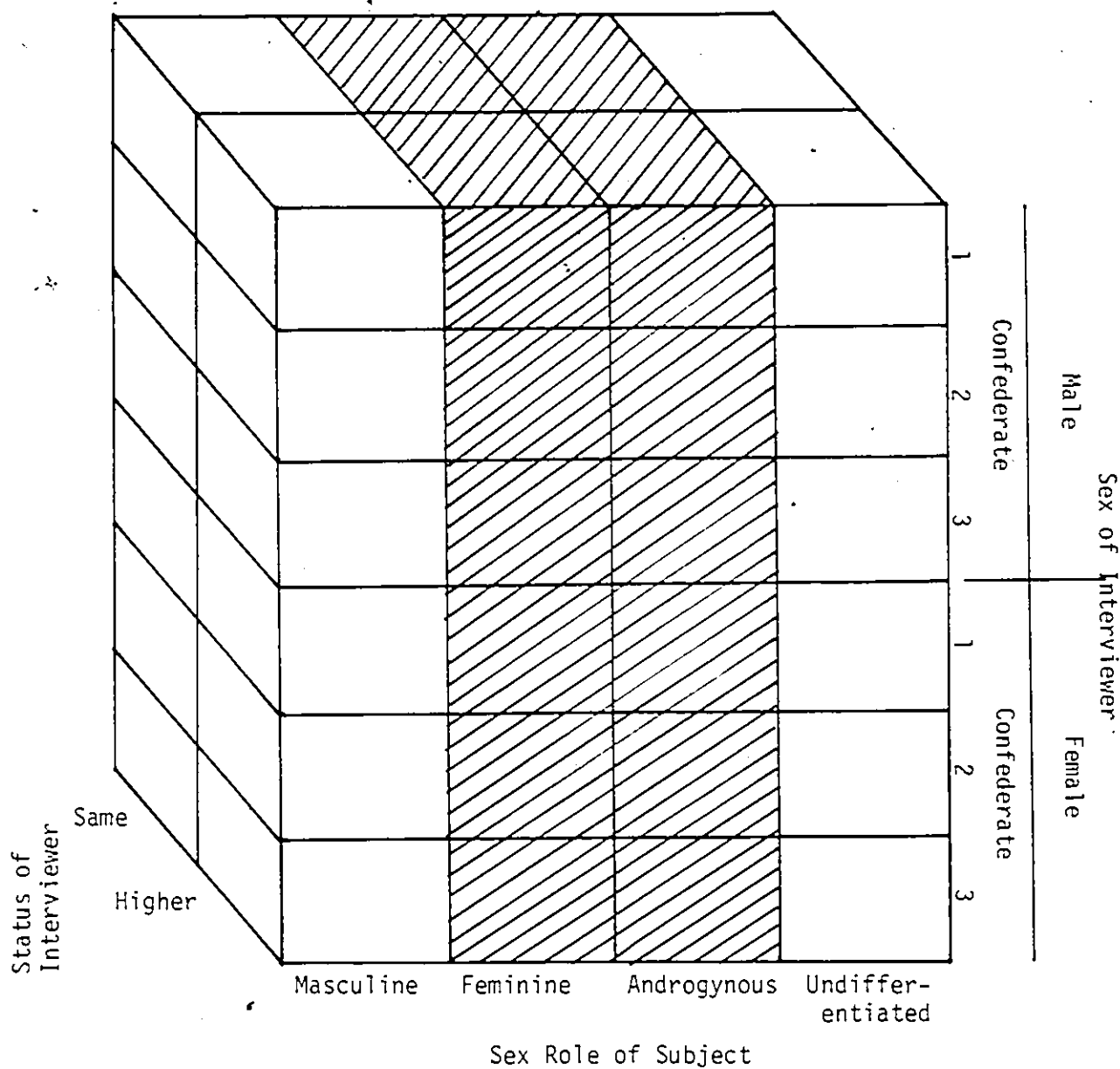
Experimental Design

The experimental design is divided into four phases each of which will be discussed in turn.

The first phase consisted of classifying individuals into categories based on their scores on the Bem Sex Role Inventory. This was carried out by the median split method suggested by Bem (1977, Note 5). Individuals were then classified as either masculine, feminine, androgynous or undifferentiated on the basis of both the median Masculinity and Femininity scores for the present 371 subjects and those medians generated by the 340 females studied by Bem at Stanford University in 1978 (Note 6). That

is, only those subjects who were classified as ascribing to the same category based on both sets of medians were considered eligible for participation in the study.

The second phase of the analysis consisted of the investigation of the effects of sex role of subject and sex and status of the interviewer on personal space preferences based on the behavioural measure of personal space (see Figure 8 for a schematic representation of the allocation of subjects into the various categories for this analysis). This analysis was carried out on the subgroup of 60 feminine and 60 androgynous subjects comprising the two stages respectively of sex role development according to Rebecca et al. The three confederates of each sex yielded a further factor, that of confederate, which was nested under sex of interviewer. In the higher status condition, Confederate 1 was a professor in the Department of Psychology, Confederate 2 was Head of the Department of Counselling Psychology, and Confederate 3 was Vice-Dean of the Faculty of Social Sciences. Equal numbers of subjects of each sex role category were assigned randomly to one of the sex, status of interviewer combinations and each confederate met with equal numbers of subjects of each sex role category in each status condition. This yielded a $2 \times 2 \times 2 \times 3$ analysis of variance design with equal numbers of subjects per cell and completely crossed for the two levels of sex role of subject (feminine and androgynous), two levels of sex of interviewer (male and female), and two levels of status of interviewer (same and higher) and with three levels of confederate nested under sex of interviewer. Four dependent variables were studied: distance, two measures of relative position (the difference



Note. Shaded area denotes the portion of the total number of cells used in the analysis carried out on feminine versus androgynous subjects ($N = 120$).

Figure 8. Schematic representation of experimental design for behavioural measure of personal space ($N = 240$).

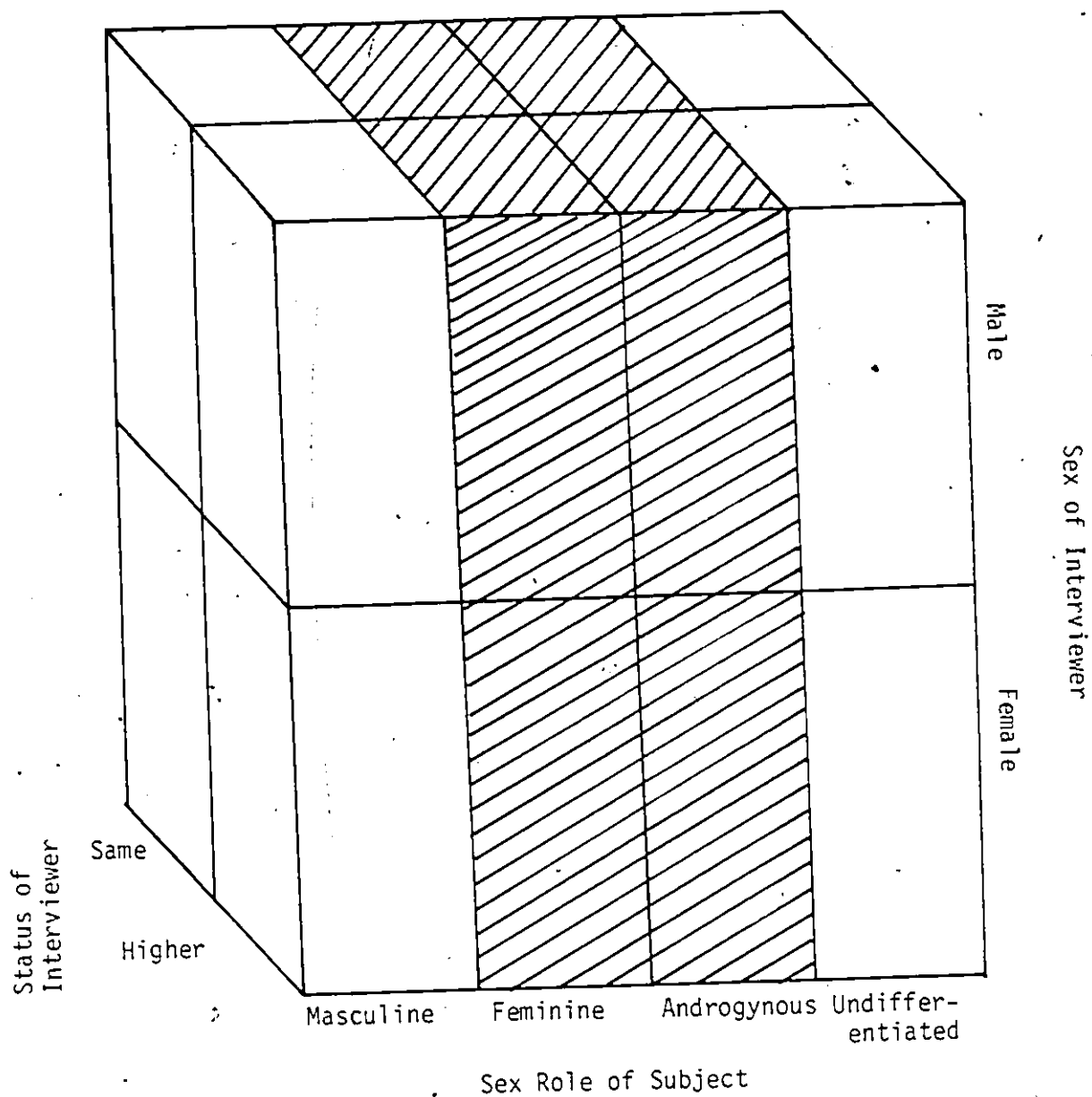
measure and the angle of orientation measure) and a measure of body lean. A separate analysis of variance was carried out for each of the four dependent measures.

The dependent measure of distance was obtained by measuring the distance between the centre fronts of the subject's and confederate's chairs. In order to obtain the difference measure, differences in distance between the respective sides of the subject's and confederate's chairs were calculated. The absolute value of the remainder was a measure of the angling of the chair of the subject relative to that of the confederate. In order to obtain the angle of orientation (a more precise measure), the two angle measures tabulated by the confederate were subtracted from 180°. The absolute value of the remainder was a measure of the amount of angling of the chair of the subject relative to that of the confederate. Relative position was thus analyzed ignoring the direction of angling relative to the confederate. This was unlike the procedure carried out in the pilot study where sign indicated direction of angling. The present procedure was felt to be more appropriate in that absolute angling rather than direction of angling was the experimenter's chief concern. Appendix 2-B, Part 1 further reviews the measurement procedures for the distance and relative position measures. A diagram explaining these procedures in more detail can be found in Appendix 2-E.

Separate analyses of variance were carried out on the dependent variables of perceived status, primarily to investigate the effectiveness of the manipulation of the status variable, and the dependent variables of comfort and anxiety, to investigate whether the interview was seen as relatively the same by all groups, and to ensure that extraneous factors conceivably related to the distancing mechanism were minimally operative.

The dependent variable concerned with the perceived change in status of the interviewer during the course of the interview, because it can be viewed as a discrete variable, was analyzed by means of a Chi square procedure.

The third phase of the analysis consisted of the investigation of the effects of sex role category of the subject, and sex and status of the interviewer on personal space preferences based on the schematic measure of personal space (see Figure 9 for a schematic representation of the allocation of subjects into the various categories for this analysis). Because the schematic measure of personal space was devised to parallel the behavioural measure, three different higher status levels were used (professor, head of a department, and vice-dean) to one same status level. In order to carry out the analysis with two levels of status (same and higher) as was done with the behavioural measure, scores for the higher status level were collapsed into one mean score for each sex condition. To ensure this procedure was appropriate, a preliminary procedure involving an investigation of the correlation between the three higher status scores for each sex was carried out by means of the Pearson correlation coefficient. Because correlations were found to be highly significant, the higher status scores were collapsed and the means of the three higher status scores for each sex were used in the analysis. This yielded a 3x2x2x2 analysis of variance design completely crossed for the three different forms of the schematic measure and the two levels of sex role of subject (feminine and androgynous), two levels of sex of interviewer (male and female), and two levels of status of interviewer (same and higher), with repeated measures on sex and status of interviewer. The one dependent measure was distance.



Note. Shaded area denotes the portion of the total number of cells used in the analysis carried out on feminine versus androgynous subjects ($N = 60$).

Figure 9. Schematic representation of experimental design for schematic measure of personal space ($N = 119$).

The total number of subjects for this analysis was 60 and consisted of those subjects who also participated in the behavioural measure. Even though it was impossible to control the numbers filling out the measure in a classroom situation, no gross departures from equal cell frequencies occurred.

The items "close" and "far" as previously noted, were included in the measure to provide anchoring points as suggested by Duke (Note 4). To determine if subjects were significantly differentiating "close" from "far" on the schematic measure, a one-tailed t-test was carried out.

For both the behavioural and schematic measure, significant main effects, where there were more than two levels of the factor, were further analyzed by the Newman-Keuls multiple comparison statistic. Significant two-way interaction effects were further analyzed by means of the test of simple main effects (Kirk, 1968). Three-way interactions were analyzed by direct inspection of relative mean scores for the different conditions.

Phases 2 and 3 were repeated using all four levels of sex role (masculine, feminine, androgynous, and undifferentiated) in the analyses. The total group of 240 subjects was used for the investigations carried out on the behavioural measure (see Figure 8 for a schematic representation of the allocation of subjects into the various categories for this analysis). For the schematic measure, the number of subjects was 119 and consisted of those subjects who also participated in the behavioural measure (see Figure 9 for a schematic representation of the allocation of subjects into the various categories for the analysis).

The fourth phase of the analysis consisted of a comparison of the behavioural measure with the schematic measure of personal space in order to obtain an indication of the validity of the latter measure. This was carried out by means of a comparison between the distance scores on the behavioural measure and the schematic measure of personal space across all conditions and within conditions. The Pearson correlation procedure was used.

Classification of subjects into sex role categories, Pearson correlation coefficients, and breakdown procedures were carried out by means of the SPSS system (Nie et al., 1975). Analysis of variance for both the behavioural and schematic measures of personal space was carried out by means of the BALANOVA procedure contained in the SOUPAC system (SOUPAC, 1973) and appropriate for hierarchical and repeated measures designs. The Newman-Keuls procedure was carried out by means of the INTSTAPAK system (Cooper & Pelletier, 1977).

An alpha level of .05 was chosen as significant for purposes of the analyses carried out in this study.

CHAPTER IV

RESULTS

The present chapter, which presents the results of the main study, is divided into five main sections as follows: classification of subject into the various sex role categories, validation of the procedure, hypotheses, other findings, and comparisons between behavioural and schematic measures.

Classification of Subjects into Sex Role Categories

From a group of 340 females studied at Stanford University in 1978, Bem (Note 6) obtained median Masculinity and Femininity scores of 4.80 and 5.10 respectively. From the present group of 371 females, median Masculinity and Femininity scores of 4.65 and 5.15 respectively were obtained. The median scores for these two groups are also presented in Table 9. Only those subjects who fell into the same sex role category on the basis of both sets of medians were chosen for participation in the study; that is, if a subject obtained a score equal to or greater than 4.80 on the Masculinity scale and less than 5.10 on the Femininity scale she was classified as masculine. Similarly, if the subject obtained a score of less than 4.65 on the Masculinity scale and equal to or greater than 5.15 on the Femininity scale, she was classified as feminine, if the subject obtained a score equal to or greater than 4.80 and equal to or greater than 5.15 on the Masculinity and Femininity scales respectively, she was classified as androgynous, and if the subject obtained a score of less than 4.65 and less than 5.10 on the Masculinity and Femininity scales respectively, she was classified as undifferentiated. These criteria are presented in Table 10.

Table 9

Median Masculinity and Femininity Scale Scores of
Stanford University Subjects and Present Subjects
on Bem Sex Role Inventory

Masculinity-Femininity Scales	Subjects	
	Stanford University Subjects (N = 340)	Present Subjects (N = 371)
Masculinity Scale	4.80	4.65
Femininity Scale	5.10	5.15

Table 10
 Critical Median Scores for Classification of Subjects
 into Sex Role Categories
 on Bem Sex Role Inventory

Femininity Scale	Masculinity Scale	
	< 4.65	≥ 4.80
< 5.10	Undifferentiated	Masculine
≥ 5.15	Feminine	Androgynous

This procedure was carried out because otherwise those subjects who, for example, were classified as masculine based on the norms developed by the present study could conceivably be classified as masculine, feminine, androgynous, or undifferentiated on the basis of Bem's norms. To illustrate, an individual who scored equal to or greater than 4.65 on the Masculinity scale and less than 5.15 on the Femininity scale would be classified as masculine on the basis of the norms developed by the present study and either masculine, feminine, androgynous, or undifferentiated on the basis of Bem's norms. In effect, the procedure of using two sets of norms to classify subjects led to the exclusion from the study of those individuals who scored equal to or greater than 4.65 and less than 4.80 on the Masculinity scale and equal to or greater than 5.10 and less than 5.15 on the Femininity scale. Table 11 presents the frequencies and percentages of subjects falling within the various sex role categories for Bem's group of Stanford University females, and the present group using Bem's norms and the norms developed by the present study, and the new integrated norms, the last of which were used in the present study.

Validation of Procedure

Behavioural measure of personal space. Preliminary analyses are concerned with whether subjects perceived the experimental condition as non-threatening and legitimate.

Following White (1975), two questions on the post-experiment questionnaire were asked to determine if subjects viewed the interview as a relatively neutral, non-threatening situation. After the interview, subjects had to indicate on a 7-point scale the extent to which they were comfortable or uncomfortable and at ease or anxious in the interview situation. For the

Table 11

Frequencies and Percentages of Subjects in Each Sex Role Category
Based on Subjects and Norms from Stanford University (1978)
Study and Present Study

Sex Role of Subject	Stanford University Subjects		Subjects					
			Stanford Norms		Present Norms		Integrated Norms	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Masculine	42	12.4	80	21.6	100	27.0	89	26.7
Feminine	134	39.4	120	32.3	92	24.8	92	27.6
Androgynous	103	30.3	86	23.2	97	26.1	77	23.1
Undifferentiated	61	17.9	85	22.9	82	22.1	75	22.5
Total	340		371		371		333	

subgroup of 60 androgynous and 60 feminine subjects, a mean score of 2.12 on the "comfortable-uncomfortable" scale (1 = maximum comfortable; 7 = maximum uncomfortable) with a standard deviation of 1.32, and a mean score of 2.15 on the "at ease - anxious" scale (1 = maximum at ease; 7 = maximum anxious) with a standard deviation of 1.24 were obtained. For the total group of 60 subjects in each of the four sex role categories, a mean score of 2.07 on the "comfortable-uncomfortable" scale with a standard deviation of 1.23 and a mean score of 2.13 on the "at ease - anxious" scale with a standard deviation of 1.22 were obtained. These findings indicated that subjects were both comfortable and at ease in the interview situation.

Analyses of variance carried out on the dependent variables of degree of comfort and degree of anxiety (results of these analyses can be found in Appendix 3, Tables A and B respectively for the subgroup and Tables C and D respectively, for the total group) with respect to the four independent variables (sex role of subject, sex and status of interviewer and confederate) revealed no significant main effects for the sex of the interviewer, for the status of the interviewer, or for confederate. One can thus probably assume that subjects responded in a similar manner in terms of ease and comfort to different conditions.

Significant main effects for sex role of subject on degree of comfort and degree of anxiety for the subgroup, and a significant main effect for sex role of subject on the degree of anxiety for the total group were found. Androgynous subjects were found to be significantly more comfortable than feminine subjects. Inspection of the means for the subgroup and a Newman-Keuls multiple comparison statistic for the total

group ($p < .05$) revealed that androgynous subjects were significantly more at ease than feminine subjects. For the subgroup only, a significant sex role x status interaction effect on the degree of anxiety was found. A test of simple main effects (results of this analysis can be found in Appendix 3, Table E.) revealed that, when interviewed by a higher status person, feminine females tended to be more anxious than androgynous females.

To evaluate the perceived legitimacy of the interview, subjects, after returning from the experimental room, were questioned orally on their ideas about any unstated purpose of the interview. Only eight of the 240 subjects studied made a comment about the initial distance of the chairs. Though a number of these individuals may have suspected that distance was one of the variables being investigated, because of the small number of subjects in this category and the degree of uncertainty that still remained for these subjects regarding the true nature of the experiment, it was seen as appropriate to include all subjects seen for interviews in the final analysis.

To further evaluate the legitimacy of the interview situation, it was necessary to investigate whether subjects accepted the status manipulation carried out by the experimenter, that is, to investigate whether subjects perceived the "professor" as higher in status than the "undergraduate student". This was investigated by means of a post-experiment question in which the subject had to indicate on a 7-point scale the status of the interviewer relative to herself. Mean scores of 4.48 for both subgroup and total group, and 5.53 and 5.54 for subgroup and total group respectively, were obtained respectively for the same status condition which involved

an interview with "an undergraduate student" and the higher status condition which involved an interview with "a professor" (1 = maximum lower status; 4 = equal status, 7 = maximum higher status). An analysis of variance of the perceived status of the interviewer, carried out with respect to the four independent variables of sex role of subject, sex and status of interviewer and confederate (see Table 12 for the mean and standard deviation for each level of each condition, and Table 13 for the results of the analysis of variance on perceived status for the subgroup; and Table 14 for the mean and standard deviation for each level of each condition, and Table 15 for the results of the analysis of variance for the total group) revealed similar results for the subgroup and the total group. Significant main effects for status of interviewer and sex of interviewer were found. Higher status interviewers were, in fact, perceived as significantly higher in status than same status interviewers, male interviewers as higher in status than female interviewers. Main effects of sex role of subject and confederate were found not to be significant.

