

THE RELATIONSHIP BETWEEN PERSONAL APPEARANCE  
AND INTERPERSONAL SPACING

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A Thesis  
Presented to  
the Faculty of the Department of Psychology  
University of Houston

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

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By  
Sandra R. Streitman  
August, 1972

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## ACKNOWLEDGEMENTS

As any project is a joint function of the efforts of many people, this thesis was no exception. I am indebted to friends who gave willingly of their time to cooperate and assist at various stages of the work.

I wish to give specific acknowledgement to my committee members Dr. James Baxter, chairman, Dr. Lawrence McGaughran and Dr. Roger Blakeney. I owe a major debt to Dr. Baxter for the time and effort he extended in making helpful suggestions and critical comments. Without his support and encouragement this study would never have become a reality.

Bruce Giessel played a major role in the data collection phase of this project. His good natured assistance lightened the work load considerably.

I also wish to acknowledge the typing assistance of Miss Judy Kirksey and Mrs. Evelyn Jones.

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## ABSTRACT

In an effort to explore man's use of space, the present study was designed to investigate the relationship between personal appearance cues (such as dress, ethnic background, and sex) and interpersonal spacing. To investigate this relationship an unselected sample of male and female Anglo-American college students were exposed to Blacks and Whites photographed in various modes of dress; the observers were then evaluated on the spatial distances they adopted from the photos.

Analysis of variance of the spatial distances adopted by observers revealed that interpersonal spacing is based on combinations of personal appearance cues rather than on any one factor such as intensity of dress, ethnic group or sex. Relevant to the area of interracial relationships was the finding that white college students did not differentiate in their spatial behavior between Blacks and Whites, at least in terms of the symbolic interaction.

A secondary focus of the study concerned the quantitative number of written responses stimulated by the variously attired individuals. To investigate this, observers were asked to describe the personal characteristics which they could attribute to the photographed individuals. Their responses were then analyzed in terms of the various personal appearance cues. Analysis of variance of the number of response characteristics generated by the observers revealed very little; observers responded to combinations of personal

appearance cues rather than to any one variable and did not differentiate between Blacks and Whites.

Although these findings might imply an equality in student's attitudes toward Blacks and Whites, further data from the study tend to contradict this. Incidental to the original design, a finer analysis of the response data indicated that there were significant qualitative differences in the characteristics attributed; and that students did differentiate significantly between Blacks and Whites. Some observers responded on a primarily descriptive level while others went beyond the raw information to a more inferential level. Students tended to describe and make more superficial statements about Blacks while making more inferential or analytic responses about Whites. The implication here is that White observers do react to Blacks on the basis of the fact that they are Blacks. This was also supported by the finding that observers did not vary their spatial distances from Blacks despite the introduction of contrasting appearance cues (while varying their distances from Whites on this basis). It might be speculated that if description as contrasted with inference is a form of defensiveness, it is possible that Whites are more defensive in response to Blacks and have more difficulty making inferences about them, thus casting their responses in descriptive form. The finding also suggests that Whites tended not to perceive individual differences among Blacks. This suggests the possible operation of

stereotyping and an attitude of prejudice toward Blacks.

This study carries with it certain implications for future research in cross-cultural interactions between Blacks and Whites. Since differences in the reactions to Blacks and Whites do not manifest themselves in the use of geographic space (at least in terms of a symbolic interaction), but rather are manifested in cognitive, perceptual and verbal processes, it would appear more fruitful to explore cross-cultural interactions in terms of cognitive and verbal distinctions.

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## CHAPTER I

### INTRODUCTION

The intense concern over urban crowding and overpopulation has led psychologists to focus on problems of the environment, thus creating a new subject matter of environmental psychology. Within this branch of psychology there has been etched out the relatively specific area called proxemics, a term coined by Hall (1959) to refer to the study of man's use of geographic space, how he relates physically to other persons with whom he interacts, and the communicative aspects of these physical relationships.

Until very recently the systematic study and theoretical conceptualization of man's use of space was unexplored. Anecdotal data provided by Hall (1959, 1966) have suggested that the use of space is a specialized elaboration of culture and that there are important cross-cultural differences in its use. People from different cultural backgrounds tend to define and use geographic space in different ways. For example, observational data point to the fact that Arabs interact at closer distances than do Americans, a finding that has since been corroborated experimentally by Watson and Graves (1966).

Such data tend to suggest that people are sensitive to the use of space and that seemingly small differences in spatial behavior among ethnic groups may play a large role in

determining the quality of cross-cultural relations as well as contribute to difficulties and misunderstandings. The study of interpersonal space can therefore serve as one approach to a better understanding of intergroup relations, attitudes and prejudices. In addition proxemics has implications for environmental design and suggests that spatial requirements may need to be altered if interpersonal relations are to be fostered between various ethnic groups.