Regarding interaction effects, the only significant effect on perceived status was found for the sex role of subject x sex of interviewer interaction for the total group only. Mean perceived status for each condition of the two-way interaction are presented in Figure 10. A test of simple main effects (see Table F in Appendix 3) revealed that both androgynous and feminine subjects perceived the status of the male interviewer as higher than that of the female interviewer. No other simple main effects were significant. In order to investigate the relative contribution of the Masculinity and Femininity scales to this two-way interaction effect, the data were reanalyzed by means of an analysis of variance on perceived status with Masculinity scale score and Femininity

Table 12

Mean Perceived Status and Standard Deviations
for Sex Role, Sex, Status, and Confederate
(N = 120)

Feminine Subjects

X 4.95^a
S.D. 1.05
N 60

Male Interviewers

X 5.23
S.D. 1.07
N 30

Female Interviewers

4.67
.96
30

Higher Status I's

X 5.07
S.D. .96
N 15

Same Status I's

4.27
.80
15

Higher Status I's

5.87
1.06
15

Same Status I's

4.60
.63
15

Confederate^b

	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#1</u>	<u>#2</u>	<u>#3</u>
X	4.40	4.60	4.80	5.80	5.40	6.40	4.40	4.20	4.20
S.D.	.55	.89	.45	.84	1.52	.55	.89	.45	1.10
N	5	5	5	5	5	5	5	5	5

Table 12

Mean Perceived Status and Standard Deviations
for Sex Role, Sex, Status, and Confederate
(N = 120)

		<u>Androgynous Subjects</u>			<u>Male Interviewers</u>			<u>Female Interviewers</u>																																																		
		<u>Same Status I's</u>	<u>Higher Status I's</u>	<u>Same Status I's</u>	<u>Higher Status I's</u>	<u>Same Status I's</u>	<u>Higher Status I's</u>	<u>Same Status I's</u>	<u>Higher Status I's</u>																																																	
\bar{X}			5.93		4.13		4.70		5.26																																																	
S.D.			.96		.74		1.09		1.10																																																	
N			15		15		30		15																																																	
<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"></td> <td style="width: 15%;"><u>Confederate #1</u></td> <td style="width: 15%;"><u>Confederate #2</u></td> <td style="width: 15%;"><u>Confederate #3</u></td> <td style="width: 15%;"></td> <td style="width: 15%;"><u>Confederate #1</u></td> <td style="width: 15%;"><u>Confederate #2</u></td> <td style="width: 15%;"><u>Confederate #3</u></td> <td style="width: 15%;"></td> <td style="width: 15%;"><u>Confederate #1</u></td> <td style="width: 15%;"><u>Confederate #2</u></td> <td style="width: 15%;"><u>Confederate #3</u></td> </tr> <tr> <td>\bar{X}</td> <td>5.00</td> <td>4.80</td> <td>5.00</td> <td>5.00</td> <td>3.80</td> <td>4.40</td> <td>4.20</td> <td>5.40</td> <td>5.40</td> <td>5.40</td> <td>5.00</td> </tr> <tr> <td>S.D.</td> <td>1.22</td> <td>.84</td> <td>.71</td> <td>1.00</td> <td>.84</td> <td>.89</td> <td>.45</td> <td>1.34</td> <td>1.34</td> <td>1.14</td> <td>1.00</td> </tr> <tr> <td>N</td> <td>5</td> <td>5</td> <td>5</td> <td>5</td> <td>5</td> <td>5</td> <td>5</td> <td>5</td> <td>5</td> <td>5</td> <td>5</td> </tr> </table>												<u>Confederate #1</u>	<u>Confederate #2</u>	<u>Confederate #3</u>		<u>Confederate #1</u>	<u>Confederate #2</u>	<u>Confederate #3</u>		<u>Confederate #1</u>	<u>Confederate #2</u>	<u>Confederate #3</u>	\bar{X}	5.00	4.80	5.00	5.00	3.80	4.40	4.20	5.40	5.40	5.40	5.00	S.D.	1.22	.84	.71	1.00	.84	.89	.45	1.34	1.34	1.14	1.00	N	5	5	5	5	5	5	5	5	5	5	5
	<u>Confederate #1</u>	<u>Confederate #2</u>	<u>Confederate #3</u>		<u>Confederate #1</u>	<u>Confederate #2</u>	<u>Confederate #3</u>		<u>Confederate #1</u>	<u>Confederate #2</u>	<u>Confederate #3</u>																																															
\bar{X}	5.00	4.80	5.00	5.00	3.80	4.40	4.20	5.40	5.40	5.40	5.00																																															
S.D.	1.22	.84	.71	1.00	.84	.89	.45	1.34	1.34	1.14	1.00																																															
N	5	5	5	5	5	5	5	5	5	5	5																																															

a Possible range of scores is 1-7

b Confederate #1 is a Professor in the Department of Psychology
Confederate #2 is Head of the Department of Counselling Psychology
Confederate #3 is Vice-Dean of the Faculty of Social Sciences

Table 13

Analysis of Variance: Effects of Sex Role of Subject,
Sex and Status of Interviewer, and Confederate
on Perceived Status of Interviewer
(N = 120)

Source	SS	df	MS	F-Ratio
Main Effects				
Sex Role of Subject	.41	1	.41	.49
Sex of Interviewer	12.68	1	12.68	15.21*
Status of Interviewer	33.08	1	33.08	39.69*
Confederate	3.27	4	.82	.98
2-Way Interactions				
Sex Role of Subject x Sex of Interviewer	.21	1	.21	.25
Sex Role of Subject x Status of Interviewer	.01	1	.01	.01
Sex of Interviewer x Status of Interviewer	.21	1	.21	.25
Sex Role of Subject x Confederate	2.53	4	.63	.76
Status of Interviewer x Confederate	1.87	4	.47	.56
3-Way Interactions				
Sex Role of Subject x Sex of Interviewer x Status of Interviewer	.68	1	.68	.81
Sex Role of Subject x Status of Interviewer x Confederate	4.07	4	1.02	1.22
Error	80.00	96	.83	

* $p < .001$.

Table 14

Mean Perceived Status and Standard Deviations
for Sex Role, Sex, Status, and Confederate
(N = 240)

	<u>Masculine Subjects</u>			<u>Female Interviewers</u>		
	<u>Same Status I's</u>	<u>Higher Status I's</u>	<u>Higher Status I's</u>	<u>Same Status I's</u>	<u>Higher Status I's</u>	<u>Higher Status I's</u>
	<u>Confederate</u> #1	<u>Confederate</u> #2	<u>Confederate</u> #3	<u>Confederate</u> #1	<u>Confederate</u> #2	<u>Confederate</u> #3
\bar{X}	4.20	4.40	4.40	4.20	4.80	4.40
S.D.	.45	.55	.55	.45	.84	.55
N	5	5	5	5	5	5
\bar{X}	4.33	5.60	5.60	4.47	5.60	5.60
S.D.	.49	.63	.63	.64	1.06	1.06
N	15	15	15	15	15	15
\bar{X}	4.20	4.40	4.40	4.20	4.80	4.40
S.D.	.45	.55	.55	.45	.84	.55
N	5	5	5	5	5	5

Table 14

Mean Perceived Status and Standard Deviations
for Sex Role, Sex, Status, and Confederate
(N = 240)

		<u>Androgynous Subjects</u>								
		<u>Male Interviewers</u>			<u>Female Interviewers</u>					
		<u>Same Status I's</u>		<u>Higher Status I's</u>	<u>Same Status I's</u>		<u>Higher Status I's</u>			
		<u>Confederate</u>		<u>Confederate</u>		<u>Confederate</u>				
		#1	#2	#1	#2	#1	#2			
		#3	#3	#3	#3	#3	#3			
X		5.00	4.80	5.00	6.60	3.80	4.40	5.40	5.40	5.00
S.D.		1.22	.84	1.00	.55	.84	.89	1.34	1.14	1.00
N		5	5	5	5	5	5	5	5	5
X		4.93		5.93		4.13		5.26		
S.D.		.88		.96		.74		1.10		
N		15		15		15		15		
X		5.43				4.70				
S.D.		1.04				1.09				
N		30				30				

Table 14

Mean Perceived Status and Standard Deviations
for Sex Role, Sex, Status, and Confederate
(N = 240)

		<u>Undifferentiated Subjects</u>			<u>Male Interviewers</u>			<u>Female Interviewers</u>		
		Same Status I's	Higher Status I's	Same Status I's	Higher Status I's	Same Status I's	Higher Status I's	Confederate #1	Confederate #2	Confederate #3
X										
S.D.										
N										
		<u>Undifferentiated Subjects</u>			<u>Male Interviewers</u>			<u>Female Interviewers</u>		
X										
S.D.										
N										
		<u>Undifferentiated Subjects</u>			<u>Male Interviewers</u>			<u>Female Interviewers</u>		
X										
S.D.										
N										
		<u>Undifferentiated Subjects</u>			<u>Male Interviewers</u>			<u>Female Interviewers</u>		
X										
S.D.										
N										

a Possible range of scores is 1-7

b Confederate #1 is a Professor in the Department of Psychology
Confederate #2 is Head of the Department of Counselling Psychology
Confederate #3 is Vice-Dean of the Faculty of Social Sciences

Table 15

Analysis of Variance: Effects of Sex Role of Subject,
Sex and Status of Interviewer, and Confederate
on Perceived Status of Interviewer
(N = 240)

Source	SS	df	MS	F-Ratio
Main Effects				
Sex Role of Subject	.45	3	.15	.19
Sex of Interviewer	4.00	1	4.00	5.14*
Status of Interviewer	67.20	1	67.20	86.25***
Confederate	4.38	4	1.10	1.41
2-Way Interactions				
Sex Role of Subject x Sex of Interviewer	9.55	3	3.18	4.08**
Sex Role of Subject x Status of Interviewer	.55	3	.18	.23
Sex of Interviewer x Status of Interviewer	.20	1	.20	.26
Sex Role of Subject x Confederate	4.68	12	.39	.50
Status of Interviewer x Confederate	2.32	4	.58	.74
3-Way Interactions				
Sex Role of Subject x Sex of Interviewer x Status of Interviewer	.75	3	.25	.32
Sex Role of Subject x Status of Interviewer x Confederate	5.28	12	.44	.57
Error	149.60	192	.78	

* $p < .05$
** $p < .01$
*** $p < .001$

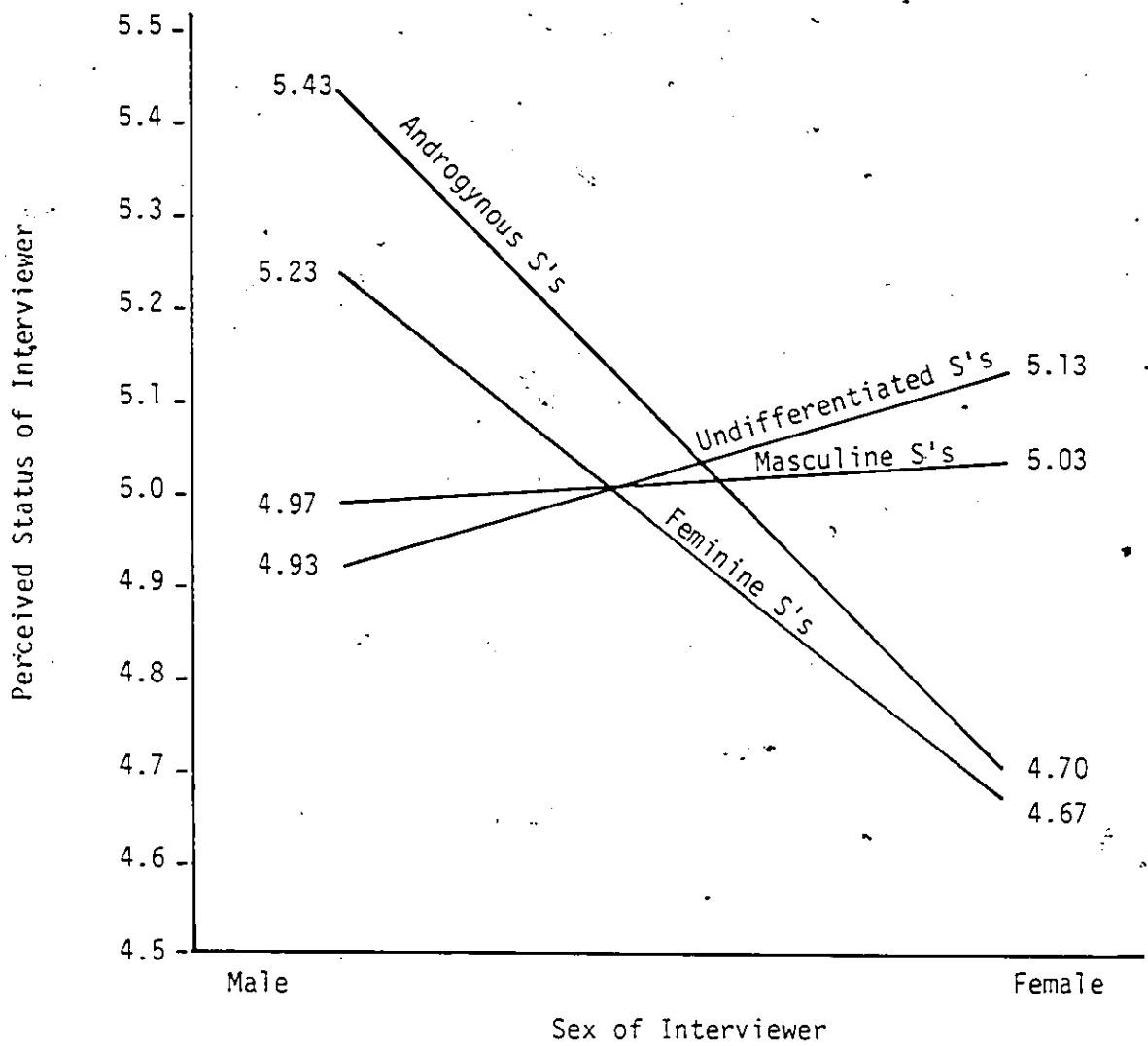


Figure 10. Mean perceived status of interviewer for each condition of the sex role of subject x sex of interviewer interaction effect (N = 240).

scale score substituted for the original sex role of subject variable (see Table G, Appendix 3 for results of this analysis of variance). A significant effect was found for the sex of interviewer x Femininity scale score of subject interaction whereas the sex of interviewer x Masculinity scale score of subject interaction was not significant. Mean perceived status of the interviewer for each condition of the two-way interaction of sex of interviewer x Femininity scale score are presented in Figure A, Appendix 3. A test of simple main effects on the significant two-way interaction (see Table H, Appendix 3) revealed that subjects high on the Femininity scale perceived male interviewers as higher in status than female interviewers, that subjects high on the Femininity scale perceived male interviewers as higher in status than subjects low on the Femininity scale do, and that subjects high on the Femininity scale perceived female interviewers as lower in status than subjects low on the Femininity scale do.

A further post-experiment question investigated whether the perceived status of the interviewer changed during the course of the interview to provide further evidence for the legitimacy of the interview situation. A difficulty arose in interpreting responses to this question in that though subjects frequently indicated that their perception of the status of the interviewer changed, further questioning revealed that they still perceived the individual as "a professor" or "an undergraduate student". What they appeared to be referring to in their responses was the extent to which they were made to feel comfortable by the interviewer. As a result, the analysis carried out on this variable was not further investigated though qualitative inspection of responses further reinforced the perceived genuineness and legitimacy of the interview situation.

For the subgroup, the analysis of variance on the perceived status of the interviewer with respect to the four independent variables of sex role of subject, sex and status of interviewer and confederate (Table 13) was also used to evaluate the relevance of Rebecca et al.'s (1976) model of sex role transcendence. The first issue to investigate was whether feminine (or Stage II) females differed from androgynous (or Stage III) females in terms of the differential status ascribed to male versus female interviewers. It was expected that feminine females would see male interviewers as higher in status than female interviewers, and androgynous females would see male and female interviewers as relatively equal in status. This was tested by the sex role of subject \times sex of interviewer interaction effect. Results were non-significant. The sex role of subject \times sex of interviewer \times status of interviewer interaction effect tested whether feminine females would ascribe less status to higher status females as opposed to higher status males compared to androgynous females who would be expected to accept the actual status of the interviewer regardless of interviewer sex. Results were non-significant here as well. Thus, with regard to the relative status of the sexes as perceived by Stage II versus Stage III individuals, whether or not actual status is taken into account, Rebecca et al.'s model was not confirmed. Moreover, a significant main effect for sex of interviewer was revealed indicating that, even across sex role of subjects, status of interviewer and confederates, male interviewers were seen as higher in status than female interviewers.

Schematic measure of personal space. Following Duke (Note 4), who had suggested presenting subjects with the opportunity to anchor "close" and "far" distances (see Chapter II, p. 43 and Chapter III, p. 86), a one-tailed

t-test was carried out to determine if subjects were in fact differentiating close from far in terms of personal space. Mean scores and standard deviations for the "close" and "far" conditions were respectively 7.78 mm with a standard deviation of 6.13 and 33.65 mm with a standard deviation of 18.83 for the subgroup of 60 subjects, categorized as androgynous or feminine, who had participated in both the behavioural and schematic measures of personal space. Mean scores and standard deviations for the "close" and "far" conditions were respectively 7.57 mm with a standard deviation of 6.42 and 37.27 mm with a standard deviation of 18.75 for the total group of 119 subjects, representing individuals from all four sex role categories, who had participated in both the behavioural and schematic measures of personal space. Results were significant in the expected direction for both the subgroup and the total group ($t(59) = -12.26, p < .001$ and $t(118) = -17.93, p < .001$) respectively, indicating that subjects differentiated close from far physically and offering support for the use of the schematic measure to investigate differential personal space preferences.

In order to carry out the analysis of variance with respect to the three independent variables of sex role of subject, sex of interviewer, and status of interviewer on the dependent variable of distance for the schematic measure in a parallel fashion to the analysis carried out on the behavioural measure, the three different higher status levels for each sex of object condition were collapsed into one mean score for each sex. This procedure was seen as appropriate since all higher status scores for each sex condition were found to be significantly positively correlated with each other. As can be seen from Tables 16 and 17, correlation coefficients range from .75 - .90 and are significant at the $p < .001$ level.

Table 16
 Pearson Correlation Coefficients
 of Status Scores for Same Sex Pairs of Higher
 Status Conditions
 on Schematic Measure of Personal Space
 (N = 60)

	Male Head	Male Vice-Dean	Female Head	Female Vice-Dean
Male Professor	.86 * N=59 ^a	.80 * N=60		
Male Head		.86 * N=59 ^a		Y
Female Professor			.75 * N=59 ^a	.89 * N=60
Female Head				.81 * N=59 ^a

* $p < .001$

^a Missing values for Male Head and Female Head condition for one subject.

Table 17
 Pearson Correlation Coefficients
 of Status Scores for Same Sex Pairs of Higher
 Status Conditions
 on Schematic Measure of Personal Space
 (N = 119)

	Male Head	Male Vice-Dean	Female Head	Female Vice-Dean
Male Professor	.87* N=118 ^a	.83* N=119		
Male Head		.87* N=118 ^a		
Female Professor			.80* N=118 ^a	.90* N=119
Female Head				.85* N=118 ^a

* $p < .001$

^aMissing values for Male Head and Female Head condition for one subject.

After subjects completed the schematic measure of personal space exercise, they were given a post-experiment question to investigate what they perceived as the purpose of the research. A common response to the post-experiment question was a restatement of the overview given in the directions at the beginning of the questionnaire booklet. Other subjects suggested that the study was about relative comfort in different situations, self-confidence, anxiety or respect for others as shown by differential distance preferences. Some felt the study was done to provide ways for individuals to learn better skills of social interaction. Others offered possible applications of the study such as the planning of stores, airports and so on. A few subjects suggested that a scale for the distance should have been used and whether or not others were present in the imaginary room should have been specified. Other subjects stressed the artificiality of the conditions, indicating that distance in reality will be determined by what the person is like and not his social status. No subject, however, commented on a possible linkage between the behavioural measure of personal space and the present measure, further supporting the perceived legitimacy of the personal interview as a behavioural measure of personal space of which the subject is unaware.

Hypotheses

The mean distances maintained from the interviewer for the behavioural measure of personal space for the subgroup of 60 androgynous and 60 feminine subjects and the total group of 240 subjects representing all four sex role categories respectively were 144.88 cm and 144.62 cm with standard deviations of 60.52 and 60.45. Four way analyses of variance, with

independent variables of sex role of subject, sex and status of interviewer, and confederate were carried out on the behavioural measure of personal space for the subgroup and the total group. Means and standard deviations for each level of each condition, means and standard deviations for each main effect, and results of the analysis of variance computed on the behavioural distance measure are presented in Tables 18, 19 and 20 respectively for the subgroup, and in Tables 21, 22 and 23 respectively for the total group.

The mean distances maintained from each of the imagined object person conditions for the schematic measure of personal space for the subgroup of 60 subjects and the total group of 119 subjects, can be found in Tables 24 and 25. Four-way analyses of variance, with independent variables of form, sex role of subject, and sex and status of the object person were carried out on the schematic measure of personal space for the subgroup and the total group. The number of subjects represented in each cell across form of measure and sex role of subject are presented in Tables 26 and 27 for the subgroup and total group respectively. For both the subgroup and the total group, the main effect of form was found to be nonsignificant ($F(2,54) = .55, p > .05$ and $F(2,107) = 1.24, p > .05$ respectively). As a result, the variable form was omitted and the analyses were rerun as 2x2x2 analyses of variance. For the subgroup, there were 30 subjects in each of the two sex role categories, resulting in an equal number of subjects in each cell. For the total group, the number of subjects represented in each cell across sex role of subject as a result of the omission of the form variable is presented in Table 28. Means and standard deviations for each

Table 18

Mean Distances and Standard Deviations
for Sex Role, Sex, Status, and Confederate
(Behavioural Measure of Personal Space)
(N = 120)

		<u>Androgynous Subjects</u>											
		<u>Male Interviewers</u>			<u>Female Interviewers</u>								
		<u>Same Status I's</u>		<u>Higher Status I's</u>		<u>Same Status I's</u>		<u>Higher Status I's</u>					
		Confederate #1	Confederate #2	Confederate #3	Confederate #1	Confederate #2	Confederate #3	Confederate #1	Confederate #2	Confederate #3			
\bar{X}		139.60	83.20	133.90	214.80	199.40	176.40	132.20	135.10	194.10	130.40	125.00	135.30
S.D.		50.00	7.05	33.88	17.78	46.74	60.28	82.63	66.34	46.66	54.45	57.96	69.37
N		5	5	5	5	5	5	5	5	5	5	5	5
\bar{X}		149.95											
S.D.		60.63											
N		60											
\bar{X}		157.88											
S.D.		58.22											
N		30											
\bar{X}		118.90											
S.D.		41.78											
N		15											
\bar{X}		196.87											
S.D.		44.94											
N		15											
\bar{X}		153.80											
S.D.		68.57											
N		15											
\bar{X}		142.02											
S.D.		62.92											
N		30											

^a In units of centimetres

^b Confederate #1 is a Professor in the Department of Psychology
Confederate #2 is Head of the Department of Counselling Psychology
Confederate #3 is Vice-Dean of the Faculty of Social Sciences

Table 19
 Mean Distance and Standard Deviation
 for Each Level of Each Main Effect of Sex Role of Subject,
 Sex and Status of Interviewer, and Confederate
 (Nested under Sex)
 (N = 120)

Main Effect	Mean	Standard Deviation	N
Sex Role of Subject			
Feminine	137.82 ^a	60.30	60
Androgynous	149.95	60.63	60
Sex of Interviewer			
Male	156.51	60.52	60
Confederate 1	195.00	43.92	20
Confederate 2	129.78	60.93	20
Confederate 3	144.75	57.23	20
Female	131.26	58.30	60
Confederate 1	127.18	58.35	20
Confederate 2	110.90	48.35	20
Confederate 3	155.70	61.08	20
Status of Interviewer			
Same Status	137.08	60.31	60
Higher Status	150.68	60.46	60

^aIn units of centimetres

Table 20

Analysis of Variance: Effects of Sex Role of Subject,
Sex and Status of Interviewer, and Confederate
on Distance Between Two Chairs in an Interview
(Behavioural Measure of Personal Space)
(N = 120)

Source	SS	df	MS	F-Ratio
Main Effects				
Sex Role of Subject	4416.53	1	4416.53	1.62
Sex of Interviewer	19126.88	1	19126.88	7.00*
Status of Interviewer	5548.80	1	5548.80	2.03
Confederate	67261.37	4	16815.34	6.16**
2-Way Interactions				
Sex Role of Subject x Sex of Interviewer	2641.41	1	2641.41	.97
Sex Role of Subject x Status of Interviewer	5548.80	1	5548.80	2.03
Sex of Interviewer x Status of Interviewer	9919.01	1	9919.01	3.63
Sex Role of Subject x Confederate	13393.33	4	3348.33	1.23
Status of Interviewer x Confederate	8976.37	4	2244.09	.82
3-Way Interactions				
Sex Role of Subject x Sex of Interviewer x Status of Interviewer	31850.21	1	31850.21	11.66**
Sex Role of Subject x Status of Interviewer x Confederate	4921.37	4	1230.34	.45
Error	262205.30	96	2731.31	

* $p < .01$
** $p < .001$

Table 21

Mean Distances and Standard Deviations
for Sex Role, Sex, Status, and Confederate
(Behavioural Measure of Personal Space)
(N = 240)

		<u>Androgynous Subjects</u>											
		<u>Male Interviewers</u>			<u>Female Interviewers</u>								
		<u>Same Status I's</u>		<u>Higher Status I's</u>		<u>Same Status I's</u>		<u>Higher Status I's</u>					
		<u>Confederate</u>	<u>#3</u>	<u>Confederate</u>	<u>#3</u>	<u>Confederate</u>	<u>#3</u>	<u>Confederate</u>	<u>#3</u>				
		<u>#1</u>	<u>#2</u>	<u>#1</u>	<u>#2</u>	<u>#1</u>	<u>#2</u>	<u>#1</u>	<u>#2</u>				
\bar{X}		139.60	83.20	133.90	214.80	199.40	176.40	132.20	135.10	194.10	130.40	125.00	135.30
S.D.		50.00	7.05	33.88	17.78	46.74	60.28	82.63	66.34	46.66	54.45	57.45	69.37
N		5	5	5	5	5	5	5	5	5	5	5	5
\bar{X}		118.90	41.78	157.88	196.87	44.94	142.02	153.80	68.57	142.02	130.23	56.58	142.02
S.D.		41.78	15	58.22	44.94	15	62.92	68.57	15	62.92	56.58	15	62.92
N		15	15	30	15	15	30	15	15	30	15	15	30
\bar{X}		139.60	83.20	133.90	214.80	199.40	176.40	132.20	135.10	194.10	130.40	125.00	135.30
S.D.		50.00	7.05	33.88	17.78	46.74	60.28	82.63	66.34	46.66	54.45	57.45	69.37
N		5	5	5	5	5	5	5	5	5	5	5	5

Table 22

Mean Distance and Standard Deviation
for Each Level of Each Main Effect of Sex Role of Subject,
Sex and Status of Interviewer, and Confederate
(Nested under Sex)
(N = 240)

Main Effect	Mean	Standard Deviation	N
Sex Role of Subject			
Masculine	145.99 ^a	60.00	60
Feminine	137.82	60.30	60
Androgynous	149.95	60.63	60
Undifferentiated	144.73	61.73	60
Sex of Interviewer			
Male	159.09	59.66	120
Confederate 1	195.44	46.06	40
Confederate 2	126.66	54.23	40
Confederate 3	155.16	57.88	40
Female	130.15	57.93	120
Confederate 1	127.89	60.48	40
Confederate 2	109.58	49.24	40
Confederate 3	153.00	56.41	40
Status of Interviewer			
Same Status	143.69	59.60	120
Higher Status	145.55	61.52	120

^a In units of centimetres

Table 23

Analysis of Variance: Effects of Sex Role of Subject,
Sex and Status of Interviewer, and Confederate
on Distance Between Two Chairs in an Interview
(Behavioural Measure of Personal Space)
(N = 240)

Source	SS	df	MS	F-Ratio
Main Effects				
Sex Role of Subject	4595.20	3	1531.73	.53
Sex of Interviewer	50228.27	1	50228.27	17.49**
Status of Interviewer	207.20	1	207.20	.07
Confederate	133547.23	4	33386.81	11.63**
2-Way Interactions				
Sex Role of Subject x Sex of Interviewer	6954.63	3	2318.21	.81
Sex Role of Subject x Status of Interviewer	13828.30	3	4609.43	1.61
Sex of Interviewer x Status of Interviewer	16434.15	1	16434.15	5.72*
Sex Role of Subject x Confederate	30881.32	12	2573.44	.90
Status of Interviewer x Confederate	6414.82	4	1603.71	.56
3-Way Interactions				
Sex Role of Subject x Sex of Interviewer x Status of Interviewer	32399.08	3	10799.69	3.76*
Sex Role of Subject x Status of Interviewer x Confederate	26308.80	12	2192.40	.76
Error	551,406.65	192	2871.91	

* $p < .05$
** $p < .001$

Table 24

Mean Distance Maintained and Standard Deviation
for Each Object Person Condition
on Schematic Personal Space Measure
(N = 60)

Object Person Condition	Mean Distance (mm)	Standard Deviation
Same Status		
Male	16.92	11.41
Female	16.52	10.89
Higher Status		
Male Professor	20.43	10.59
Female Professor	18.38	10.72
Male Head	22.63	12.63
Female Head	20.86	11.40
Male Vice-Dean	22.28	13.74
Female Vice-Dean	20.57	11.65

Table 25

Mean Distance Maintained and Standard Deviation
for Each Object Person Condition
on Schematic Personal Space Measure
(N = 119)

Object Person Condition	Mean Distance (mm)	Standard Deviation
Same Status		
Male	18.27	12.53
Female	16.27	10.28
Higher Status		
Male Professor	21.76	12.80
Female Professor	19.33	11.61
Male Head	23.14	13.11
Female Head	22.06	12.93
Male Vice-Dean	23.18	14.01
Female Vice-Dean	21.28	12.60

Table 26

Number of Subjects in Each Cell Across Form
and Sex Role of Subject for Schematic
Personal Space Measure
(N = 60)

Sex Role Category	Form	Frequency per Cell
Androgynous	1	7
Androgynous	2	13
Androgynous	3	10
Feminine	1	8
Feminine	2	11
Feminine	3	11

E

Table 27
 Number of Subjects in Each Cell Across Form
 and Sex Role of Subject, for Schematic
 Personal Space Measure
 (N = 119)

Sex Role Category	Form	Frequency per Cell
Masculine	1	4
Masculine	2	11
Masculine	3	10
Feminine	1	8
Feminine	2	11
Feminine	3	11
Androgynous	1	7
Androgynous	2	13
Androgynous	3	10
Undifferentiated	1	14
Undifferentiated	2	12
Undifferentiated	3	8

Table 28

Number of Subjects in Each Cell across Sex Role of Subject
for Schematic Personal Space Measure:
(N = 119)

Sex Role Category	Frequency per Cell
Masculine	25
Feminine	30
Androgynous	30
Undifferentiated	34

main effect, and results of the analyses of variance are presented in Tables 29, 30 and 31 respectively for the subgroup and Tables 32, 33 and 34 respectively for the total group.

Hypothesis 1. Hypothesis 1 predicted that males would be afforded greater personal space than females. This hypothesis was confirmed for the subgroup and the total group on the behavioural measure ($F = 7.00, p < .01$ and $F = 17.49, p < .001$ respectively; mean distances can be found in Tables 19 and 22 respectively), and for the total group only on the schematic measure, ($F = 14.26, p < .001$; mean distances can be found in Table 33).

Hypothesis 2. Hypothesis 2 predicted that higher status individuals would be afforded greater personal space than same status individuals. This hypothesis was confirmed for both the subgroup and the total group on the schematic measure only ($F = 24.68, p < .001$ and $F = 56.74, p < .001$ respectively; mean distances can be found in Tables 30 and 33 respectively).

Though no significant main effect for status was found on the behavioural measure, a significant effect on behavioural distance was found for the sex of interviewer x status of interviewer interaction for the total group ($F = 5.72, p < .05$). The mean distance for each condition of the two-way interaction is presented in Figure 11. A test of simple main effects (see Table I in Appendix 3) revealed that subjects preferred significantly greater distances with higher status male interviewers versus higher status female interviewers. Subjects did not differ significantly in terms of distance preference between same status males versus females, between either higher status versus same status males, or between either higher versus same status females.

Table 29
 Mean Distances and Standard Deviations
 for Sex Role, Sex, and Status
 on Schematic Measure of Personal Space
 (N = 60)

<u>Feminine Subjects</u>				
\bar{X}	19.59 ^a			
S.D.	10.32 ^b			
N	120 ^b			
	<u>Male Object Person</u>		<u>Female Object Person</u>	
\bar{X}	20.41		18.77	
S.D.	11.36		9.20	
N	60		60	
	<u>Same Status Object Person</u>	<u>Higher Status Object Person</u>	<u>Same Status Object Person</u>	<u>Higher Status Object Person</u>
\bar{X}	17.73	23.08	17.03	20.51
S.D.	11.23	11.02	9.24	8.97
N	30	30	30	30
<u>Androgynous Subjects</u>				
\bar{X}	17.90			
S.D.	12.17 ^b			
N	120 ^b			
	<u>Male Object Person</u>		<u>Female Object Person</u>	
\bar{X}	18.19		17.61	
S.D.	12.14		12.29	
N	60		60	
	<u>Same Status Object Person</u>	<u>Higher Status Object Person</u>	<u>Same Status Object Person</u>	<u>Higher Status Object Person</u>
\bar{X}	16.10	20.28	16.00	19.21
S.D.	11.72	12.40	12.46	12.11
N	30	30	30	30

^aIn units of millimetres.

^bBecause each of the 60 subjects is presented with all 4 sex/status conditions, the N value is 4 times the actual number of subjects.

Table 30

Mean Distance and Standard Deviation
for Each Level of Each Main Effect of Sex Role of Subject,
and Sex and Status of Object Person
on Schematic Measure of Personal Space
(N = 60)

Main Effect	Mean	Standard Deviation	N
Sex Role of Subject			
Feminine	19.59 ^a	10.32	120 ^b
Androgynous	17.90	12.17	120
Sex of Object Person			
Male	19.30	11.76	120
Female	18.19	10.82	120
Status of Object Person			
Same Status	16.72	11.11	120
Higher Status	20.77	11.15	120

^aIn units of millimetres

^bBecause each of the 60 subjects is presented with all 4 sex/status conditions, the N value is 4 times the actual number of subjects.

Table 31

Analysis of Variance: Effects of Sex Role of Subject and
Sex and Status of Object Person on Distance with Repeated
Measures on Sex and Status of Object Person
(Schematic Measure of Personal Space)
(N = 60)

Source	SS	df	MS	F-Ratio
Sex Role of Subject	171.67	1	171.67	.40
Error	24814.33	58	427.83	
Sex of Object	73.75	1	73.75	3.13
Sex Role of Subject x Sex of Object	16.54	1	16.54	.70
Error	1364.94	58	23.53	
Status of Object	985.36	1	985.36	24.68*
Sex Role of Subject x Status of Object	7.70	1	7.70	.19
Error	2315.23	58	39.92	
Sex of Object x Status of Object	30.13	1	30.13	2.54
Sex Role of Subject x Sex of Object x Status of Object	3.04	1	3.04	.26
Error	687.41	58	11.85	

* $p < .001$

Table 32

Mean Distances and Standard Deviations
for Sex Role, Sex, and Status
on Schematic Measure of Personal Space
(N = 119)

<u>Masculine Subjects</u>				
\bar{X}	19.81 ^a			
S.D.	11.51 ^b			
N	100			
	<u>Male Object Person</u>		<u>Female Object Person</u>	
\bar{X}	21.21		18.41	
S.D.	12.19		10.72	
N	50		50	
	<u>Same Status</u> <u>Object Person</u>	<u>Higher Status</u> <u>Object Person</u>	<u>Same Status</u> <u>Object Person</u>	<u>Higher Status</u> <u>Object Person</u>
\bar{X}	19.20	23.21	15.28	21.53
S.D.	11.62	12.65	7.63	12.48
N	25	25	25	25
<u>Feminine Subjects</u>				
\bar{X}	19.59			
S.D.	10.32 ^b			
N	120			
	<u>Male Object Person</u>		<u>Female Object Person</u>	
\bar{X}	20.41		18.77	
S.D.	11.36		9.20	
N	60		60	
	<u>Same Status</u> <u>Object Person</u>	<u>Higher Status</u> <u>Object Person</u>	<u>Same Status</u> <u>Object Person</u>	<u>Higher Status</u> <u>Object Person</u>
\bar{X}	17.73	23.08	17.03	20.51
S.D.	11.23	11.02	9.24	8.97
N	30	30	30	30

Table 32
 Mean Distances and Standard Deviations
 for Sex Role, Sex, and Status
 on Schematic Measure of Personal Space
 (N = 119)^a

<u>Androgynous Subjects</u>				
\bar{X}	17.90			
S.D.	12.17			
N	120 ^b			
	<u>Male Object Person</u>		<u>Female Object Person</u>	
\bar{X}	18.19		17.61	
S.D.	12.14		12.29	
N	60		60	
	<u>Same Status Object Person</u>	<u>Higher Status Object Person</u>	<u>Same Status Object Person</u>	<u>Higher Status Object Person</u>
\bar{X}	16.10	20.28	16.00	19.21
S.D.	11.72	12.40	12.46	12.11
N	30	30	30	30
<u>Undifferentiated Subjects</u>				
\bar{X}	20.63			
S.D.	13.66			
N	136 ^b			
	<u>Male Object Person</u>		<u>Female Object Person</u>	
\bar{X}	21.94		19.32	
S.D.	14.75		12.45	
N	68		68	
	<u>Same Status Object Person</u>	<u>Higher Status Object Person</u>	<u>Same Status Object Person</u>	<u>Higher Status Object Person</u>
\bar{X}	19.97	23.90	16.56	22.09
S.D.	14.95	14.50	11.06	13.29
N	34	34	34	34

^aIn units of millimetres.

^bBecause each of the 119 subjects is presented with all 4 sex/status conditions, the N value is 4 times the actual number of subjects.

Table 33

Mean Distance and Standard Deviation
for Each Level of Each Main Effect of Sex Role of Subject,
and Sex and Status of Object Person
on Schematic Measure of Personal Space
(N = 119)

Main Effect	Mean	Standard Deviation	N
Sex Role of Subject			
Masculine	19.81 ^a	11.51	100 ^b
Feminine	19.59	10.32	120
Androgynous	17.90	12.17	120
Undifferentiated	20.63	13.66	136
Sex of Object Person			
Male	20.45	12.77	238
Female	18.56	11.25	238
Status of Object Person			
Same Status	17.27	11.48	238
Higher Status	21.24	12.24	238

^a In units of millimetres

^b Because each of the 119 subjects is presented with all 4 sex/status conditions, the N value is 4 times the actual number of subjects.

Table 34

Analysis of Variance: Effects of Sex Role of Subject and
Sex and Status of Object Person on Distance with Repeated
Measures on Sex and Status of Object Person
(N. = 119)

Source	SS	df	MS	F-Ratio
Sex Role of Subject	504.05	3	168.02	.35
Error	55523.25	115	482.81	
Sex of Object	428.66	1	428.66	14.26*
Sex Role of Subject x Sex of Object	90.33	3	30.11	1.00
Error	3456.02	115	30.05	
Status of Object	2364.73	1	2364.73	56.74*
Sex Role of Subject x Status of Object	34.39	3	11.46	.28
Error	4792.70	115	41.68	
Sex of Object x Status of Object	1.24	1	1.24	.07
Sex Role of Subject x Sex of Object x Status of Object	85.48	3	28.49	1.71
Error	1911.06	115	16.62	

*p < .001

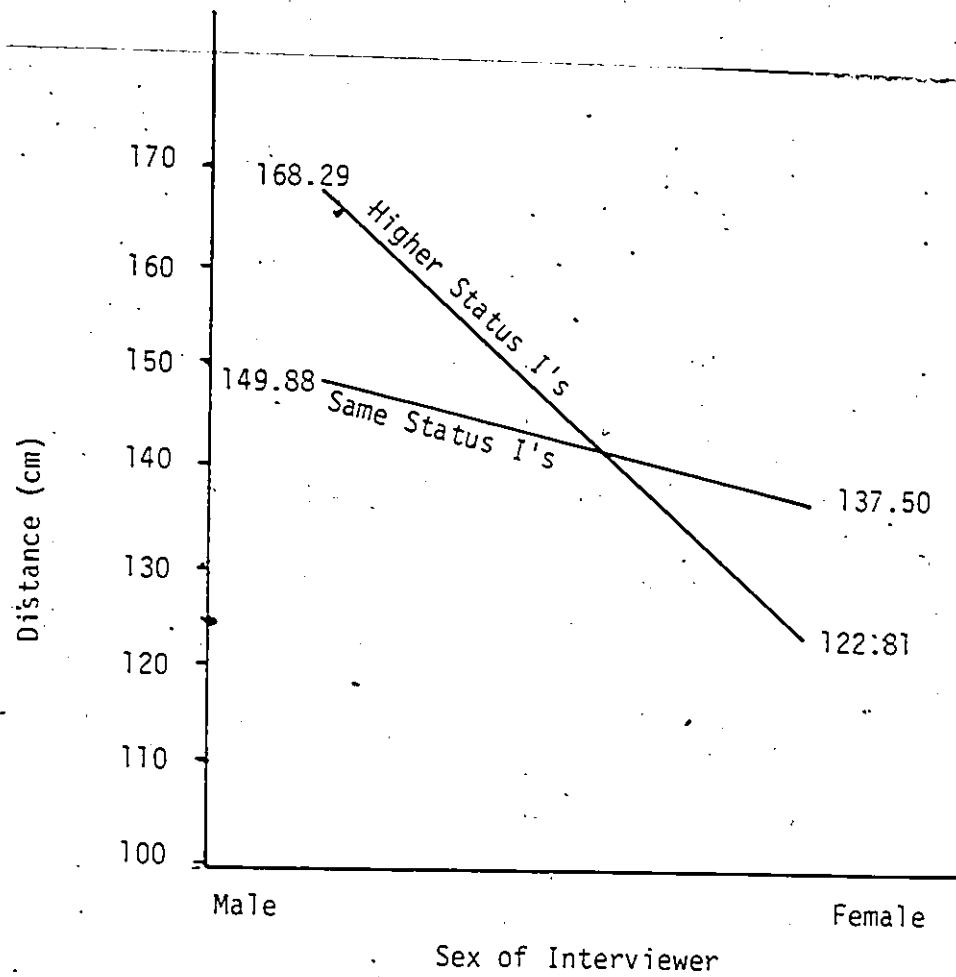


Figure 11. Mean distance for each condition of the sex of interviewer x status of interviewer interaction effect (N = 240).

Hypothesis 3. Hypothesis 3 predicted differences among sex role categories and more specifically between sex-typed (feminine) and androgynous individuals in personal space preferences. This hypothesis was not confirmed for either subgroup or total group on either the behavioural or schematic measures.

Hypothesis 4. Hypothesis 4 predicted a sex role of subject x sex of interviewer (object) interaction effect for both the subgroup (as a test of the Rebecca et al. model) and the total group. This hypothesis was not confirmed for either subgroup or total group on either the behavioural or schematic measure.

Hypothesis 5. Hypothesis 5 predicted a sex role of subject x sex of interviewer (object) x status of interviewer (object) interaction effect for both the subgroup (as a test of the Rebecca et al. model) and the total group. Significant interaction effects were noted for the subgroup and the total group on the behavioural measure only (respectively, $F = 11.66$, $p < .001$ and $F = 3.76$, $p < .05$). The mean distance for each condition of the three-way interaction is presented in Figure 12 for the subgroup and Figure 13 for the total group.

Inspection of the means for the different conditions for the subgroup revealed that results were in a reverse direction of what had been predicted. Androgynous females preferred much greater distances with higher status versus same status males and did not vary as much in distance preference with higher versus same status females. Feminine females did not differ very much in distance preference with higher versus same status males or higher versus same status females. Androgynous females also preferred much greater distances with higher status males versus females,

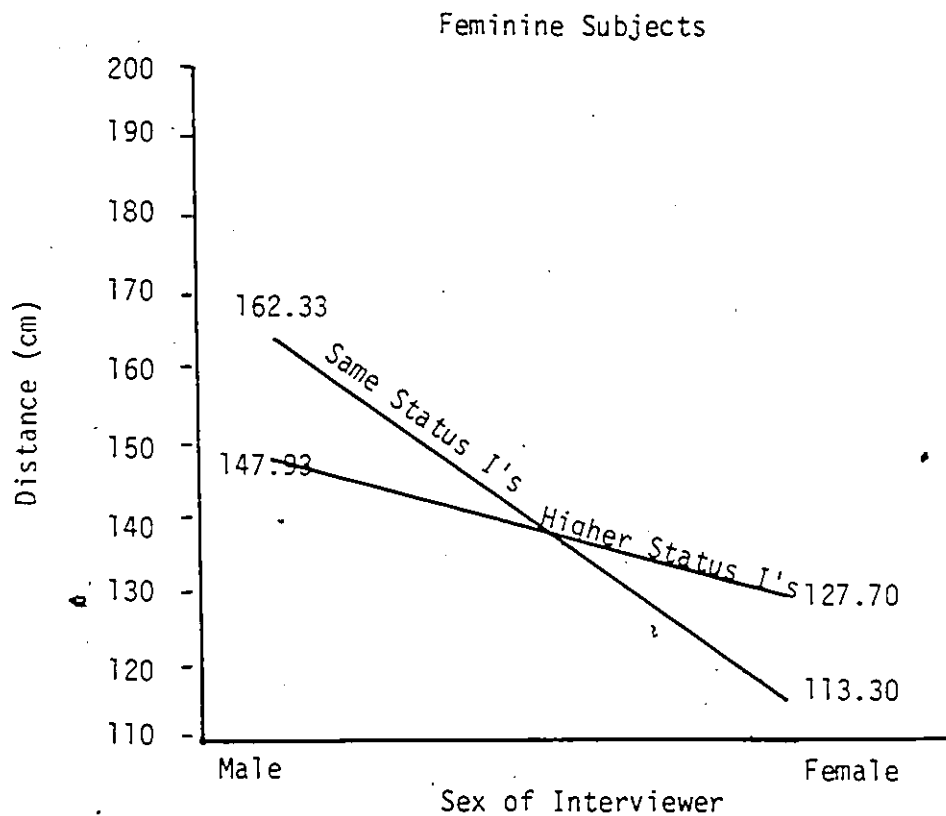
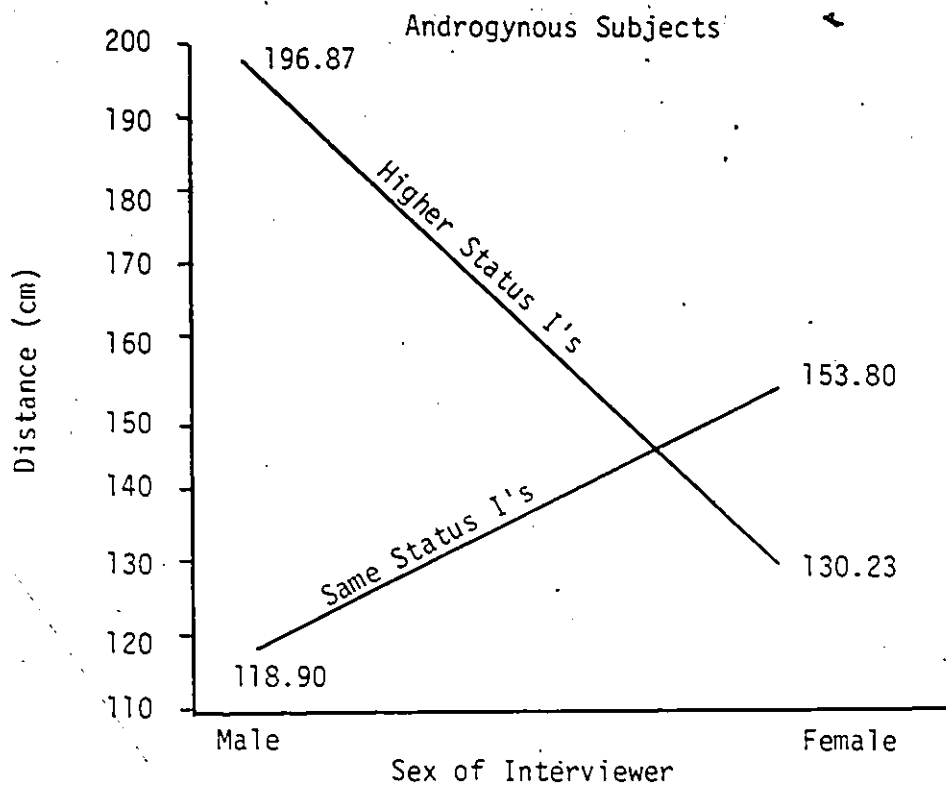


Figure 12. Mean distance for each condition of the sex role of subject x sex of interviewer x status of interviewer interaction effect (N = 120)

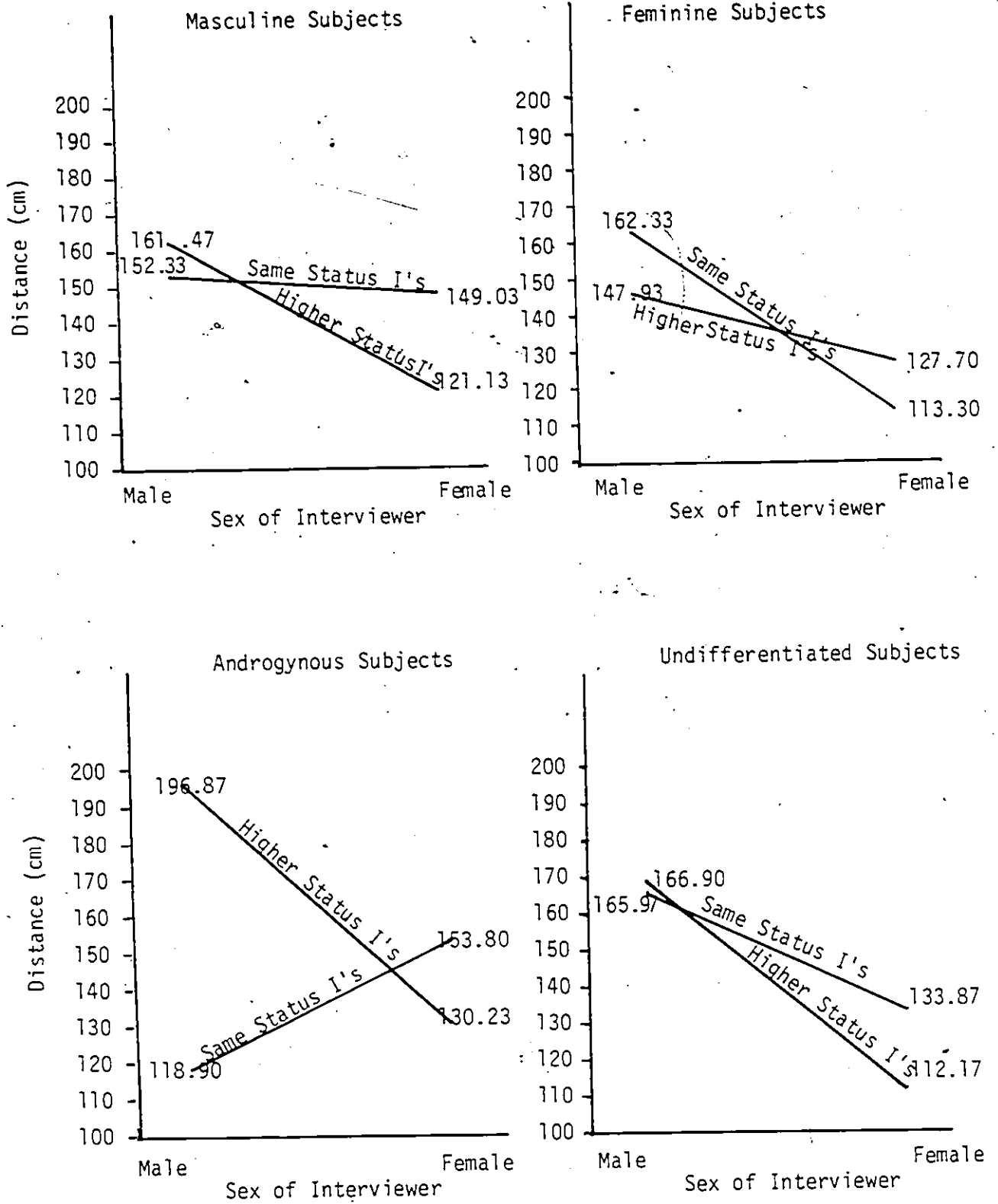


Figure 13. Mean distance for each condition of the sex role of subject x sex of interviewer x status of interviewer interaction effect (N = 240).

unlike feminine females who did not vary as much in distance preference with higher status-males versus females. Androgynous females preferred greater distance with same status females versus males, feminine females preferred greater distance with same status males versus females. Higher status males were afforded the greatest distance and same status males the smallest distance by androgynous females. Same status males were afforded the greatest distance and same status females the smallest distance by feminine females.

Inspection of the data for the total group revealed that the major differences between means of relevance were within the androgynous sex role category and thus consistent with those findings obtained on the subgroup previously reported. The greatest absolute discrepancies in distance preference were in the androgynous sex role category. Androgynous females were found to prefer much greater distance with higher status males versus higher status females and much greater distance with higher status males versus same status males. Further, across all sex role categories except androgyny, females preferred greater distance with same status males versus same status females. Androgynous females preferred greater distance with same status females versus same status males.

In order to determine the relative influence of the separate Masculinity and Femininity scales in determining distance preferences, distance data were reanalyzed by means of a five-way analysis of variance (see Table J, Appendix 3 for results of this analysis), with independent variables of sex and status of interviewer, Masculinity scale score of subject, Femininity scale score of subject, and confederate. Main effects were found to be consistent with findings on the previously described

four-way analysis of variance. However, a significant effect was found for the status of interviewer x sex of interviewer x Masculinity scale score of subject interaction ($F = 6.84, p < .01$). The mean distance for each condition of the three-way interaction is presented in Figure 14. The three-way interaction effect of status of interviewer x sex of interviewer x Femininity scale score of subject was not significant ($F = .06, p > .05$).

Other Findings

Confederates. Significant main effects on behavioural distances were found for the confederate variable for both the subgroup ($F = 6.16, p < .001$) and the total group ($F = 11.63, p < .001$). Newman-Keuls multiple comparison statistics revealed that, for the subgroup, the mean distance maintained from one of the confederates (195.00 cm) was significantly greater than the mean distance maintained from each of the other male confederates and two of the female confederates ($p < .01$) and the third female confederate ($p < .05$), and for the total group, the mean distance maintained from one of the male confederates (195.44 cm) was significantly greater than the mean distance maintained from each of the other confederates ($p < .01$).

Other behavioural measures. Results of the three separate analyses of variance on the two dependent variables of relative position (the angle of orientation measure and the difference measure described in Appendix 2-E) and the dependent variable of body-lean revealed no significant main effects or interaction effects for the subgroup (see Appendix 3, Tables

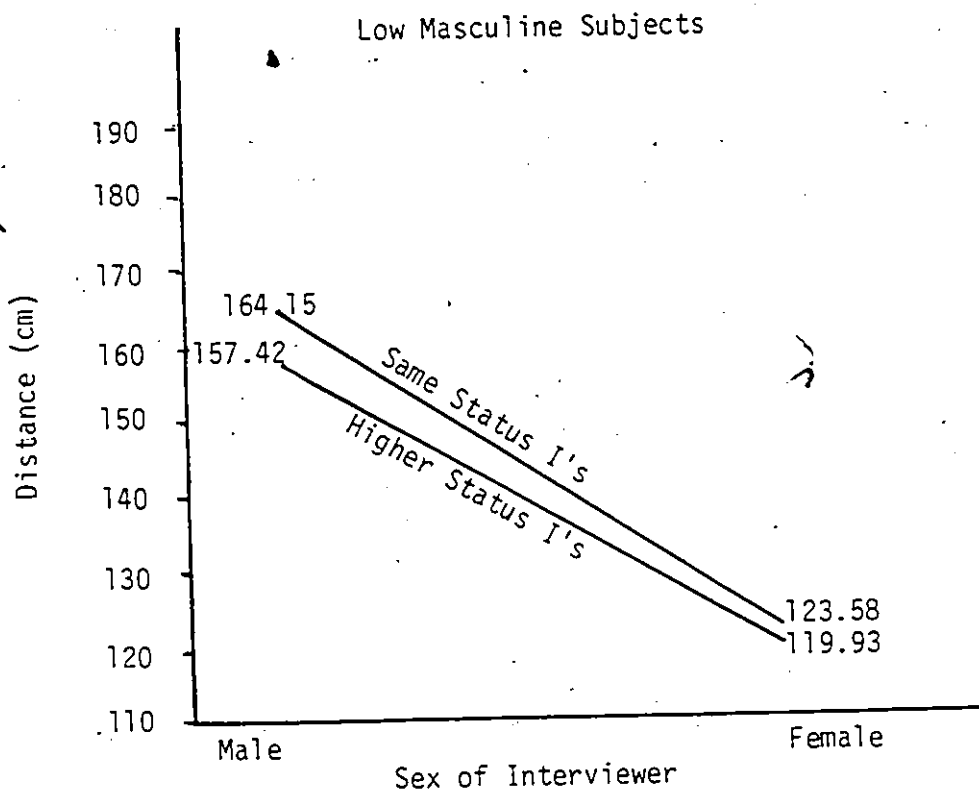
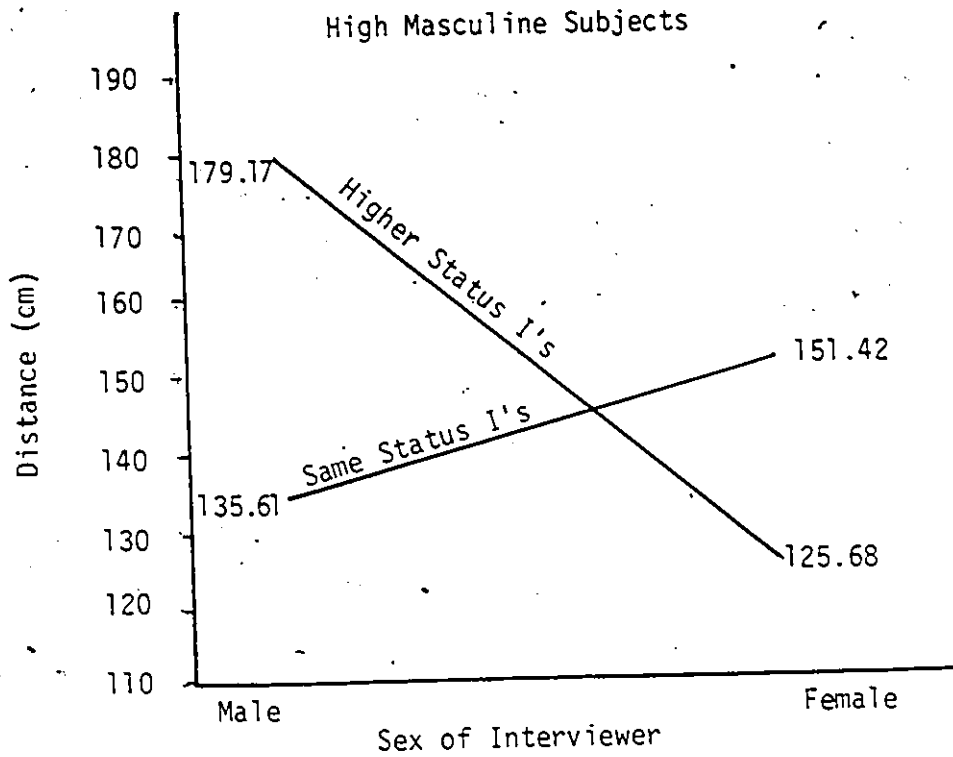


Figure 14. Mean distance for each condition of the Masculinity scale score x sex of interviewer x status of interviewer interaction effect (N = 240).

K to P for means and standard deviations for each level of each condition and the corresponding results of the analysis of variance for these three dependent measures).

For the total group, means and standard deviations for each level of each condition and results of the two separate analyses of variance on the two dependent variables of relative position (the angle of orientation measure and the difference measure) are respectively presented in Tables Q to T in Appendix 3. The main effect of sex of interviewer was found to be significant for the two dependent variables of relative position (angle of orientation: $F = 8.22$, $p < .01$; difference measure: $F = 7.10$, $p < .01$). Subjects tended to prefer more direct orientation with male interviewers versus female interviewers. Subjects, as noted previously, also preferred greater distances with male interviewers versus female interviewers. The main effect of confederate was also found to be significant for the two dependent variables of relative position (respectively $F = 4.92$, $p < .001$; $F = 4.30$, $p < .01$). A Newman-Keuls multiple comparison statistic, calculated to investigate the significance of the difference between means for the different confederates on the angle of orientation measure and the difference measure, revealed that the mean angle maintained from one male confederate was significantly less than from most other confederates ($p < .05$). This is the same confederate from whom distances were greatest. No other significant main effects or significant interaction effects on the dependent variable of relative position were found.

Results of the analysis of variance computed on the dependent variable of body lean for the total group (see Table U and V in Appendix 3 for the mean and standard deviation for each level of each condition and the results of the analysis of variance for this dependent measure), revealed a significant effect only for the sex role and status interaction ($F = 3.15$, $p < .05$). A test of simple main effects (see Table W in Appendix 3) revealed that only undifferentiated subjects differentiated between same and higher status interviewers in terms of body lean, tending to lean towards same status interviewers relative to higher status interviewers ($F 7.31$, $p < .01$). Subjects falling into other sex role categories tended to prefer similar body lean across status of interviewer.

Pearson correlation coefficient matrices of all combinations of the four dependent behavioural variables were obtained for the subgroup (Table 35) and the total group (Table 36). Results for the two groups were similar. Negative correlations between distance and relative position indicate that the closer an individual sits to an interviewer, the greater her angle of orientation and the greater her distance measure. Extremely high positive correlations between the two relative position measures (angle of orientation and difference measure) for both the subgroup and the total group were found. The only correlations not to reach significance were those involving body lean.

Relationship Between Behavioural and Schematic Personal Space Measures

Pearson correlation coefficients were calculated on the behavioural measure distance scores and corresponding same status or mean higher status schematic measure distance scores, and on the behavioural measure distance

Table 35

Pearson Correlation Coefficients and Significance Levels on
Four Dependent Behavioural Measure of Personal Space
(N = 120)

	Angle of Orientation Measure	Difference Measure	Body Lean
Distance	-.63*	-.61*	-.09
Angle of Orienta- tion Measure		.95*	.08
Difference Measure			.09

*p < .001

Table 36

Pearson Correlation Coefficients and Significance Levels on
Four Dependent Behavioural Measure of Personal Space
(N = 240)

	Angle of Orientation Measure ¹	Difference Measure	Body Lean
Distance	- .65*	- .63*	- .10
Angle of Orienta- tion Measure		.94* ⁵	.08
Difference Measure			.06

* $p < .001$



2

scores and corresponding same status or specific higher status (professor, head, vice-dean) schematic measure distance scores (Table 37). Pearson correlation coefficients were also calculated on the behavioural measure distance scores and the corresponding schematic measure conditions separately. These were carried out using both the mean higher status scores on the schematic measure and the specific higher status scores on the schematic measure (Table 38 and Table 39 respectively). As can be seen from Table 37, results indicate that there is little overall correspondence between the two measures of personal space. Results of the Pearson correlations coefficients calculated separately for each condition and presented in Table 38 and Table 39, indicate that significant correlations occur but the number of subjects is too small to allow conclusive statements.

Table 37

Pearson Correlation Coefficients Between Behavioural and
Schematic Personal Space Measure Distance Scores
(N = 119)

	Pearson Correlation Coefficient
Correlation based on Mean Higher Status Scores on Schematic Measure	.12
Correlation based on Individual Higher Status Scores on Schematic Measure	.11

Table 38

Separate Pearson Correlation Coefficients Between Behavioural
Distance Scores and Corresponding Condition on Schematic
Distance Measure Based on Mean Higher Status Scores
on Schematic Distance Measure

	Sex			
	Male		Female	
	Same Status	Mean Higher Status	Same Status	Mean Higher Status
Pearson Correlation Coefficient	.30	.10	.17	.09
Number of Subjects	30	32	29	28

Table 39.

Separate Pearson Correlation Coefficients Between Behavioural Distance Scores and Corresponding Condition on Schematic Distance Measure Based on Individual Higher Status Scores on Schematic Distance Measure.

	Sex							
	Same Status	Male			Female			
		Higher Status	Same Status	Higher Status	Same Status	Higher Status	Higher Status	
	Professor	Head	Vice-Dean	Professor	Head	Vice-Dean		
Pearson Correlation Coefficient	.30	.24	.71*	-.70*	.17	.10	-.19	.52
Number of Subjects	30	15	10	7	29	10	10	8

* $p < .05$

CHAPTER V

DISCUSSION OF RESULTS

The present study proposed to investigate the effect of sex role on the personal space preferences of females both generally and with respect to varying conditions of sex and status of others. Where applicable, a model of sex role transcendence was used as the basis for the hypotheses made. The variables studied also offered the opportunity to investigate if findings already noted in the literature on personal space would be replicated.

Validation of Procedure

With regard to the legitimacy of methodology, the behavioural measure of personal space appears to be a valid method to obtain information about nonverbal behaviour. It was perceived as a legitimate interview situation in which the indicated status of the interviewer and the topic discussed were generally accepted at face value and subjects were generally at ease and comfortable. The schematic measure of personal space presented more obvious difficulties in that, though the status manipulation was accepted, the situation was artificial, and perceived as such.

Comparisons made between the behavioural measure and the schematic measure of personal space revealed little correspondence between the two measures. Though the schematic measure of personal space was an adaptation of the Comfortable Interpersonal Distance Scale developed by Duke and Nowicki (1972), and thus not identical to its predecessor, similarities

were strong enough to warrant the expectation of higher correlations between behavioural and schematic measures as had been found in the validation studies carried out on the Comfortable Interpersonal Distance Scale. Only two significant results were found for the various comparisons made (see Chapter IV, Table 37-39) and one was in the reverse direction of what had been expected and both were calculated on a small number of subjects.

One possible reason for this overall lack of correspondence may be the differences between the type of distancing used in the measures. In the schematic measure, imagined standing distance is being measured. In the behavioural measure, distance in a seated interview is being investigated. Though seated distance would have been preferred for both measures, in the light of more fruitful results in this condition (Wittig & Skolnick, 1978), it was felt that imagining sitting down and pulling up a chair in the schematic measure would have involved too many steps.

For the behavioural measure, a significant main effect was found for confederate, a possible confounding effect which is not present for the schematic measure. It is evident that individual characteristics or specific mannerisms of the individual interviewers significantly affected the distance preferences of subjects. The effect seems to be largely due to one confederate from whom subjects most frequently maintained maximum distance. This occurred even though procedures were highly standardized: confederates, having been trained on the same occasion and observed during roleplaying, assured that the procedures were carried out in a similar manner by all. These results thus argue for careful standardization of

procedures, frequent monitoring, and for the use of as many confederates as feasible in each condition in order to avoid biasing effects due to individual differences.

As well, of necessity, the schematic measure of personal space, unlike the behavioural measure, is a measure of which the subject is aware. When subjects are aware of the fact that distance is being measured, they may respond in ways they feel are appropriate thus suppressing any more spontaneous inclinations. This criticism can be made of all schematic measures of personal space. Further, the validation studies of the Comfortable Interpersonal Distance Scale appear to have been carried out using awareness behavioural measures primarily (Duke & Kiebach, 1974; Martin, 1972; Sanders, 1976) which may account for the high correspondence between the two types of measures.

The poor correspondence between the behavioural and schematic measures of personal space reinforces the importance of limiting one's generalizations in personal space to the specific conditions demanded by the particular measure. At best and where possible, personal space studies, unless expressly concerned with investigating how a person would react when given a chance to consider alternatives, should be carried out as unobtrusively as possible.

Hypotheses

Hypothesis 1. Hypothesis 1 predicted that males would be afforded greater personal space than females. This hypothesis was generally confirmed, thus corroborating findings of previous research, and fitting well with the findings that males are perceived as higher in status than females.

Hypothesis 2. Hypothesis 2 predicted that higher status individuals would be afforded greater personal space than same status individuals. Findings with regard to status, defined in terms of education and relative position in a university setting, are less clear cut than those with regard to sex in that higher status persons were afforded greater personal space only on the schematic measure of personal space. This occurred even though subjects accepted the status manipulation on the behavioural measure.

A possible explanation for this finding is that subjects, in imagining themselves having a conversation with a professor, vice-dean, or head of a department (as was the case in the schematic measure), may maximize the status discrepancy between themselves and the other. In the interview situation (the behavioural measure), on the other hand, factors such as the overall impression made by the particular confederate may be operating to minimize the status differential. Also, subjects commented that even though they knew the interviewer was a professor in a particular position in the university, they viewed him as just an ordinary person upon entering the room and seeing him. Further evidence for the minimizing effect of the status of the interviewer in the behavioural situation can be seen from the small absolute differences in perceived status scores on the post-experiment questionnaire for same versus higher status conditions. Even though an analysis of variance revealed significant differences in perceived status between the two conditions, absolute differences scores were not large and a number of subjects perceived higher status individuals as equivalent in status to themselves.

Another possible explanation for this finding is that the choice of subjects may have counteracted an optimal status differential between

student and professor, in that even though students are less educated and in a less powerful or authoritative position than the "professor" confederates, by virtue of their being college students, they are still able to aspire to one day be professors (or status equivalents) themselves. This is notably and qualitatively different from the status differential apparent in, for example, a professor versus support staff comparison. Also, a greater variation in personal space preferences with respect to status differences may have been obtained had only those subjects who responded in an extreme manner to the post-experiment question (concerned with the perceived status of the professor confederate relative to themselves) been included in the study.

The effect of status differences on personal space is thus more likely to occur in situations in which there is awareness that personal space is being measured (the schematic measure, for example) since this provides the opportunity to think about the type of response that is most appropriate. Also, the lack of significant differences in personal space for the status variable on the behavioural measure suggests that status as a predictor of personal space may be consistently operative only under conditions of clearly delineated status differences such as bureaucratic organizations (the military or industry).

A significant sex of interviewer x status of interviewer interaction effect on the behavioural measure of personal space, for the total group only, revealed that significantly greater personal space was found to be preferred with higher status male versus female interviewers. There is no reason to believe that male and female interviewers of higher status are

perceived as different in status from each other. However, it can be speculated that, in an in vivo situation, subjects are unaware of the manner in which they perceive the relative status of the sexes even though this tendency may be revealed in their nonverbal behaviour. Nonverbal behaviour, in an in vivo situation, then, can be seen as useful in providing information about one's attitudes of which one is unaware and thus over which less control is maintained.

Hypothesis 3. Hypothesis 3 predicted differences among sex role categories and more specifically between sex-typed and androgynous individuals in personal space preferences. The lack of significant findings for either condition was surprising, given the close to significant and significant results for the main effect of sex role in the pilot study. However, even in studies of sex differences in personal space, an example of which is the pilot study previously reported, differences between actual sex of subjects in personal space preferences are often not significant, though when the sex of the object person is considered, or specific conditions are introduced, significant results are revealed. This argument was, in fact, used by Leibman (Chapter I, pp. 23-24) who concluded that social norms regarding distancing behaviour become important only under specified conditions. It can thus be said that the effect of sex role development, as discussed from the viewpoint of Rebecca et al. (Stage II: sex-typed versus Stage III: androgynous), or in terms of general sex role categories offered by the Bem Sex Role Inventory, should not be studied in isolation in the investigation of nonverbal behaviour.

Hypothesis 4. Hypothesis 4 predicted a sex role of subject x sex of interviewer interaction effect on both the subgroup of androgynous and feminine females and the total group of subjects representing all four sex role categories. As noted previously, for both groups, results were nonsignificant. The hypothesis with respect to the subgroup was developed from the Rebecca et al. model of sex role transcendence which argues for the higher perceived status of the male relative to the female at Stage II of sex role development (femininity) and the perceived equality of the sexes at Stage III of sex role development (androgyny) translated into personal space terms (Chapter I, pp. 29-31). For the behavioural measure, a perceived status check was available and revealed no significant differences between androgynous and feminine subjects in how the respective status of the sexes was viewed. In fact, for the behavioural measure, subjects across both sex role categories perceived the status of the male interviewer as significantly higher than that of the female interviewer, and, consistent with this, maintained significantly greater distance from the male versus the female. These results appear to be inconsistent with the Rebecca et al. model in that androgynous individuals have been viewed as having transcended traditional sex roles and as not discriminating on the basis of sex. It thus appears that androgynous females, even though they are less restricted to "sex-appropriate" behaviour than feminine females, still perceive the relative status of the sexes in a traditional manner on both verbal and nonverbal dimensions.

When the interaction effect of sex role of subject and sex of interviewer on the perceived status of the interviewer was investigated

for the total group, however, a significant effect was uncovered. The difference had not been uncovered in the testing of the hypothesis on the subgroup because differences were found not between feminine and androgynous females but between feminine and androgynous versus masculine and undifferentiated females. Feminine and androgynous females, unlike masculine and undifferentiated females, perceived the status of the male interviewer as higher than the female interviewer. Further analysis in which the masculine and feminine scale scores comprising the sex role categories were analyzed separately revealed that the Femininity scale score and not the actual sex role category or particular combination of Femininity and Masculinity scale scores was the key factor in determining the perceived status of the interviewer (See Chapter IV, pp. 95, 105). High Femininity in females led to the perception of male interviewers as higher in status than female interviewers. High feminine females perceived male interviewers as higher in status and female interviewers as lower in status than low feminine females did. Feminine and androgynous females, because they both have high Femininity scale scores, react in a similar manner in this situation. It can thus be said that high feminine females perceive female others as lower in status than male others, and view the status of males as higher and the status of females as lower, than if they did not ascribe to feminine characteristics. Despite these differences in status perception, no concomitant significant distance preferences were found, offering little evidence for the effect of status, as defined in the present study, on personal space.

Hypothesis 5. Hypothesis 5 predicted that a sex role of subject x sex of interviewer x status of interviewer interaction effect would be found on both the subgroup of androgynous and feminine females and the total group of subjects. For the subgroup, it was predicted that, in terms of personal space, feminine females would ascribe less variation in status to females of the same versus higher status as compared to males of the same versus higher status, unlike androgynous females who would respond to the actual status of the other regardless of the other's sex. In short, it was predicted that feminine females would tend not to accept the higher status of the female interviewer in terms of personal space preferences. Significant results were found for the behavioural measure only and, for the subgroup, in the reverse direction of expectation. Findings for the total group were along similar lines.

The sex role of subject x sex of interviewer x status of interviewer interaction effect on the perceived status of the interviewer for the subgroup was nonsignificant, thus failing to confirm the Rebecca et al. model with respect to perceived status. This also revealed that the relative status of the interviewer as perceived by the subject does not relate to the variation in distance preference for these conditions in the expected manner. Differences in perceived status of the interviewer for the total group were nonsignificant as well.

To speculate, androgynous females, rather than perceiving the sexes in more egalitarian terms, may be more wary of higher status males and so choose to remain much further from this group than any other. The greater wariness of the androgynous female in this situation may be a result of her greater awareness of and dislike of sex discrimination and her greater awareness of the threat of aversive consequences from a higher status male.

In view of this, an investigation of differential attitudes toward interviewers in different conditions might be a valuable addition to the present study.

Another possible explanation for the relatively small distance preferences of feminine individuals versus androgynous individuals in interaction with higher status males is the possible relatively greater compliance of the feminine individual. When told to "pull up a chair" by a higher status male, the feminine individual may comply much more readily than the androgynous individual who is more independent and possibly less anxious to please in this situation. This may have implications for the type of seating directions that would be appropriate in future studies of the effects of sex role on personal space. Directions that would minimize the need to comply yet allow sufficient variation in seating choice would be the factors to consider in choosing seating directions. One possible solution to this difficulty, though with its own limitations, is to provide a number of seats at different distances and to request the subject to "take a seat".

The findings that the androgynous subjects were more comfortable and at ease than the feminine subjects in the interview situation and particularly more at ease when interviewed by a higher status person, may account for the greater constriction (less variation) in distance preferences for feminine versus androgynous females in interaction with male versus female higher status interviewers. In addition, the androgynous subject's preference for smaller distance with same status males versus females may be accounted for by the androgynous subject's possible greater identification with same status males versus females or

more ready acceptance of same status males because of egalitarian aspirations. The feminine subject's preferences for smaller distance with same status females versus males may be accounted for by her greater identification with same status females versus males.

Further analysis in which the Masculinity and Femininity scale scores comprising the sex role categories were analyzed separately in investigating the interaction effect of sex role of subject x sex of interviewer x status of interviewer on behavioural distance, revealed a significant effect for the Masculinity Scale score x sex of interviewer x status of interviewer interaction (Chapter IV, pp. 139-140). Possibly the high Masculinity female, unlike the low Masculinity female, feels threatened by the higher status male interviewer because her own greater aggressiveness increases the possibility of a clash with this object person, which is then translated into nonverbal behaviour in the form of greater distance preferences as a compensating mechanism. This result and the nonsignificant effect of the three-way interaction of the Femininity scale score of subject x sex of interviewer x status of interviewer on distance argue for the relative importance of the Masculinity scale score of the Bem Sex Role Inventory in determining personal space preferences.

The maintenance of greater distance from males versus females across the sex of subject variable and the higher perceived status of males versus females appears well established. This appears discouraging from the point of view of Rebecca et al.'s model in that androgynous individuals, according to the Rebecca et al. model, should have transcended discrimination on the basis of sex. The Rebecca et al. model of sex role

transcendence appears to apply to the issue of relative perceived status of the sexes only in part, in that, if one ascribes to feminine characteristics, one views males as having higher status than females. This fits with the predictions on perceived status for feminine subjects but because androgynous subjects ascribe to feminine characteristics as well, they, as previously noted, do not see the sexes as equal either. Masculine and undifferentiated subjects, on the other hand, do not discriminate between the sexes in terms of status, but, because of a possible lesser sensitivity, may not be perceiving the situation as it really is. A tentative conclusion is that if one has feminine characteristics, one sees males as having higher status than females and the androgynous individual, possessing this insight and masculine assertiveness, can possibly take the initiative necessary to bring about the desired reductions in sexual discrimination.

The Rebecca et al. model, calling for a lack of discrimination on the basis of sex at Stage III, may still be appropriate but perhaps the individual who falls in the androgynous sex role category is not yet at Stage III of sex role transcendence and this will only come about after sex roles and sex role personality characteristics have diminished sufficiently to allow females to be perceived as equal in status to males rather than just as potential equals.

Alternatively, the concept of sex role transcendence as developed by Rebecca et al. may only remain an appropriate model for understanding the relative status of the sexes if it is modified somewhat. Though it was assumed that androgynous individuals would not discriminate on the basis of sex, it was speculated, based on findings, that, in fact, androgynous and

feminine individuals were more aware of sex discrimination and the relative status of the sexes than masculine individuals. Further, only androgynous individuals ascribed a much greater increase in status to males in terms of personal space when actual status was increased. Thus, there appears to be greater congruence between verbal and nonverbal behaviour for androgynous individuals than for either feminine or masculine individuals. The masculine, feminine, and androgynous sex role categories, from the point of view of the Rebecca et al. model, may, therefore, be seen as steps along the way towards a true lack of discrimination on the basis of sex, with feminine individuals admitting to sex discrimination verbally, masculine individuals not admitting to sex discrimination and androgynous individuals admitting to sex discrimination both verbally and nonverbally. A fourth stage of sex role transcendence could thus be hypothesized in which one perceives the relative status of the sexes as equal both verbally and nonverbally. Though this stage may be unattainable in our present society, androgyny would, from this point of view, be seen as a transitional stage at which there is a heightened awareness of sex role discrimination both verbally and nonverbally and through which it is necessary to pass in order to ultimately obtain a true merging of sex roles. Androgyny thus becomes a pivot point rather than an end point in the development of sex role transcendence. Masculinity and Femininity can thus be seen as steps along the way to this pivot point.

Society is still at a stage in the sex role evolution process in which the male is generally seen as higher in status than the female. However,

individuals at different stages of sex role development differ in their perceptions of the relative status of the sexes as represented in their verbal and nonverbal behaviour. Only the individual in the most evolved sex role category manifests this perception both verbally and nonverbally. The present thesis has thus shown that the study of the nonverbal manifestation of discrimination on the basis of sex is an integral component of any study of sex role development. Findings also argue for the importance of tapping verbal as well as nonverbal behaviour in any study of personal space. Regardless of the particular approach taken in future studies in these areas, the greater awareness of nonverbal components of sex role discrimination and the concomitant evolution toward sex role equalization must be considered.

Summary and Conclusions

The present study was designed to investigate the functional relationship between the three independent variables of sex role categories of subjects and the sex and the status of others with whom they interact and the dependent variable of personal space. The key aspect of personal space investigated was the distance preferred by individuals in interaction with specified others.

As a basic assumption, it was accepted that a close correspondence exists between social orders and spatial orders as evidenced from the findings of dominance and territoriality studies of animals. It has also

been empirically demonstrated that personal space in humans has been influenced by demographic, personality, and affinity variables. It was thus assumed that personal space could be viewed as a means of nonverbally transmitting such information between and among individuals.

Research suggested that the smaller personal space of females is a reflection of their lower status. It has also been suggested that discrimination of the sexes is perpetuated by nonverbal behaviour. Research carried out in the area of sex differences in personal space has emphasized that differential distance preferences of the sexes are a result of differential sex role learning and socialization processes. It has also been argued that biological factors play a minimal role in determining differences in sex role between the sexes. With the present day trends toward equality of the sexes and less defined and more flexible sex roles, it was anticipated that differences in the way individuals behave nonverbally (for example, in terms of distancing behaviour) may be related to where individuals place themselves on the sex role spectrum. The Rebecca et al. model of sex role transcendence, which argues for a view of sex role as a developmental process in which individuals move through an initial diffuse stage, to a sex-typed stage (masculine or feminine), to a sex role transcendent stage (androgynous), ultimately leading to a non-discriminatory view of the sexes, was applied to the issue of nonverbal behaviour in order to investigate the following two major questions:

1. Are there differences between sex-typed (Stage II) versus androgynous (Stage III) individuals in terms of personal space preferences in interacting with males versus females?
2. Are there differences between sex-typed and androgynous individuals in terms of personal space

preferences when interacting with males versus females of varying status?

Other hypotheses were investigated which involved the study of the effect of sex role in isolation on personal space and the study of the full range of sex role categories made available by the particular instrument used. Replication hypotheses were also investigated involving the effect of sex of the other and status of the other on personal space.

Two methods of measuring personal space were used, a behavioural measure of which the subject was unaware which involved a personal interview, and a schematic measure, adapted from Duke and Nowicki's (1972) Comfortable Interpersonal Distance Scale.

Initial testing, carried out in class, involved the administration of the Bem Sex Role Inventory in order to classify subjects into one of the four sex role categories (masculine, feminine, androgynous, and undifferentiated). Female subjects were used from each category, 60 subjects were randomly chosen and assigned randomly to one of four status, sex of other conditions. Each subject then participated in an interview with one of six confederates who played the role of either another student or professor. In a briefing session, each subject was led to believe that the purpose of the interview was to discuss and evaluate her high school counselling program the aim of which was to eventually improve the provision of services at this level. For the interview, subjects were required to enter a room where the interviewer was already seated and "pull up a chair". This was followed by a post-experiment questionnaire to obtain checks on the various manipulations.

After all subjects were seen for their individual interview, another experimenter returned to the same classes initially used and administered the schematic measure of personal space to all willing students. Each subject was provided with all sex and status of other conditions in a repeated measures design and only those subjects who had also participated in the behavioural measure of personal space were included in the data analysis.

Among the findings were that subjects preferred greater distances with male versus female interviewers as predicted, and generally viewed males as higher in status than females. On the schematic measure only, it was found that higher status others were afforded greater distances. No significant differences were found for the main effect of sex role of subject on distance. The two-way interaction effects of sex role of subject x sex of interviewer on distance were not significant. For the subgroup this indicated that the Rebecca et al. model of sex role transcendence could not be readily applied to the relative perceived status of the sexes or to nonverbal behaviour. For the total group, it was found that feminine and androgynous females, unlike masculine and undifferentiated females, perceived the status of the male interviewer as higher than that of the female interviewer. Further analysis revealed that it was the presence of high Femininity in the feminine and androgynous subjects that produced this perception, implying that self-ascribed feminine characteristics and egalitarian views of the sexes are mutually exclusive. The three-way interaction effect of sex role of subject x sex of interviewer x status of interviewer on distance was significant but in the reverse direction of what had been predicted for both the subject and the total group. It was

revealed that differences were due to the androgynous category primarily. Further analysis revealed that the Masculinity scale rather than the Femininity scale contributed to these results. A check on the relative perceived status of the various sex/status of interviewer conditions, revealed no significant differences. It was speculated that androgynous subjects were more wary of higher status males because of a possible greater awareness of status differences between sexes and the discrimination of the sexes than other sex role groups, and thus preferred to "keep away" from the higher status male interviewers relative to other groups.

Other personal space dependent measures involving angle of orientation and body lean revealed no significant effects for the subgroup of androgynous and feminine subjects. Correspondence between the behavioural and schematic measures of personal space was low. The generally low correlations between the two measures reflect the differences between what subjects actually do versus what they do on paper.

Results suggest that the more "in vivo" measure of personal space is the more powerful (in this case, the behavioural as opposed to the schematic measure), that status differential should be maximized by careful choice of subject pool, and that sex role should not be studied in isolation. It is also suggested that the Rebecca et al. model be modified in anticipation of a fourth stage, one of undifferentiated sex roles and equality of the sexes and that verbal as well as nonverbal behaviour be studied in any investigation of personal space behaviour or sex role development.

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APPENDIX 1

Pilot Study

1-A

PART 1: Introduction and Class Administration of Questionnaire Package

My name is Irwin Pencer. I am presently doing research for my doctorate in psychology. The present study proposes to investigate the relationship between personality characteristics, status and the distances individuals prefer to maintain when interacting with each other.

The first part of the study involves three exercises which can be done on a group basis right here in class. Total time for completion of this task is 30-40 minutes. Participation is on a purely voluntary basis. Though your name will be requested it is solely for clerical purposes. Confidentiality is assured. A time can be arranged for feedback regarding the nature of the study and this may provide interesting insights about yourself and how you perceive others.

Volunteers are also requested to carry out a task at a later date on an individual basis for the second part of the study. Total time for completion of this task will be 15 minutes. Though I hope you will be able to participate in both parts of the study, participation in one part does not mean you have to participate in the other.

Professor _____ has allowed me some time with you today to provide you with the opportunity to participate in this study. I will pass around copies of booklets each of which contains three exercises which make up the first part of this study. These exercises may be completed right now over the next 30 minutes or so. Are there any questions?

(Questionnaire package is handed out.)

Directions are self-explanatory. Read the brief introduction and then go ahead and complete the exercises.

(After subjects have completed the questionnaire package, the following instructions are given.)

I will now pass around a sheet of paper on which I would like you to indicate the most convenient time and day for you to participate in the second part of the study by placing your name and telephone number in the appropriate spot. As indicated on this sheet, rooms have been reserved for Monday, Tuesday, Thursday and Friday, July 17, 18, 20, 21, 1978, at the Child Study Centre, 10 McDougall Lane which is situated across from the Unicentre. I will be meeting people in the lobby of the Child Study Centre at the designated time and will be contacting you by telephone to confirm the day and time a couple of days in advance.

Are there any questions?

Thank you for your co-operation.

Part 2: Questionnaire Package

Section 1: Subjective Status Hierarchy.

This study proposes to investigate the relationship between personality characteristics, status and the distances individuals prefer to maintain when interacting with each other. Total time for completion of this exercise is approximately 40 minutes.

Your co-operation is much appreciated.

Status, for purposes of this study, is defined as the extent of influence, amount of power and degree of authority of one individual over another. A status hierarchy is a listing of the various individuals which can be found in an organization in order of decreasing status level. For example, in a large corporation a list might be as follows:

President
Vice-President
General Manager
Sales Manager
Salesperson
Secretary
Office Clerk

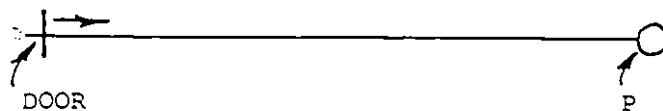
1. Please list, under the heading STATUS HIERARCHY, the various individuals who can be found in a university environment in order of decreasing status level. Include as many levels as you can.

STATUS HIERARCHY

2. Indicate whom you consider to be the same status as you.

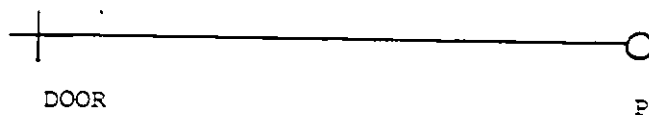
Section 2: Schematic Measure of Personal Space

On each of the following 6 pages you will be presented with a diagram (see sample below) which consists of a straight line joining a bar and a circle. The bar represents a door, the circle represents a person. On each of the 6 pages you will be presented with a different situation. In each case you will be asked to imagine that you are entering a room through a doorway (labelled door) and approaching a stationary person (labelled P) who will be standing in the room facing you. You will be asked to make a mark on the line leading from the door to the person to indicate the point at which you think you might begin to feel uncomfortable with this person's closeness.

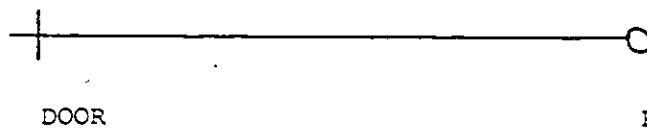


Please turn to the next page and begin.

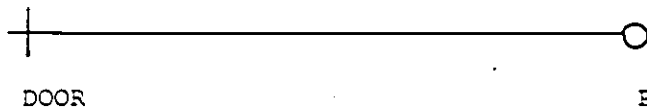
Imagine that you are entering a room through a doorway (labelled door) and approaching a stationary person (labelled P) who is standing in the room to whom you wish to be very close. Imagine this person to be facing you. Make a mark on the line leading from the door to the person to indicate the point at which you think you might begin to feel uncomfortable with this person's closeness.



Imagine that you are entering a room through a doorway (labelled door) and approaching a stationary person (labelled P) who is standing in the room from whom you wish to stay very far away. Imagine this person to be facing you. Make a mark on the line leading from the door to the person to indicate the point at which you think you might begin to feel uncomfortable with this person's closeness.



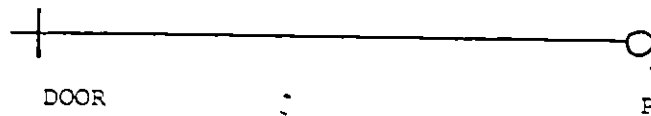
Imagine that you are entering a room through a doorway (labelled door) and approaching a stationary male stranger of the same status as you (labelled P) who is standing in the room. Imagine this person to be facing you. Make a mark on the line leading from the door to the person to indicate the point at which you think you might begin to feel uncomfortable with his closeness.



Imagine that you are entering a room through a doorway (labelled door) and approaching a stationary female stranger of higher status than you (labelled P) who is standing in the room. Imagine this person to be facing you. Make a mark on the line leading from the door to the person to indicate the point at which you think you might begin to feel uncomfortable with her closeness.



Imagine that you are entering a room through a doorway (labelled door) and approaching a stationary female stranger of the same status as you (labelled P) who is standing in the room. Imagine this person to be facing you. Make a mark on the line leading from the door to the person to indicate the point at which you think you might begin to feel uncomfortable with her closeness.



Imagine that you are entering a room through a doorway (labelled door) and approaching a stationary male stranger of higher status than you (labelled P) who is standing in the room. Imagine this person to be facing you. Make a mark on the line leading from the door to the person to indicate the point at which you think you might begin to feel uncomfortable with his closeness.



Section 3: Bem Sex Role Inventory

Full Name _____

(Please print)

Age: _____ Sex: M F Year in University: _____

Native Language: _____ Telephone: _____ (If you have no phone, please give us some way of contacting you, e.g., your address:)

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

Example: sly

Mark the 1 if it is NEVER OR ALMOST NEVER TRUE that you are sly.Mark the 2 if it is USUALLY NOT TRUE that you are sly.Mark the 3 if it is SOMETIMES BUT INFREQUENTLY TRUE that you are sly.Mark the 4 if it is OCCASIONALLY TRUE that you are sly.Mark the 5 if it is OFTEN TRUE that you are sly.Mark the 6 if it is USUALLY TRUE that you are sly.Mark the 7 if it is ALWAYS OR ALMOST ALWAYS TRUE that you are sly.

Thus, if you feel it is sometimes but infrequently true that you are "sly",
never or almost never true that you are "malicious", always or almost always true

that you are "irresponsible", and often true that you are "carefree", then you would rate these characteristics by marking the appropriate number on the computer answer sheet as follows:

sly Mark the 3
malicious Mark the 1
irresponsible Mark the 7
carefree Mark the 5

Please turn to the next page and begin.

1	2	3	4	5	6	7
NEVER OR ALMOST NEVER TRUE	USUALLY NOT TRUE	SOMETIMES BUT INFREQUENTLY TRUE	OCCASIONALLY TRUE	OFTEN TRUE	USUALLY TRUE	ALWAYS OR ALMOST ALWAYS TRUE
1. Self reliant		21. Reliable		41. Warm		
2. Yielding		22. Analytical		42. Solemn		
3. Helpful		23. Sympathetic		43. Willing to take a stand		
4. Defends own beliefs		24. Jealous		44. Tender		
5. Cheerful		25. Has leadership abilities		45. Friendly		
6. Moody		26. Sensitive to the needs of others		46. Aggressive		
7. Independent		27. Truthful		47. Gullible		
8. Shy		28. Willing to take risks		48. Inefficient		
9. Conscientious		29. Understanding		49. Acts as a leader		
10. Athletic		30. Secretive		50. Childlike		
11. Affectionate		31. Makes decisions easily		51. Adaptable		
12. Theatrical		32. Compassionate		52. Individualistic		
13. Assertive		33. Sincere		53. Does not use harsh language		
14. Flatterable		34. Self-sufficient		54. Unsystematic		
15. Happy		35. Eager to soothe hurt feelings		55. Competitive		
16. Strong personality		36. Conceited		56. Loves children		
17. Loyal		37. Dominant		57. Tactful		
18. Unpredictable		38. Soft-spoken		58. Ambitious		
19. Forceful		39. Likable		59. Gentle		
20. Feminine		40. Masculine		60. Conventional		



NE RIEN INSCRIRE A GAUCHE DE CETTE LIGNE. UTILISER UN CRAYON A MINE 'HB'.

MAKE NO MARKS TO THE LEFT OF THIS LINE. USE AN 'HB' LEAD PENCIL.

1-B

Part 1: Instructions to Confederates

You will be conducting 5 minute interviews, 1 every 20 minutes, with university summer students. The students will each receive instructions that a committee of university professors has been formed at the University of Ottawa to investigate the status of the summer course program at the University of Ottawa and that the present study proposes to provide input to this committee regarding how students feel about the courses they are taking and in what ways these courses may be improved for next year. The students will be told that either a professor who is chairman of the program committee with extensive research experience in this area or a fellow summer student will be jotting down some of their ideas. They will then be escorted to the room and told to go in.

You will be sitting at your desk on your swivel chair reading a book (to be provided) when the subject enters. You will then turn to face the subject as he/she enters. Remain seated, feet flat on the floor, hands on arms of the chair, sit upright. Gesture toward a chair situated just inside the door and say: "Pull up a chair". Your face should have a neutral expression and avoid eye contact until the subject is seated.

When the subject is seated introduce yourself as follows:

Situation A: Hello, I'm Professor _____. I'm the chairman of the Summer Course Program Committee and am interested in your impressions about the summer programs at the University of Ottawa.

Situation B: Hello, I'm _____, a summer student at the University of Ottawa and I've agreed to take notes on your impressions for the Summer Course Program Committee.

During the interview take real notes of what the subject is saying using a clipboard (clipboard, paper, pen will be provided). Also note predominant body lean and distance using whatever cues are available just in case the chair is moved by the subject. After 5 minutes or so terminate the interview giving thanks and indicating to the subject that he/she should return to the room where he had met with the experimenter.

You will be provided with a sheet of paper on which will be listed the subjects' names. This will be kept under a book during the interview. After the subject leaves you will take 3 measures and tabulate them:

1. Measure the distance between the centre fronts of the chairs and tabulate it.
2. Measure the distance between your chair's left and your subject's chair's right leg and tabulate it.
3. Measure the distance between your chair's right and your subject's chair's left leg and tabulate it. (2.-3.) provides a measure of the chair's orientation and is referred to as the relative position measure.
4. Tabulate the predominant body lean (forward, upright, backward).

Return paper underneath the book. Remove tape measure from view. Return the subject's chair to the standardized position just inside the door. Resume reading posture and await the next subject.

Dress for professor confederates should be fairly formal: jacket and tie for men, dress for women. For summer student confederates, jeans, casual jersey, shirt or blouse, sandals are appropriate.

I-B

Part 2: Table or Measurements

NAME

Distance from
centre fronts
of chairsDistance from
your chair's
left leg to
subject's chair's
right legDistance from
your chair's
right leg to
subject's chair's
left leg.Body
Lean
(F, U, or
B).

1-B

Part 3: Post-Experiment Questionnaire

1. Did you see the interviewer as the same, higher or lower in status than you?
2. Did your impressions regarding the status of your interviewer change from pre- to post- interview?
3. Do you have any ideas as to any unstated purpose of the interview?
4. Are there any comments regarding the study as a whole?

. 1-C

Part 1: Bem Sex Role Inventory

Traditional tests of masculinity-femininity are based on the assumption that masculinity and femininity are bipolar opposites on a unidimensional continuum. Thus, if one is high in masculinity, of necessity, one is low in femininity (Constantinople, 1973). Constantinople stated further that the ability of the item to distinguish between the biological sex, and not its relevance to sex role concepts, was sufficient for inclusion of such an item on an M-F scale, that one set of items was used to measure both masculinity and femininity, and that an algebraic sum of responses determined whether an individual was masculine or feminine without any theoretical basis.

In response to this rather limiting view of the concept of M-F, Bem (1974) and others such as Heilbrun (1976), Spence, Helmreich, and Stapp (1975), and Berzins, Welling, and Wetter as cited by Kelly and Worell (1977), developed new sex role inventories. A critical review of the contemporary M-F tests, including the Bem Sex Role Inventory, and a study of the consistency across tests, can be found in Kelly and Worell (1977) and Kelly, Furman, and Young (1978) respectively.

Kelly and Worell stated the assumptions involved in the development of these contemporary tests of M-F. Masculinity and femininity are seen as separately distributed and orthogonal. Persons of either sex can thus be seen as high or low on each dimension. This allows for the existence of an androgynous category, that is, an individual who endorses both masculine and feminine

characteristics. Second, sex roles are given a sociocultural definition in terms of the expressive (feminine) - instrumental (masculine) distinction (Johnson, 1963; Parsons & Bales, 1955), outer versus inner space (Erikson, 1964), allocentrism versus autocentrism (Gutman, 1965), and field dependence versus field independence (Witkin, 1974). In the case of the androgynous person, the expressive and instrumental characteristics coexist. Third, sex-typing is seen as based on internalization of standards of desirable behaviour for males and females. Fourth, "response repertoire" (p. 1102) and degree of behavioural flexibility are determined by one's inclusion in a particular sex role category. Research carried out by Bem (1975), Bem and Lenney (1976), and Bem, Martyna, and Watson (1976) has demonstrated that one's sex role, as obtained on a test such as Bem's, can, in fact, predict behaviour. Essentially this research demonstrated that androgynous individuals, having the response repertoire of both masculine and feminine typed individuals, are behaviourally more flexible or adaptable than others, that is, they are capable of responding to a situation based on its demands rather than what is dictated by stereotyped sex roles. This finding is consistent with the model of sex role transcendence developed by Rebecca et al. (1976).

The concept of behavioural flexibility deserves elaboration. Bem (1974), having developed the Bem Sex Role Inventory, launched a series of studies to investigate the behavioural flexibility of the various categories of individuals obtained by her measure (Bem, 1975; Bem & Lenney, 1976; Bem, Martyna & Watson, 1976).

In the study by Bem and Lenney, 24 sex-typed, 24 androgynous, and 24 sex-reversed introductory psychology students of each sex were asked to perform activities which differed in their sex role connotations and were offered greater payment for participating in cross-sex behaviour. In support of the behavioural flexibility hypothesis, sex-typed subjects were significantly more stereotyped in their choices than androgynous or sex-reversed subjects, the latter two of whom did not differ significantly from each other. Bem (1975) attempted to demonstrate whether this hypothesis held for the domains of expressiveness versus instrumentality or communion versus agency. Activities were devised to tap masculine independence and feminine nurturance. In the first part of the study, which consisted of 9 masculine, 9 feminine and 9 androgynous introductory psychology students of each sex, masculine and androgynous subjects were found to be significantly more independent than feminine subjects in a conformity task and masculine and androgynous subjects did not differ significantly from each other. In the second part of the study consisting of 11 masculine, 11 feminine and 11 androgynous introductory psychology students of each sex, feminine and androgynous men were found to be significantly more nurturant toward a kitten than masculine men and feminine and androgynous men did not differ significantly from each other. Feminine and androgynous women, however, were not significantly more responsive to the kitten than masculine women. In fact, feminine women were found to show significantly less overall involvement with the kitten than androgynous women. In the first part of a study of nurturance, Bem, Martyna and Watson, studied 14 masculine, 14 feminine, and 14 androgynous introductory psychology students of each sex and found that

feminine and androgynous subjects were significantly more nurturant toward a baby than masculine subjects and that feminine and androgynous subjects did not differ significantly from each other. In the second part of the study of nurturance carried out by Bem, Martyna and Watson, where nurturance was assessed by the extent to which the subject was seen as a good listener in an interaction with a lonely student, and 14 masculine, 14 feminine and 14 androgynous introductory psychology students of each sex were studied, results indicated that masculine subjects were significantly less nurturant than feminine or androgynous subjects and feminine and androgynous subjects did not differ significantly from each other. Bem et al. concluded that low nurturance of feminine women, a finding in Bem's (1975) study, does not extend to humans. These studies thus served to demonstrate the effect of one's self-ascribed masculine and feminine characteristics on one's behavioural repertoire.

Other research carried out in the area of sex role using contemporary tests of M-F have uncovered relationships between sex role and such variables as self-esteem (Bem, 1977; Spence et al., 1975; Wetter, as cited by Kelly & Worell), feminism (Bem, 1977), personality characteristics (Berzins, as cited by Kelly & Worell), autobiographical variables (Helmreich, Wilhelm, & Stapp, 1975; Woods, as cited by Kelly & Worell), and parent practices (Kelly & Worell, 1976).

The Bem Sex Role Inventory, developed by Bem (1974), consists of separate scales of Masculinity and Femininity and a set of neutral items described as a Social Desirability Index. Each scale consists of 20 items. Subjects respond by indicating on a 7-point scale ranging from "never or almost never true" to "always or almost always true" the degree to which each personality characteristic

applies to them. The Bem Sex Role Inventory items had first been chosen from a pool of personality characteristics that "seemed ... positive in value and either masculine or feminine in tone" (Bem, 1974, p. 156). College student judges then rated them on the basis of desirability of each characteristic for either an American man or woman. Included in the Masculinity and Femininity scale were those items that were found to be significantly more desirable for males than females and for females than males respectively. Based on the original scoring system developed by Bem (1974), subjects were assigned three scores: Masculinity, Femininity, and Androgyny. The first two scores were a mean self-rating for the Masculinity and Femininity items respectively, the Androgyny score was defined as Student's t ratio for the difference between a person's Masculinity and Femininity self-endorsement. Masculinity and Femininity scores were found to be uncorrelated, arguing for empirical as well as logical independence of the two dimensions. This was supported by Gaudreau (1977) in a factor analysis of the Bem Sex Role Inventory. Low correlations between Androgyny and Social Desirability suggest Androgyny is not just measuring a general tendency to respond in a socially desirable direction. Low to moderate correlations of the Bem Sex Role Inventory with the M-F scales of the Guilford-Zimmerman Temperament Survey (Guilford & Zimmerman, 1949) and the California Personality Inventory (Gough, 1957), both traditional sex role measures, suggest that the Bem Sex Role Inventory is measuring an aspect of sex role not tapped by these two scales.

Bem's original method of determining the Androgyny score was eventually challenged by other investigators (Baucom, 1976; Spence et al., 1975;

Strahan, 1975; Berzins et al. as cited by Kelly & Worell) since it could lead to a classification of Androgyny regardless of absolute levels of masculine and feminine personality endorsement. A more rigorous method of sex role classification was in use in the Personal Attributes Questionnaire developed by Spence et al. This essentially involved a median split based on the four possible combinations of Masculinity and Femininity scores and led to the following categories: masculine - high Masculinity, low Femininity; feminine - low Masculinity, High Femininity; androgynous - high Masculinity, high Femininity; undifferentiated - low Masculinity, low Femininity. By Bem's original method, undifferentiated individuals fell into the androgynous category. Bem (1977), in response to this criticism, revised her scoring system to the median split method and it is this system that has been used in the present study. For further information regarding the computer set-up for this scoring procedure, the reader is referred to the Scoring Packet: Bem Sex Role Inventory, Bem (Note 5). A further publication on the Bem Sex Role Inventory (Bem, Note 6) will contain information on norms, including separate norms for males and females, and reliability and validity studies based on the revised scoring system.

1-C

Part 2: Comfortable Interpersonal Distance Scale

The Comfortable Interpersonal Distance Scale was described by its authors as a standardized, culture-free, group administerable measure of personal space that could be used across wide age ranges.

Measures of reliability were obtained by Duke and Nowicki (1972) in two studies. In the first study, 23 male and 21 female middle to upper middle socioeconomic class, introductory psychology freshmen were required to indicate, using the Comfortable Interpersonal Distance Scale, their preferred distance to strangers of the same and opposite sex. Test-retest reliability was obtained by repeating the procedure two weeks later. For males, the test-retest reliabilities were .86 for same sex stimulus and .75 for opposite sex stimulus; for females, the test-retest reliabilities were .84 for same sex stimulus and .85 for opposite sex stimulus.

In another study, 61 male and 41 female high school students and 67 male and 84 female elementary school students were administered the Comfortable Interpersonal Distance Scale. Same sex and opposite sex strangers were the stimuli used. Test-retest reliability was obtained by repeating the procedure four months later. For high school students, test-retest reliabilities were: males, same sex: .68; males, opposite sex: .79; females, same sex: .77; females, opposite sex: .83. For elementary school students, test-retest reliabilities were: males, same sex: .45; males, opposite sex: .40; females, same sex: .39; females, opposite sex: .52. The relatively lower correlations

found in younger children were explained in terms of developmental changes in personal space.

The Comfortable Interpersonal Distance Scale was also found to be free of social desirability.

Construct validation was studied by comparing scores obtained on the Comfortable Interpersonal Distance Scale to actual approach methods (Martin, 1972). Correlations ranging from .65 for same sex to .71 for opposite sex stimuli in 26 male and 25 female college students were found.

Other studies using the Comfortable Interpersonal Distance Scale and/or investigating the reliability and/or validity of this instrument have yielded similar results (Duke & Kiebach, 1974; Duke & Wilson, 1973; Duke, Shaheen, & Nowicki, 1974; Edwards, 1977; Hollender, Duke, & Nowicki, 1973; Petri et al., 1974; Sanders, 1976; Schafer & Higgins, 1976; Veitch et al., 1976).

APPENDIX 2

Main Study

2-A

Part 1: Introduction and Class Administration of the Bem Sex Role Inventory

My name is Irwin Pencer. I am presently doing research for my doctorate in psychology. My specific interest area is vocational and personal counselling.

This study proposes to investigate the relationship between personality characteristics and attitudes toward such counselling programs in secondary schools.

Research in this area has shown that secondary school students respond to different counselling approaches differently and that the effectiveness of counselling depends on the interaction between the particular approach taken by the counsellor and the personality characteristics of the student. One of the many criteria used in assessing the effectiveness of counselling is how the student feels about the counselling program as a whole. In view of this, the present study plans to look at student attitudes toward their secondary school counselling program in an attempt to find out what approaches are best with what type of students.

The only qualifications necessary to be able to participate in this study are that subjects be female and English-speaking. Subjects are not required to have had intensive involvement in their secondary school counselling programs since it has been found that one's impressions from even brief encounters have been valuable.

There are two parts to the present study. The first part involves a questionnaire that will be done right here in class. Total time for completion of the task will be approximately 15 minutes.

The second part of the study will involve a brief interview to obtain information on your attitudes toward counselling programs. This will be carried out on an individual basis outside of class at a later date (October or November) and further instructions will be given at that time. Total time for completion of this task will be 15 minutes as well. The majority of you will be eligible to participate in both parts of the study and those who qualify for the second part will be contacted by telephone. Those who do not qualify can rest assured that it is because the present study can only concern itself with a specified number of subjects.

Total time involved for the complete study will be 30 minutes. A time can be arranged for feedback to provide you with the results of the study. This may provide you with interesting insights about yourself and with reasons for your particular attitudes.

Participation is on a purely voluntary basis (though an arrangement has been made through the department to provide two marks for participation outside of class). Though your name will be requested it is solely for clerical purposes and confidentiality is assured. Your participation will help in the evaluation of existing counselling programs in secondary schools and in the development of more effective programs in the future.

Are there any questions?

I will now pass around the questionnaire booklet. Note that there are 4 pages in your booklet. Page 1 is for personal information and contains directions and examples. In the spaces provided, write your name, age, year in university and telephone number. If you have no telephone please indicate some way to contact you.

On the bottom right hand side of the page I would like you to respond to these 3 questions:

1. Which language do you speak most frequently?
2. In what country were you born?
3. If you were not born in Canada, how many years have you lived in Canada?

Page 2 contains the test items. The answer sheet is attached to the back of the booklet (page 4) and may be removed and reattached after you have finished. The questionnaire provides for 7 alternatives for each item. The answer sheet has place for 9 alternatives. Please ignore columns 8 and 9 and respond to each item by marking one of alternatives 1-7.

After you have completed the questionnaire, please fill in the times that you are free to participate in the second part of the study on the schedule sheet provided on page 3. Include Saturday and/or Sunday if these are convenient days. This will help me to arrange the meeting times for the second part of the study more efficiently. I will be contacting you by telephone over the next couple of weeks to set up the meeting place and time for the second part of the study. Thank you for your co-operation.

2-A

Part 2: Bem Sex Role Inventory

Full Name _____
 (please print)

Age _____ Year in University (e.g. First year) _____

Telephone _____ (If you have no phone, please give some way
 of contacting you, e.g. your address)

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

Example: sly

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

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

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

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

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

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

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

(over)

Thus, if you feel it is sometimes but infrequently true that you are "sly", never of almost never true that you are "malicious", always or almost always true that you are "irresponsible", and often true that you are "carefree", then you would rate these characteristics by marking the appropriate number on the computer answer sheet as follows:

sly	Mark the 3
malicious	Mark the 1
irresponsible	Mark the 7
carefree	Mark the 5

Please turn to the next page and begin.

1	2	3	4	5	6	7
NEVER OR ALMOST NEVER TRUE	USUALLY NOT TRUE	SOMETIMES BUT INFREQUENTLY TRUE	OCCASIONALLY TRUE	OFTEN TRUE	USUALLY TRUE	ALWAYS OR ALMOST ALWAYS TRUE
1. Self reliant		21. Reliable		41. Warm		
2. Yielding		22. Analytical		42. Solemn		
3. Helpful		23. Sympathetic		43. Willing to take a stand		
4. Defends own beliefs		24. Jealous		44. Tender		
5. Cheerful		25. Has leadership abilities		45. Friendly		
6. Moody		26. Sensitive to the needs of others		46. Aggressive		
7. Independent		27. Truthful		47. Gullible		
8. Shy		28. Willing to take risks		48. Inefficient		
9. Conscientious		29. Understanding		49. Acts as a leader		
10. Athletic		30. Secretive		50. Childlike		
11. Affectionate		31. Makes decisions easily		51. Adaptable		
12. Theatrical		32. Compassionate		52. Individualistic		
13. Assertive		33. Sincere		53. Does not use harsh language		
14. Flatterable		34. Self-sufficient		54. Unsystematic		
15. Happy		35. Eager to soothe hurt feelings		55. Competitive		
16. Strong personality		36. Conceited		56. Loves children		
17. Loyal		37. Dominant		57. Tactful		
18. Unpredictable		38. Soft-spoken		58. Ambitious		
19. Forceful		39. Likable		59. Gentle		
20. Feminine		40. Masculine		60. Conventional		



NE RIEN INSCRIRE A GAUCHE DE CETTE LIGNE. UTILISER UN CRAYON A MINE 'HB'.

MAKE NO MARKS TO THE LEFT OF THIS LINE. USE AN 'HB' LEAD PENCIL.

2-B

Part 1: Instructions to Confederates

You will be conducting 5 minute interviews, 1 every 15 minutes, with female university students, primarily introductory psychology and sociology students over a total period of approximately 2 days.

The subjects will have been told that a research group was initiated at the University of Ottawa to assess the value of high school counselling programs and that the present study is concerned with the relationship between personality characteristics of students and preferred type of counselling program in secondary schools in an attempt to find out what approaches are effective with what type of students. Subjects will be expecting a 5 minute interview with either another student who has agreed to jot down notes for the researcher or with a professor with extensive research experience in the counselling area. Each of you will be playing both roles.

As a student, dress should be casual: jeans, jersey, shirt or blouse, sandals are appropriate. As a professor, dress should be fairly formal: jacket and tie for men: dress, skirt and blouse for women. For female confederates, where makeup will further enhance their status, this should be worn. Remember, the impression you are able to give as either a student or professor is of key importance in determining the effectiveness of the status manipulation in this study.

Subjects will be expecting to discuss the perceived value of their school counselling program (e.g. how they were assisted in choosing a college curriculum, a potential career, assistance with personal problems) and to provide ideas regarding what types of approaches and facilities they would see as worthwhile. (Approaches refer to personal counselling versus vocational counselling emphasis, high school counsellor as therapist versus provider of information). Should the subject have difficulty initiating, ask questions such as:

What did you think of your high school counselling program?

What suggestions would you have if you were to set up a counselling program in a high school?

Some subjects may indicate that they never had a counselling department in their school or that it was so long ago they don't remember much about it. These individuals should be assured that what matters is the suggestions they might have regarding what approaches may be useful.

After an initial briefing session with the researcher, each subject will be escorted to the room, will knock and enter.

You will be sitting at your desk on your swivel chair reading a book (to be provided) when the subject enters. As the subject enters, you will turn to face the chair situated on the opposite wall. Remain seated, feet flat on the floor, hands on the arms of the chair, sit upright. Make brief eye contact with the subject and gesture toward the chair and say "Pull up a chair". Your face should have a neutral expression and avoid any further eye contact until the subject is seated.

When the subject is seated, introduce yourself as follows:

Situation A:

Hello, I'm Professor _____. I'm a professor in the Department of Psychology here at the University of Ottawa and am heading the present research team which is investigating the effectiveness of counselling program in high schools. I'm interested in your impressions about your high school counselling program and in any suggestions you might have about what approaches or facilities you see as potentially worthwhile in such an environment.

or

Hello, I'm Professor _____. I'm the Head of the Department of Counselling Psychology here at the University of Ottawa and am heading the present research team which is

or

Hello, I'm Professor _____. I'm Vice-Dean of the Faculty of Social Sciences here at the University of Ottawa and am heading the present research team which is

Situation B:

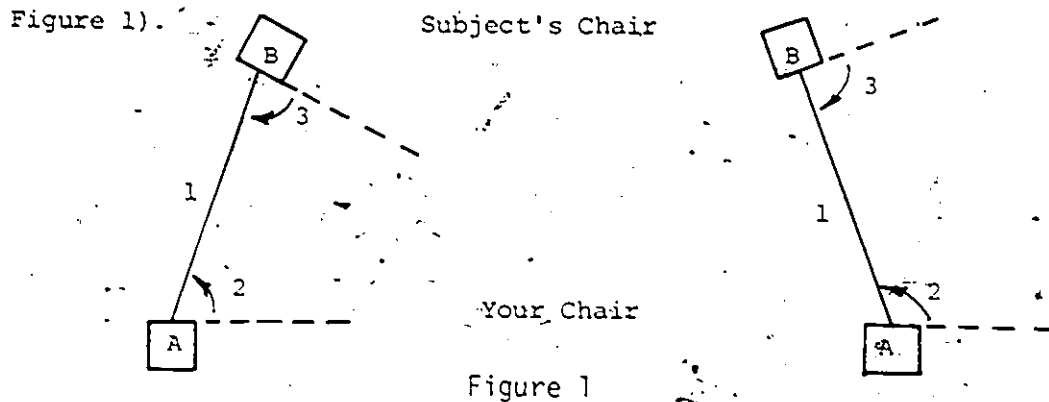
Hello, I'm _____, an undergraduate student at the University of Ottawa and I've agreed to take notes on your impressions about your high school counselling program and suggestions you might have about what approaches or facilities you see as potentially worthwhile in such an environment.

After your introduction, pick up the clipboard on the table and take real notes of what the subject is saying (clipboard, paper, pen will be provided). Also, note the predominant body lean and distance using whatever cues are available just in case the chair is moved by the subject prior to leaving. After no more than 5 minutes terminate the interview, giving thanks, and indicate to the subject to return to the room where she had previously been given the instructions.

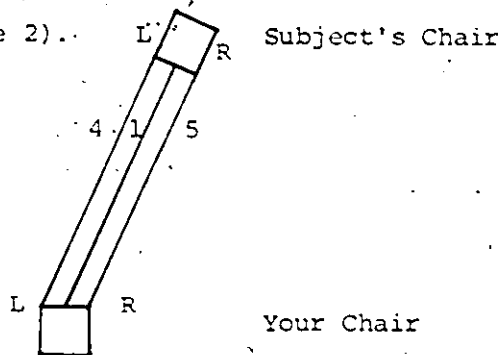
You will be provided with a sheet of paper with the subjects' names. This will be kept hidden from view (at the bottom of the clipboard). After the subject leaves, you will take the following 6 measures using a metric tape measure and protractor:

Use metric units.

1. Measure the distance between the centre fronts of the two chairs. Leave tape measure in position to serve as a guide for measures 2 & 3. (See Figure 1).



2. Place protractor at A. Measure angle indicated in Figure 1.
3. Place protractor at B. Measure angle indicated in Figure 1.
4. Measure the distance between your chair's left leg and subject's chair's right leg. (See Figure 2).



5. Measure the distance between your chair's right leg and subject's chair's left leg. (See Figure 2).
6. Note predominant body lean:
 - F - Forward
 - U - Upright
 - B - Backward

Measurements will be tabulated on a sheet such as the one attached (See Part II).
Once this is done, remove the sheet, tape measure and protractor from view.
Return the subject's chair to the standardized position and resume your reading
posture and await the next subject.

2-B

Part 3

Name	Distance from centre fronts of chairs (cm)	Angle formed by tape and C's chair	Angle formed by tape and S's chair	Distance from C's left to S's right leg	Distance from C's right to S's left leg	Body Lean
------	---	--	--	---	---	--------------

Post-Experiment Questionnaire

Oral Administration

3. Did your impressions regarding the status of the interviewer change from just before you entered the room, to right after entering, to the end of the interview?
4. Do you have any ideas about any unstated purpose of the interview?
5. Do you have any further comments regarding the study as a whole?

The following was said after completion of the post-experiment questionnaire:

Please don't discuss the experiment and post-experiment questionnaire with others because I'll be conducting many other interviews. Feedback about the study will be provided at a later date.

2-C

Part 1: Introduction and Class Administration
of the Schematic Personal Space Measure

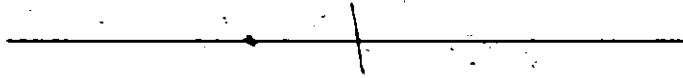
My name is Marcia Modlin and I'm a graduate student in psychology doing research in the area of personal space, an area of social psychology involved with the physical distances individuals maintain from each other when interacting under varying conditions. The present study proposes to obtain measurements of personal space preferences of people interacting under different conditions. Schematic diagrams representing possible real life interactions will be used. As a result of time limitations, only females will be studied.

You will be provided with a booklet which contains instructions, followed by a number of situations. You are requested to respond in terms of your own personal space preference for each of the situations provided. This exercise will be carried out in class and will take approximately 20 minutes. On the last page of the booklet is a post-experiment question for you to answer after completion of this task.

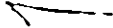
Once you obtain your booklet, please fill in your name, course name and name of your professor, read the instructions and begin. All responses will remain confidential. If you have any questions please let me know and I'll come over to discuss your concern. When you have completed the exercise and the post-experiment question, please return your booklet and pencil and then you may leave.

Thank you for your co-operation.

(Once all have received their booklets the following illustration is made on the blackboard with the following instructions:)



The line indicating the distance you prefer for each situation should be a single line crossing the other line rather than an X or a circle.



2-C

Part 2: Schematic Personal Space Measure

NAME: _____

COURSE: _____

PROFESSOR: _____

The present study is about personal space and is concerned with the distances individuals prefer to maintain when interacting with each other under different conditions.

On each of the following 10 pages you will be presented with a diagram (See Figure 1 below) which consists of a straight line joining a bar and a circle. The bar represents a door (labelled D), the circle represents a person (labelled A). On each of the 10 pages you will be presented with a different situation.

In each case you will be asked to imagine that you are entering a room through a doorway (labelled D) and approaching a stationary person (labelled A) who will be standing in the room and facing you as you enter. You will be asked to make a mark on the line (labelled DA), leading from the door to the person, to indicate the distance from the person you would find most comfortable for carrying on a conversation.

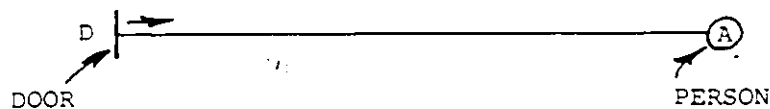


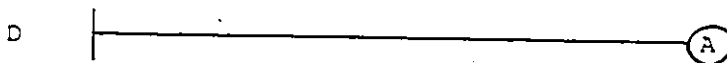
Figure 1

On the last page will be found a question to be answered after completion of the previously described task.

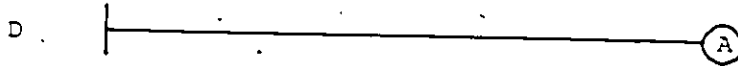
Your co-operation is much appreciated.

Please turn to the next page and begin.

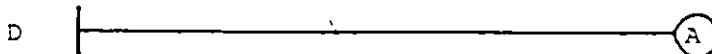
Imagine that you are entering a room through a doorway (labelled D) and approaching a stationary person (labelled A) to whom you wish to be very close. Imagine this person to be standing in the room and facing you as you enter. Make a mark on the line (labelled DA), leading from the door to the person, to indicate the distance from this person you would find most comfortable for carrying on a conversation.



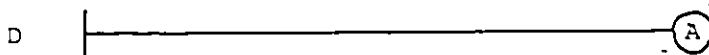
Imagine that you are entering a room through a doorway (labelled D) and approaching a stationary person (labelled A) from whom you wish to stay very far away. Imagine this person to be standing in the room and facing you as you enter. Make a mark on the line (labelled DA), leading from the door to the person, to indicate the distance from this person you would find most comfortable for carrying on a conversation.



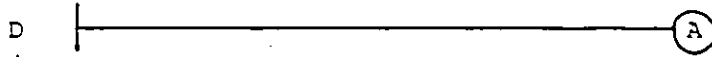
Imagine that you are entering a room through a doorway (labelled D) and approaching a stationary male stranger (labelled A) who is a Professor at the University of Ottawa. Imagine him to be standing in the room and facing you as you enter. Make a mark on the line (labelled DA), leading from the door to him, to indicate the distance from him you would find most comfortable for carrying on a conversation.



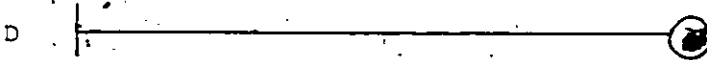
Imagine that you are entering a room through a doorway (labelled D) and approaching a stationary female stranger (labelled A) who is the Head of the Department of Psychology at the University of Ottawa. Imagine her to be standing in the room and facing you as you enter. Make a mark on the line (labelled DA), leading from the door to her, to indicate the distance from her you would find most comfortable for carrying on a conversation.



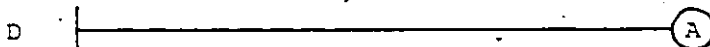
Imagine that you are entering a room through a doorway (labelled D) and approaching a stationary male stranger (labelled A) who is the Vice-Dean of the Faculty of Social Sciences at the University of Ottawa. Imagine him to be standing in the room and facing you as you enter. Make a mark on the line (labelled DA), leading from the door to him, to indicate the distance from him you would find most comfortable for carrying on a conversation.



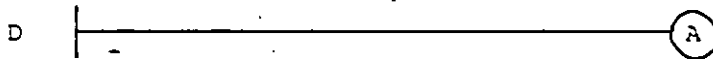
Imagine that you are entering a room through a doorway (labelled D) and approaching a stationary female stranger (labelled A) who is a first year undergraduate student at the University of Ottawa. Imagine her to be standing in the room and facing you as you enter. Make a mark on the line (labelled DA), leading from the door to her, to indicate the distance from her you would find most comfortable for carrying on a conversation.



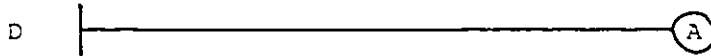
Imagine that you are entering a room through a doorway (labelled D) and approaching a stationary male stranger (labelled A) who is the Head of the Department of Psychology at the University of Ottawa. Imagine him to be standing in the room and facing you as you enter. Make a mark on the line (labelled DA), leading from the door to him, to indicate the distance from him you would find most comfortable for carrying on a conversation.



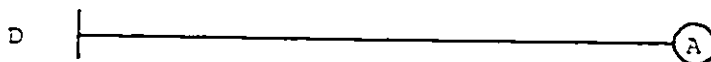
Imagine that you are entering a room through a doorway (labelled D) and approaching a stationary female stranger (labelled A) who is a Professor at the University of Ottawa. Imagine her to be standing in the room and facing you as you enter. Make a mark on the line (labelled DA), leading from the door to her, to indicate the distance from her you would find most comfortable for carrying on a conversation.



Imagine that you are entering a room through a doorway (labelled D) and approaching a stationary female stranger (labelled A) who is the Vice-Dean of the Faculty of Social Sciences at the University of Ottawa. Imagine her to be standing in the room and facing you as you enter. Make a mark on the line (labelled DA), leading from the door to her, to indicate the distance from her you would find most comfortable for carrying on a conversation.



Imagine that you are entering a room through a doorway (labelled D) and approaching a stationary male stranger (labelled A) who is a first year undergraduate student at the University of Ottawa. Imagine him to be standing in the room and facing you as you enter. Make a mark on the line (labelled DA), leading from the door to him, to indicate the distance from him you would find most comfortable for carrying on a conversation.

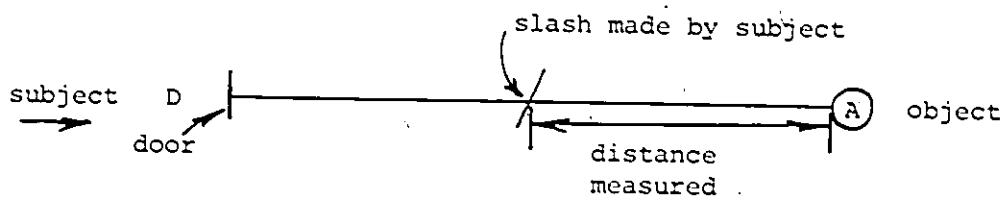


POST-EXPERIMENT QUESTION

Please comment on what you see as the main purpose(s) of the present research project.

2-C

Part 3: Measuring Procedure for Schematic Measure of Personal Space



2-D

Irwin Pencer
January 18, 1979.

OVERVIEW OF RESEARCH PROJECT

Female students were requested to participate in a study investigating attitudes toward counselling programs in high schools. Students were informed that there was a relationship between an individual's personality and her attitudes toward her high school counselling program. The purpose of the study, as stated, was to investigate what types of counselling approaches are preferred by which people so that counselling programs in high schools might serve the individual needs of the students more effectively.

In fact, the previous is a set-up for a study of a completely different nature, one concerned with personal space, the distances individuals maintain from each other in interpersonal communication situations.

The present study was set up to investigate the effects of such factors as sex role of individuals, the sex of interactants and the relative status of interactants on personal space preferences.

In the personal space literature, it has been found that persons tend to maintain greater distances from male strangers than female strangers and greater distances from higher status than from same status persons. Sex differences in personal space are usually explained in terms of the differential socialization processes of males and females, the greater passivity of the female or the lower perceived status of the female in our society. In this study it was hypothesized that it is possibly a person's sex role that determines how "passive"

that person is in interaction with others or determines how that person categorizes others in terms of status and that, in turn, these factors play a part in deciding an individual's distance preference in interaction with others.

The present study thus sought to investigate the effects of three factors separately and in combination on personal space preferences:

- 1) Sex role - Do individuals who differ in sex role have different personal space preferences?
- 2) Sex - Do individuals stay further away from male versus female interviewers?
- 3) Status - Do individuals stay further away from higher versus same status interviewers?
- 4) Does sex role combine with sex and/or status to produce an effect? Does one's sex role affect how one views the relative status of the sexes and thus one's personal space preferences? Does one's sex role lead one to ignore or magnify the importance of the sex of the other in assessing the other's status and is this effect seen in one's personal space preferences?

An individual's sex role, for purposes of this study, was obtained by means of a questionnaire (Bem Sex Role Inventory) which measures the extent to which individuals ascribe to masculine and feminine personality characteristics. The questionnaire was developed under the assumption that individuals could have both masculine and feminine personality characteristics (i.e., being masculine does not mean you cannot be feminine) and that being both masculine and feminine in personality characteristics would lead to greater adaptability and flexibility in situations and less stereotyped behaviour. Based on the results of this questionnaire, subjects were divided into four categories:

Masculine	(high masculinity, low femininity)
Feminine	(low masculinity, high femininity)
Androgynous	(high masculinity, high femininity)
Undifferentiated	(low masculinity, low femininity)

Subjects were requested to come for an interview about counselling programs. Each subject saw one of six interviewers (3 males, 3 females) playing one of two roles (Student - same status object person; Professor, Head of Department, Vice-Dean - higher status object person). The purpose of the interview was to obtain distance measures after subjects "pulled up a chair". Also studied were angle of orientation of the subject's chair relative to the interviewer's chair and the predominant body lean of the subject both of which are aspects of personal space preferences.

A post-experiment questionnaire assessed the extent to which there was agreement between an interviewer's status and the subject's perceptions of the interviewer's status, how comfortable or at ease subjects were in the situation and whether or not they were aware of the ploy.

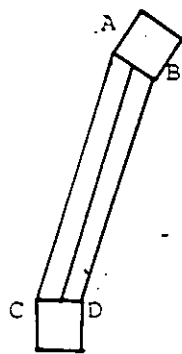
At a later date, a measure of personal space was carried out in class by an accomplice (my wife) to investigate the usefulness of a paper and pencil measure in studying the same issues.

Results are not yet available. If you would like to discuss the study further, please contact me at 521-3849. Thanks again for your co-operation.

2.-E

Procedure for Obtaining Difference and Angle of Orientation Measures

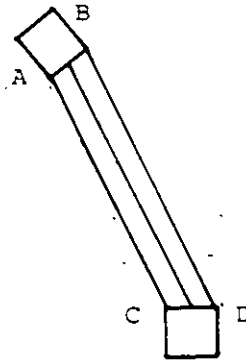
1. Difference Measure



S's Chair

C's Chair

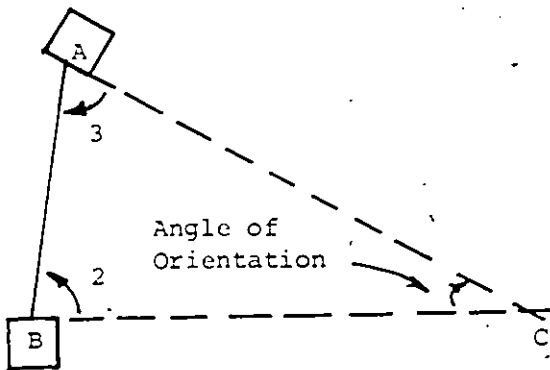
+ Orientation



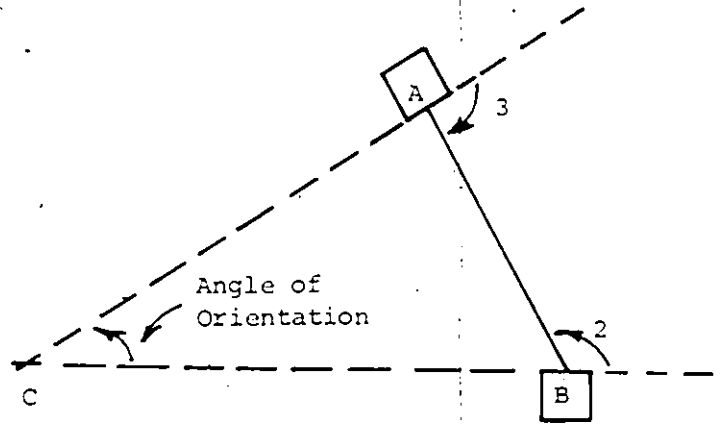
- Orientation

$$|AC - BD| = \text{difference measure}$$

2. Angle of Orientation Measure



+ Orientation



- Orientation

$$|180^\circ - \angle 2 - \angle 3| = \text{Angle of Orientation}$$

APPENDIX 3

Supplementary Data

Table A

Analysis of Variance: Effects of Sex Role of Subject,
Sex and Status of Interviewer, and Confederate
on Degree of Comfort in an Interview
(N = 120)

Source	SS	df	MS	F-Ratio
Main Effects				
Sex Role of Subject	10.80	1	10.80	6.55*
Sex of Interviewer	1.20	1	1.20	.73
Status of Interviewer	.53	1	.53	.32
Confederate	2.37	4	.59	.36
2-Way Interactions				
Sex Role of Subject x Sex of Interviewer	.03	1	.03	.02
Sex Role of Subject x Status of Interviewer	.40	1	.40	2.44
Sex of Interviewer x Status of Interviewer	.83	1	.83	.51
Sex Role of Subject x Confederate	.38	4	.94	.57
Status of Interviewer x Confederate	7.63	4	1.91	1.16
3-Way Interactions				
Sex Role of Subject x Sex of Interviewer x Status of Interviewer	.53	1	.53	.32
Sex Role of Subject x Status of Interviewer x Confederate	18.23	4	4.56	2.76*
Error	158.40	96	1.65	

*p < .05

Table B

Analysis of Variance: Effects of Sex Role of Subject,
Sex and Status of Interviewer, and Confederate
on Degree of Anxiety in an Interview
(N = 120)

Source	SS	df	MS	F-Ratio
Main Effects				
Sex Role of Subject	12.03	1	12.03	8.65**
Sex of Interviewer	.03	1	.03	.02
Status of Interviewer	.83	1	.83	.60
Confederate	8.67	4	2.17	1.56
2-Way Interactions				
Sex Role of Subject x Sex of Interviewer	.30	1	.30	.22
Sex Role of Subject x Status of Interviewer	5.63	1	5.63	4.05*
Sex of Interviewer x Status of Interviewer	.83	1	.83	.60
Sex Role of Subject x Confederate	1.67	4	.42	.30
Status of Interviewer x Confederate	3.33	4	.83	.60
3-Way Interactions				
Sex Role of Subject x Sex of Interviewer x Status of Interviewer	.83	1	.83	.60
Sex Role of Subject x Status of Interviewer x Confederate	15.53	4	3.88	2.80*
Error	133.60	96	1.39	

* $p < .05$

** $p < .01$

Table C

Analysis of Variance: Effects of Sex Role of Subjects,
Sex and Status of Interviewer, and Confederate
on Degree of Comfort in an Interview
(N = 240)

Source	SS	df	MS	F-Ratio
Main Effects				
Sex Role of Subject	11.31	3	3.77	2.57
Sex of Interviewer	1.20	1	1.20	.82
Status of Interviewer	.10	1	.10	.07
Confederate	8.27	4	2.07	1.41
2-Way Interactions				
Sex Role of Subject x Sex of Interviewer	.31	3	.10	.07
Sex Role of Subject x Status of Interviewer	5.21	3	1.74	1.18
Sex of Interviewer x Status of Interviewer	1.50	1	1.50	1.03
Sex Role of Subject x Confederate	13.20	12	1.10	.75
Status of Interviewer x Confederate	3.67	4	.92	.63
3-Way Interactions				
Sex Role of Subject x Sex of Interviewer x Status of Interviewer	.95	3	.32	.22
Sex Role of Subject x Status of Interviewer x Confederate	36.47	12	3.04	2.07*
Error	281.60	192	1.47	

*p < .05

Table D

Analysis of Variance: Effects of Sex Role of Subjects,
Sex and Status of Interviewer, and Confederate
on Degree of Anxiety in an Interview
(N = 240) \bar{Y}

Source	SS	df	MS	F-Ratio
Main Effects				
Sex Role of Subject	12.28	3	4.09	2.84*
Sex of Interviewer	.00	1	.00	.00
Status of Interviewer	.00	1	.00	.00
Confederate	10.33	4	2.58	1.79
2-Way Interactions				
Sex Role of Subject x Sex of Interviewer	.75	3	.25	.17
Sex Role of Subject x Status of Interviewer	7.88	3	2.62	1.82
Sex of Interviewer x Status of Interviewer	1.50	1	1.50	1.04
Sex Role of Subject x Confederate	15.80	12	1.32	.91
Status of Interviewer x Confederate	1.76	4	.44	.31
3-Way Interactions				
Sex Role of Subject x Sex of Interviewer x Status of Interviewer	.85	3	.28	.20
Sex Role of Subject x Status of Interviewer x Confederate	26.10	12	2.18	1.51
Error	277.20	192	1.44	

* $p < .05$

Table E

Test of Simple Main Effects:
 Sex Role of Subject x Status of Interviewer Interaction Effect
 on Degree of Anxiety in an Interview
 (N = 120)

Source	SS	df	MS	F-Ratio
Sum of Squares of Sex Role at Same Status Level	.60	1	.60	.43
Sum of Squares of Sex Role at Higher Status Level	17.17	1	17.17	12.34*
Sum of Squares of Status at Feminine Sex Role Level	5.40	1	5.40	3.88
Sum of Squares of Status at Androgynous Sex Role Level	1.09	1	1.09	.78
Error	133.60	96	1.39	

*p < .01

Table F

Test of Simple Main Effects:
 Sex Role of Subject x Sex of Interviewer Interaction Effect
 on Perceived Status of Interviewer
 (N = 240)

Source	SS	df	MS	F-Ratio
Sum of Squares of Sex Role for Male Condition	4.96	3	1.65	2.12
Sum of Squares of Sex Role for Female Condition	4.84	3	1.61	2.07
Sum of Squares of Sex for Masculine Subject Condition	.05	1	.05	.07
Sum of Squares of Sex for Feminine Subject Condition	4.70	1	4.70	6.04*
Sum of Squares of Sex for Androgynous Subject Condition	7.99	1	7.99	10.26**
Sum of Squares of Sex for Undifferentiated Subject Condition	.60	1	.60	.77
Error	149.60	192	.78	

* $p < .05$

** $p < .01$

Table G

Analysis of Variance: Effects of Masculinity and Femininity
Scale Scores of Subject, Sex and Status of Interviewer,
and Confederate on Perceived Status of Interviewer
(N = 240)

Source	SS	df	MS	F-Ratio
Main Effects				
Masculinity Scale Score of Subject	.10	1	.10	.13
Femininity Scale Score of Subject	.00	1	.00	.01
Sex of Interviewer	4.00	1	4.00	5.14*
Status of Interviewer	67.20	1	67.20	86.25**
Confederate	4.38	4	1.10	1.41
2-Way Interactions				
Masculinity x Femininity	.34	1	.34	.43
Masculinity x Sex	.34	1	.34	.43
Femininity x Sex	9.20	1	9.20	11.81**
Masculinity x Status	.34	1	.34	.43
Femininity x Status	.00	1	.00	.01
Status x Sex	.20	1	.20	.26
Masculinity x Confederate	2.18	4	.55	.70
Femininity x Confederate	1.72	4	.43	.55
Status x Confederate	2.32	4	.58	.74
3-Way Interactions				
Masculinity x Femininity x Sex	.00	1	.00	.01
Masculinity x Sex x Status	.20	1	.20	.26
Femininity x Sex x Status	.04	1	.04	.05
Masculinity x Femininity x Status	.20	1	.20	.03
Masculinity x Femininity x Confederate	.78	4	.20	.25
Masculinity x Status x Confederate	2.78	4	.70	.89
Femininity x Status x Confederate	.78	4	.20	.25
4-Way Interactions				
Masculinity x Femininity x Sex x Status	.50	1	.50	.65
Masculinity x Femininity x Status x Confederate	1.72	4	.43	.55
Error	149.60	192	.78	

* $p < .05$

** $p < .001$

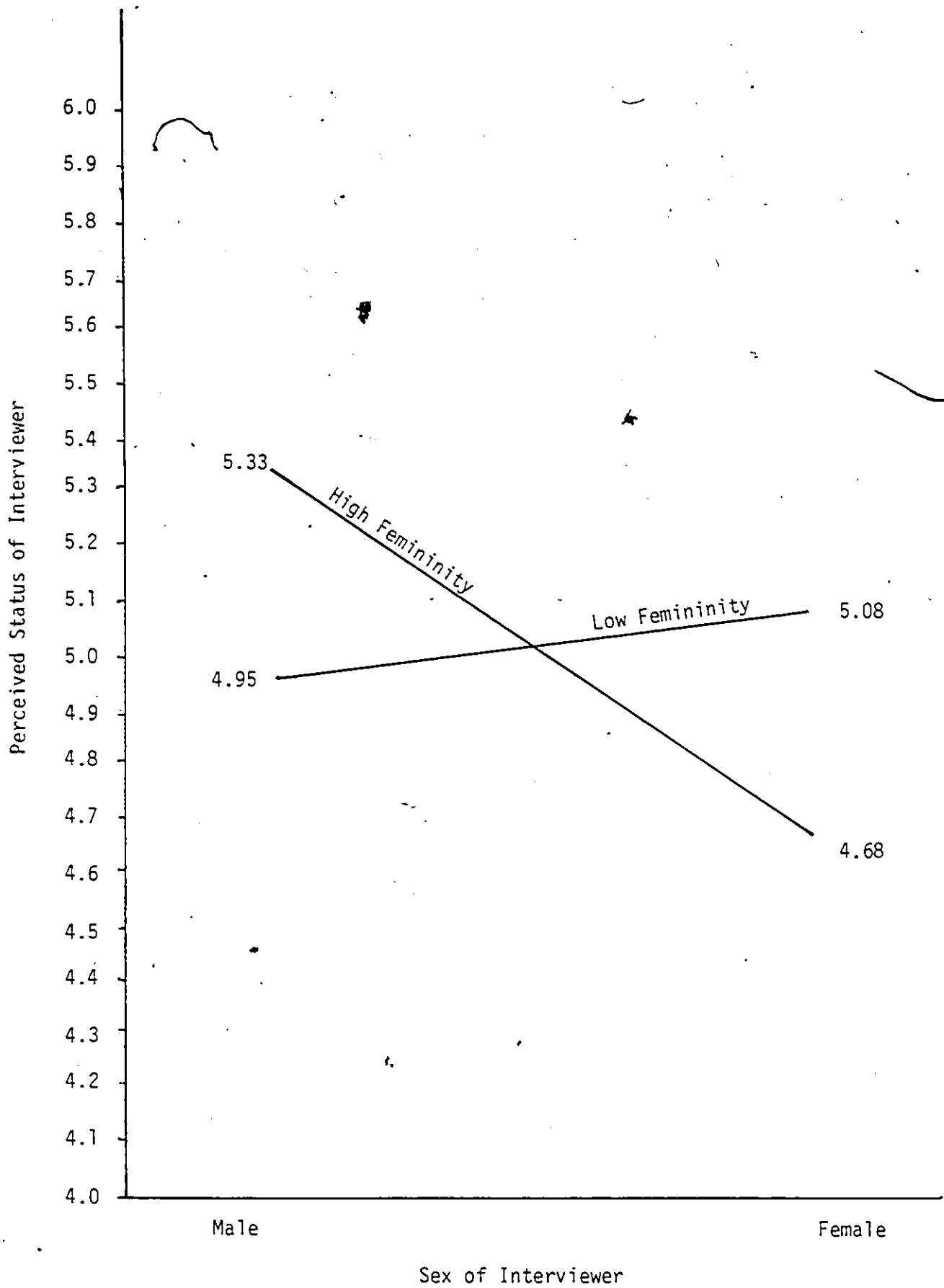


Figure A. Mean perceived status of interview for each condition of the Femininity Scale score of subject x sex of interviewer interaction effect

Table H

Test of Simple Main Effects:
 Femininity Scale Score of Subject x Sex of Interviewer
 Interaction Effect on Perceived Status of Interviewer
 (N = 240)

Source	SS	df	MS	F-Ratio
Sum of Squares of Femininity Scale Score for Male Condition	4.33	1	4.33	5.56*
Sum of Squares of Femininity Scale Score for Female Condition	4.80	1	4.80	6.16*
Sum of Squares of Sex for High Femininity Scale Score Condition	12.68	1	12.68	16.27**
Sum of Squares of Sex for Low Femininity Scale Score Condition	.51	1	.51	.65
Error	149.60	192	.78	

*p < .05

**p < .01

Table I

Test of Simple Main Effects:
 Sex of Interviewer x Status of Interviewer Interaction Effect
 on Distance Between Two Chairs in an Interview
 (Behavioural Measure of Personal Space)
 (N = 240)

Source	SS	df	MS	F-Ratio
Sum of Squares of Sex at Same Status Level	4597.90	1	4597.90	1.60
Sum of Squares of Sex at Higher Status Level	62052.86	1	62052.86	21.61*
Sum of Squares of Status for Male Condition	10167.80	1	10167.80	3.54
Sum of Squares of Status for Female Condition	6473.96	1	6473.96	2.25
Error	551406.50	192	2871.91	

*p < .01

Table J

Analysis of Variance: Effects of Masculinity and Femininity Scale Scores of Subject, Sex and Status of Interviewer, and Confederate on Distance Between Two Chairs in an Interview (Behavioural Measure of Personal Space)
(N = 240)

Source	SS	df	MS	F-Ratio
Main Effects				
Masculinity Scale Score of Subject	2693.40	1	2693.40	.94
Femininity Scale Score of Subject	130.54	1	130.54	.05
Sex of Interviewer	50228.27	1	50228.27	17.49***
Status of Interviewer	207.20	1	207.20	.07
Confederate	133547.23	4	33386.81	11.62***
2-Way Interactions				
Masculinity x Femininity	1771.27	1	1771.27	.62
Masculinity x Sex	6110.50	1	6110.50	2.13
Femininity x Sex	814.02	1	814.02	.28
Masculinity x Status	2982.15	1	2982.15	1.04
Femininity x Status	8272.00	1	8272.00	2.88
Status x Sex	16434.42	1	16434.42	5.72*
Masculinity x Confederate	12685.00	4	3171.25	1.10
Femininity x Confederate	4169.55	4	1042.39	.36
Status x Confederate	6414.82	4	1603.71	.56
3-Way Interactions				
Masculinity x Femininity x Sex	30.10	1	30.10	.01
Masculinity x Sex x Status	19638.50	1	19638.50	6.84**
Femininity x Sex x Status	160.07	1	160.07	.06
Masculinity x Femininity x Status	2574.15	1	2574.15	.90
Masculinity x Femininity x Confederate	14026.78	4	3506.69	1.22
Masculinity x Status x Confederate	3143.42	4	785.86	.27
Femininity x Status x Confederate	13207.60	4	3301.90	1.15
4-Way Interactions				
Masculinity x Femininity x Sex x Status	12600.50	1	12600.50	4.39*
Masculinity x Femininity x Status x Confederate	9957.77	4	2489.44	.87
Error	551406.50	192	2871.91	

*p < .05

**p < .01

***p < .001

Table L

Analysis of Variance: Effects of Sex Role of Subject,
Sex and Status of Interviewer, and Confederate
on Position of Subject's Chair Relative to Interviewer's Chair
(Angle of Orientation Measure)
(N = 120)

Source	SS	df	MS	F-Ratio
Main Effects				
Sex Role of Subject	472.03	1	472.03	1.74
Sex of Interviewer	282.13	1	282.13	1.04
Status of Interviewer	19.20	1	19.20	.07
Confederate	1952.93	4	488.23	1.80
2-Way Interactions				
Sex Role of Subject x Sex of Interviewer	67.50	1	67.50	.25
Sex Role of Subject x Status of Interviewer	177.63	1	177.63	.65
Sex of Interviewer x Status of Interviewer	1.20	1	1.20	.00
Sex Role of Subject x Confederate	325.87	4	81.47	.30
Status of Interviewer x Confederate	651.40	4	162.85	.60
3-Way Interactions				
Sex Role of Subject x Sex of Interviewer x Status of Interviewer	520.83	1	520.83	1.92
Sex Role of Subject x Status of Interviewer x Confederate	355.93	4	88.98	.33
Error	26079.20	96	271.66	

Table N

Analysis of Variance: Effects of Sex Role of Subject,
Sex and Status of Interviewer, and Confederate
on Position of Subject's Chair Relative to Interviewer's Chair
(Difference Measure)
(N = 120)

Source	SS	df	MS	F-Ratio
Main Effects				
Sex Role of Subject	364.01	1	364.01	2.35
Sex of Interviewer	91.88	1	91.88	.59
Status of Interviewer	3.68	1	3.68	.02
Confederate	1106.57	4	276.64	1.78
2-Way Interactions				
Sex Role of Subject x Sex of Interviewer	70.53	1	70.53	.46
Sex Role of Subject x Status of Interviewer	50.70	1	50.70	.33
Sex of Interviewer x Status of Interviewer	9.63	1	9.63	.06
Sex Role of Subject x Confederate	224.53	4	56.13	.36
Status of Interviewer x Confederate	427.27	4	106.82	.69
3-Way Interactions				
Sex Role of Subject x Sex of Interviewer x Status of Interviewer	385.21	1	385.21	2.49
Sex Role of Subject x Status of Interviewer x Confederate	236.67	4	59.17	.38
Error	14881.13	96	155.01	

Table 0

Mean Body Lean and Standard Deviations
for Sex Role, Sex, Status, and Confederate
(N = 120)

		<u>Androgynous Subjects</u>			<u>Female Interviewers</u>		
		<u>Male Interviewers</u>			<u>Higher Status I's</u>		
		<u>Same Status I's</u>			<u>Confederate</u>		
		#1	#2	#3	#1	#2	#3
\bar{X}	1.80	1.87	1.93	1.60	1.60	1.60	1.60
S.D.	.56	.52	.59	.55	.55	.55	.55
N	60	15	15	5	5	5	5
		<u>Higher Status I's</u>			<u>Confederate</u>		
		<u>Same Status I's</u>			<u>Higher Status I's</u>		
		<u>Male Interviewers</u>			<u>Female Interviewers</u>		
		<u>Same Status I's</u>			<u>Confederate</u>		
		#1	#2	#3	#1	#2	#3
\bar{X}	1.80	1.80	2.00	1.60	1.60	1.60	1.40
S.D.	.45	.71	.71	.55	.55	.55	.55
N	5	5	5	5	5	5	5
		<u>Confederate</u>			<u>Confederate</u>		
		#1	#2	#3	#1	#2	#3
\bar{X}	1.80	2.00	2.20	1.60	1.60	1.60	2.00
S.D.	.45	.71	.45	.55	.55	.55	.71
N	5	5	5	5	5	5	5

a 1 = Forward Lean
2 = Upright
3 = Backward Lean

b Confederates #1 is a Professor in the Department of Psychology
Confederate #2 is Head of the Department of Counseling Psychology
Confederate #3 is Vice-Dean of the Faculty of Social Sciences

Table P

Analysis of Variance: Effects of Sex Role of Subject,
Sex and Status of Interviewer, and Confederate
On Body-Lean of Subject in an Interview
(N = 120)

Source	SS	df	MS	F-Ratio
Main Effects				
Sex Role of Subject	.21	1	.21	.58
Sex of Interviewer	1.01	1	1.01	2.81
Status of Interviewer	.08	1	.08	.21
Confederate	2.13	4	.53	1.49
2-Way Interactions				
Sex Role of Subject x Sex of Interviewer	.01	1	.01	.02
Sex Role of Subject x Status of Interviewer	.21	1	.21	.58
Sex of Interviewer x Status of Interviewer	.21	1	.21	.58
Sex Role of Subject x Confederate	.53	4	.13	.37
Status of Interviewer x Confederate	1.87	4	.47	1.30
3-Way Interaction				
Sex Role of Subject x Sex of Interviewer x Status of Interviewer	.68	1	.68	1.88
Sex Role of Subject x Status of Interviewer x Confederate	.67	4	.17	.47
Error	34.40	96	.36	

Table Q

Mean Angles of Orientation and Standard Deviations
for Sex Role, Sex, Status, and Confederate

(N = 240)

Androgynous Subjects

\bar{X} 12.65
S.D. 13.39
N 60

Female Interviewers

\bar{X} 13.43
S.D. 13.40
N 30

Male Interviewers

\bar{X} 11.87
S.D. 13.57
N 30

Higher Status I's

\bar{X} 14.00
S.D. 13.40
N 15

Same Status I's

\bar{X} 12.87
S.D. 13.85
N 15

Higher Status I's

\bar{X} 8.07
S.D. 13.17
N 15

Same Status I's

\bar{X} 15.67
S.D. 13.31
N 15

Confederate #2

\bar{X} 15.00
S.D. 20.38
N 5

Confederate #3

\bar{X} 7.80
S.D. 12.52
N 5

Confederate #1

\bar{X} 14.60
S.D. 14.33
N 5

Confederate #2

\bar{X} 15.80
S.D. 7.12
N 5

Confederate #3

\bar{X} 10.00
S.D. 19.01
N 5

Confederate #1

\bar{X} 12.00
S.D. 13.25
N 5

Confederate #2

\bar{X} 15.00
S.D. 20.38
N 5

Confederate #3

\bar{X} 12.40
S.D. 16.75
N 5

\bar{X} 11.00
S.D. 7.87
N 5

\bar{X} 25.40
S.D. 15.61
N 5

\bar{X} 10.60
S.D. 11.67
N 5

\bar{X} 2.20
S.D. 1.79
N 5

\bar{X} 10.00
S.D. 19.01
N 5

\bar{X} 15.80
S.D. 7.12
N 5

\bar{X} 15.00
S.D. 20.38
N 5

\bar{X} 14.60
S.D. 14.33
N 5

\bar{X} 15.00
S.D. 16.75
N 5

\bar{X} 12.40
S.D. 11.72
N 5

Table Q

Mean Angles of Orientations and Standard Deviations for Sex Role, Sex, Status, and Confederate (N = 240)

		Undifferentiated Subjects			Male Interviewers			Female Interviewers				
		Same Status I's	Higher Status I's	Same Status I's	Higher Status I's	Same Status I's	Higher Status I's	Same Status I's	Higher Status I's			
		Confederate		Confederate		Confederate		Confederate				
		#1	#2	#1	#2	#1	#2	#1	#2			
X		8.20	13.40	1.60	20.20	12.80	38.00	13.20	4.80	29.60	37.20	6.40
S.D.		15.06	12.14	.55	25.22	14.32	24.36	17.06	5.40	28.11	14.50	5.18
N		5	5	5	5	5	5	5	5	5	5	5
		Confederate			Confederate			Confederate				
		#1	#2	#3	#1	#2	#3	#1	#2	#3		
X		10.40	11.53	18.67	24.40	18.67	21.77	21.85	24.40	21.85	21.53	21.53
S.D.		12.66	17.41	21.77	21.85	21.77	15	15	21.85	15	21.63	21.63
N		15	15	15	15	15	15	15	15	15	30	30

a In units of degrees

b Confederate #1 is a Professor in the Department of Psychology
 Confederate #2 is Head of the Department of Counselling Psychology
 Confederate #3 is Vice-Dean of the Faculty of Social Sciences

Table R.

Analysis of Variance: Effects of Sex Role of Subject,
Sex and Status of Interviewer, and Confederate
on Position of Subject's Chair Relative to Interviewer's Chair
(Angle of Orientation Measure)
(N = 240)

Source	SS	df	MS	F-Ratio
Main Effects				
Sex Role of Subject	601.15	3	200.38	.74
Sex of Interviewer	2226.50	1	2226.50	8.22*
Status of Interviewer	55.10	1	55.10	.20
Confederate	5328.23	4	1332.06	4.92*
2-Way Interactions				
Sex Role of Subject x Sex of Interviewer	679.61	3	226.54	.84
Sex Role of Subject x Status of Interviewer	800.21	3	266.74	.99
Sex of Interviewer x Status of Interviewer	100.10	1	100.10	.37
Sex Role of Subject x Confederate	3108.97	12	259.08	.96
Status of Interviewer x Confederate	412.97	4	103.24	.38
3-Way Interactions				
Sex Role of Subject x Sex of Interviewer x Status of Interviewer	592.55	3	197.52	.73
Sex Role of Subject x Status of Interviewer x Confederate	2949.57	12	245.80	.91
Error	51980.00	192	270.73	

*p < .001

Table S

Mean Difference Measures and Standard Deviations
for Sex Role, Sex, Status, and Confederate

(N = 240)

Masculine Subjects

\bar{X} 11.81^a
S.D. 14.47
N 60

Male Interviewers

\bar{X} 8.35
S.D. 11.89
N 30

Female Interviewers

15.27
16.11
30

Same Status I's Higher Status I's Same Status I's Higher Status I's

\bar{X} 11.27 5.43
S.D. 15.24 6.50
N 15 15

15.63 14.90
18.35 14.16
15 15

	<u>Confederate</u>			<u>Confederate b</u>		
	#1	#2	#3	#1	#2	#3
\bar{X}	.70	15.80	17.30	4.70	5.70	5.90
S.D.	1.30	16.83	17.82	6.50	6.82	7.63
N	5	5	5	5	5	5
				12.40	21.00	13.50
				16.63	26.64	11.75
				5	5	5
				8.60	23.60	12.50
				7.57	16.86	14.45
				5	5	5

Table T

Analysis of Variance: Effects of Sex Role of Subject,
Sex and Status of Interviewer, and Confederate
on Position of Subject's Chair Relative to Interviewer's Chair
(Difference Measure)
(N = 240)

Source	SS	df	MS	F-Ratio
Main Effects				
Sex Role of Subject	434.68	3	144.89	.84
Sex of Interviewer	1228.54	1	1228.54	7.10*
Status of Interviewer	7.70	1	7.70	.04
Confederate	2975.17	4	743.79	4.30*
2-Way Interactions				
Sex Role of Subject x Sex of Interviewer	536.98	3	178.99	1.04
Sex Role of Subject x Status of Interviewer	228.21	3	76.07	.44
Sex of Interviewer x Status of Interviewer	58.02	1	58.02	.34
Sex Role of Subject x Confederate	2364.71	12	197.06	1.14
Status of Interviewer x Confederate	145.03	4	36.26	.21
3-Way Interactions				
Sex Role of Subject x Sex of Interviewer x Status of Interviewer	435.30	3	145.10	.84
Sex Role of Subject x Status of Interviewer x Confederate	1451.09	12	120.92	.70
Error	33201.00	192	172.92	

*p < .01

Table U

Mean Body Lean and Standard Deviations
for Sex Role, Sex, Status, and Confederate

(N = 240)

Feminine Subjects

\bar{X} 1.88
S.D. .61
N 60

Male Interviewers

\bar{X} 1.97
S.D. .56
N 30

Female Interviewers

1.80
.66
30

	<u>Same Status I's</u>			<u>Higher Status I's</u>			<u>Higher Status I's</u>					
	<u>Confederate</u> #1	<u>Confederate</u> #2	#3	<u>Confederate</u> #1	<u>Confederate</u> #2	#3	<u>Confederate</u> #1	<u>Confederate</u> #2	#3			
\bar{X}	2.00	2.20	1.60	2.40	1.80	2.00	2.00	2.20	1.60	1.40	1.80	1.80
S.D.	.71	.0	.89	.55	.45	.0	.71	.84	.89	.55	.45	.45
N	5	5	5	5	5	5	5	5	5	5	5	5

Table U
 Mean Body Lean and Standard Deviations
 for Sex Role, Sex, Status, and Confederate
 (N = 240)

		<u>Undifferentiated Subjects</u>											
		<u>Male Interviewers</u>			<u>Female Interviewers</u>								
		<u>Same Status I's</u>			<u>Higher Status I's</u>			<u>Same Status I's</u>			<u>Higher Status I's</u>		
		<u>Confederate</u>		<u>#3</u>	<u>Confederate</u>		<u>#3</u>	<u>Confederate</u>		<u>#3</u>	<u>Confederate</u>		<u>#3</u>
		<u>#1</u>	<u>#2</u>		<u>#1</u>	<u>#2</u>		<u>#1</u>	<u>#2</u>		<u>#1</u>	<u>#2</u>	<u>#3</u>
\bar{X}		1.60	1.60	1.20	2.20	2.00	2.00	2.00	1.80	1.40	1.80	2.40	1.80
S.D.		.55	.55	.45	.84	.71	.0	.0	.45	.55	.45	.89	.84
N		5	5	5	5	5	5	5	5	5	5	5	5
		<u>Confederate</u>			<u>Confederate</u>			<u>Confederate</u>			<u>Confederate</u>		
\bar{X}		1.47	2.06	1.73	2.06	.59	1.73	2.00	.76	1.87	2.00	.76	2.00
S.D.		.52	.59	.46	.59	.15	.46	.46	.15	.63	.15	.15	.15
N		15	15	15	15	15	15	15	15	30	15	15	15

a 1 = Forward Lean
 2 = Upright
 3 = Backward Lean

b Confederate #1 is a Professor in the Department of Psychology
 Confederate #2 is Head of the Department of Counselling Psychology
 Confederate #3 is Vice-Dean of the Faculty of Social Sciences

Table V

Analysis of Variance: Effects of Sex Role of Subject,
Sex and Status of Interviewer, and Confederate
on Body Lean of Subject
(N = 240)

Source	SS	df	MS	F-Ratio
Main Effects				
Sex Role of Subject	.55	3	.18	.48
Sex of Interviewer	.70	1	.70	1.86
Status of Interviewer	.34	1	.34	.89
Confederate	2.42	4	.60	1.59
2-Way Interactions				
Sex Role of Subject x Sex of Interviewer	.88	3	.29	.77
Sex Role of Subject x Status of Interviewer	3.58	3	1.19	3.15*
Sex of Interviewer x Status of Interviewer	.34	1	.34	.89
Sex Role of Subject x Confederate	2.45	12	.20	.54
Status of Interviewer x Confederate	2.45	4	.61	1.62
3-Way Interactions				
Sex Role of Subject x Sex of Interviewer x Status of Interviewer	.98	3	.33	.86
Sex Role of Subject x Status of Interviewer x Confederate	2.42	12	.20	.53
Error	72.80	192	.38	

* $p < .05$

Table W

Test of Simple Main Effects:
 Sex Role of Subject x Status of Interviewer Interaction Effect
 on Body Lean of Subject
 (N = 240)

Source	SS	df	MS	F-Ratio
Sum of Squares of Sex Role at Same Status Level	3.21	3	1.07	2.82
Sum of Squares of Sex Role at Higher Status Level	.85	3	.28	.75
Sum of Squares of Status for Masculine Subject Condition	.79	1	.79	2.09
Sum of Squares of Status for Feminine Subject Condition	.01	1	.01	.04
Sum of Squares of Status for Androgynous Subject Condition	.29	1	.29	.78
Sum of Squares of Status for Undifferentiated Subject Condition	2.77	1	2.77	7.31*
Error	72.80	192	.38	

* $p < .01$

APPENDIX 4

Definitions, Theoretical Developments,
and Methodological Issues

Personal Space

Definitions, Theoretical Developments, Methodological Issues

The present section cites a number of definitions of personal space, followed by definitions in which an equilibrating mechanism is implied or stated as a determiner of personal space preferences, followed by definitions of personal space from the point of view of a particular theoretical orientation. The presentation is made in this manner to portray the concept of personal space in terms of increasing complexity rather than strictly in terms of chronological order.

In a series of studies, Kuethe (1962a, 1962b, 1964) and Kuethe and Stricker (1963) developed the concept of a social schema, the manner in which persons form units of human objects. Essentially, Kuethe presented subjects with a feltboard and various combinations of felt cutouts of males and females. The non-directiveness of the task was felt to permit the operation of whatever schema was "pre-potent" (Kuethe & Stricker, p. 656). Kuether and Stricker, in a study of 50 male and 50 female undergraduates found that, when presented with two male and two female object persons, males tended to form one group with male and female figures alternating and females often formed separate male-female pairs. Kuethe (1962b), in a study of the reconstruction of social schemas from memory, using 50 subjects, found that when required to reconstruct the placement of stimulus pairs originally placed at a constant distance, separation in order of decreasing distance was as follows: male-male figures facing away from each other, female-female figures, male-female figures and

male-male figures facing each other. The consistency of placement across subjects and the tendency to reconstruct distance depending on the particular object figures rather than the original placement of figures revealed that the objects themselves produced dispositions regarding appropriate distance placement and that "schemas are fundamental patterns of social organization for subjects" (Kuethe, 1962b, p. 74) and not just chance occurrences. Kuethe, then, in addition to developing a personal space measure, can be said to have laid the groundwork for viewing physical distance between individuals as more than an obvious phenomenon involving a subject's attempt to respond in a manner true of most people.

Hall (1966) conceptualized human space use in terms of a series of concentric circles surrounding an individual. He proposed that different distances are used under different circumstances and described four distance zones with this in mind. These include the intimate distance (6-18 inches), personal distance, the term used by Hediger, (close phase: 1' 1/2 - 2 1/2 feet; far phase; 2 1/2 - 4 feet), social distance (close phase: 4 - 7 feet; far phase: 7 - 12 feet), and public distance (close phase: 12-25 feet; far phase: 25 feet or more).

Sommer (1959) distinguished between human and non-human territory indicating that, unlike animal territory, human territory is portable and is a function of the particular situation or circumstances. Sommer (1969) used the term personal space to describe the personal distance concept and defined it as "an area with invisible boundaries surrounding a person's body into which

intruders may not come" (p. 26), and also felt that concentric circles, as suggested by Hall (1966) were not an accurate representation of the phenomenon of personal space.

Little (1965) defined personal space as "the area immediately surrounding the individual in which the majority of his interactions with others takes place" (p. 237). He felt personal space was determined by a combination of such factors as degree of acquaintance, friendship and setting.

Evans and Howard (1973) viewed personal space as "a mediating cognitive construct which allows the human organism to operate at acceptable stress levels and aids in the control of intraspecies aggression" (p. 340).

Argyle and Dean (1965) indicated that personal space is a phenomenon based on an equilibrating mechanism, in which, in an interaction, a balance between such factors as distance, eye contact, intimacy of topic, and facial expression is sought.

Leibman (1970) described personal space as "a set of expectations held by an individual that his own and others' behavior related to distance and position in space, will satisfy interpersonal goals in the most appropriate ways" (p. 210). She distinguished between physical and symbolic distances, physical possible distances being just one of many interrelated dimensions of personal space. Symbolic distance would include such variables as eye contact, body movement, breathing and conversation which interact with physical distance as equilibrating mechanisms.

Duke and Nowicki (1972) defined space as "an infinite series of oscillating rings represented in all planes (thus forming a globe). These rings are not considered necessarily circular but may be ovoid or elliptical" (p. 120).

They used social learning theory as developed by Rotter (1954) to discuss the concept of interpersonal distance and found that differences between externals and internals in interpersonal distance only occurred in situations where no expectancies existed such as in interaction with strangers.

Pederson and Shears (1973) discussed personal space within the framework of general systems theory in which the person is considered a system which performs three functions: input, involving the sensing of changes in the environment, "throughput" (p. 367), involving the evaluation of sensed changes against internal criteria yielding a decision concerning their acceptability, and output, involving the acting to alter the external state if it is unacceptable. In research on the person system with respect to personal space, Pedersen and Shears cited two areas of concern, the respective placement of people in space, and nonverbal communication as a means of transferring information regarding feelings and attitudes.

A wide and somewhat confusing array of methods have been used to measure personal space. Duke and Nowicki (1972) and Evans and Howard (1973), in reviews of the major findings of personal space, have attributed the lack of consistent findings in the literature to lack of experimental controls and methodological difficulties. They have stated that many investigators see personal space as an obvious phenomenon. As a result, the personal space measures have seemed commonsensical but have been minimally developed psychometrically. Researchers, it seems, have developed their own measuring instruments and make few attempts to compare methodologies. Generalizations

are made about results obtained without taking into account the limitations of the instruments used. Evans (1973) has described some of the methodological categories used in the study of personal space, an adaptation of which was presented in Chapter I, Table 1.