As compared with such cross-cultural investigations, relatively little information is available regarding the preferred interpersonal distances of subcultural groups within this country. However, several observational and experimental studies have shown that some subcultural groups interact at consistent social distances within their own subculture and at another consistent distance in cross-cultural interactions. That is, they tend to interact at different interpersonal distances, in some cases tightly clustered and in other groups at greater distances (Baxter, 1970). From a serendipitous finding, Efron (1941) has noted differences in the use of space by Jews and Italians interacting in spontaneous encounters on New York streets. The Jews interacted at closer distances and more frequently touched each other during an encounter. Other investigators have found differences between Mexican-Americans, Blacks and Anglos. Mexican-Americans tend to interact at closer distances than do Anglo- or Black-Americans, while Black-Americans prefer to interact

at greater distances (Baxter, 1970; Thompson & Baxter, 1971). Similarly, Willis (1966) found that Blacks greeted other Blacks at greater distances than Whites greeted Whites and that cross-group greetings were intermediate. Although other factors such as sex (Baxter, 1970; Horowitz, Duff, & Stratton, 1964; Sommer, 1969; and Willis, 1966), degree of liking for a person (Mehrabian, 1968), age (Argyle & Dean, 1965; Baxter, 1970), environmental context and physical setting (Sommer, 1969), degree of illumination (Hall, 1966), personality differences (Sommer, 1969), and the communicator's attitude (Sommer, 1969) have been shown to be important in determining interpersonal distances, ethnic group differences appear to be among the strongest influences on spacing patterns (Baxter, 1970).

Variations in spatial distance will concurrently expose a person to variations in the patterns and quality of sensory stimuli (Baxter, 1970). At closer distances a person is exposed to qualitatively and quantitatively different sensory stimuli than if he stands at a greater distance. It is assumed then that differences in spatial preference will determine, in part, the pattern and quality of stimuli that will be available for use as cues or information. Reversing this logical sequence (spatial distance determining the stimuli that are available for cue use), one can also see how stimulus cues already available can determine interpersonal spacing. People communicate in a variety of ways other than

through verbal interaction. A person may simultaneously communicate by gestures, facial expressions, body postures, tone of voice, grooming and dress. Readily available cues in the form of variations in the stimulus intensity and variety of dress styles may have important communicative value for the observer. The personal appearance of an individual attired in intensely colored highly faddish clothes may presumably affect an observer's proximal distance in a different manner than would an individual attired in a neutrally colored, conservative or inconspicuous garb.

The present study was undertaken to investigate the relationship between appearance cues and interpersonal spacing. The study focused on how intensity and variety of dress as well as variations in ethnic background would affect the spatial behavior of observers. To study the observers' approach or avoidance behavior in relation to appearance cues, a series of life-sized photographic slides were used in which individuals varied in dress, race, and sex.

The use of photographs rather than live interactants was dictated by the need to control for other behavioral variables, e.g., nature of the interaction, relationship between the interactants, and eye contact that might influence the distance of the observer. Although the use of photographs may raise questions of the validity of generalizing to actual interactions between people, a previous study by Argyle and Dean (1965), has used a similar procedure with photographs

with aspects of their findings achieving replication. Other investigators (e.g., Little, 1968) have used symbolic tasks to study interpersonal spacing and have essentially reported similar findings as have those studies using live interactants. Thus it was felt that the use of photographic slides would successfully simulate a live interaction and the projection of personal appearance cues to an observer.

These variations in appearance cues were expected to produce different observer reactions. A more intense as opposed to a neutral stimulus is often difficult to encompass visually, particularly if the intensity extends over a large geographic space such as is presented by a full sized person. As compared with an equally large but muted stimulus, an intense one would demand and capture more of one's attention. In order to visually accommodate to the greater stimulus intensity and attain a total view of each aspect of a person, an observer would need to stand at a greater distance. Therefore it was hypothesized that the more intense and varied a stimulus pattern a person presents, the greater the distance an observer would take from the photograph. Specifically, observers would stand farther from photographs of intensely attired target individuals than from individuals attired in conservative and muted clothes. In addition, it was hypothesized that observer distances would differ depending upon the ethnic background of the photographed individual. On the basis of previous findings (Baxter, 1970), it was predicted

that White observers would stand at a greater distance from photographs of Black-Americans than from photographs of Whites. Finally, it was expected that there would be small but noticeable differences in spatial distance depending upon the sex of the photographed individual and the sex of the subject-observer. The findings on sex differences in spatial preference have been inconsistent. Some studies have found significant spacing and pattern differences between the sexes (Horowitz et al., 1964), while others have found none (Little, 1968). Still other studies have shown that women tend to sit more closely together than do men (Sommer, 1969), and that speakers tend to stand more closely to women than to men (Willis, 1966). Other studies have found that mixed pairs of males and females interacted most proximally, that female pairs were intermediate, and that male pairs were most distant (Baxter, 1970). On the basis of previous findings (Horowitz et al., 1964), it was expected that observers would stand closer to photographs of females than to photographs of males. It was anticipated that spatial distances would be greatest between male observers viewing males and closest for females observing females. It was not predicted that females would stand closest to pictures of males based on findings that in relationships with lesser known males (and in this study, total strangers) females would tend to maintain greater distance (Willis, 1966).

A second focus of the study was the number of response



characteristics attributed to variously attired individuals. On the basis of work done by Jones and Davis (1965), it was assumed that individuals who present a stimulus configuration that is unique or deviates from the social norm will create greater responsivity in observers. Therefore it was predicted that observers would show greater responsivity and attribute more characteristics to individuals attired in intense and unusual dress.

## CHAPTER II

### METHOD

#### Subjects

The subjects (Ss) included 48 students recruited primarily from junior and senior level psychology courses at the University of Houston. On the basis of empirical evidence suggesting different proximal behavior among Blacks, the data on two Black females were excluded from the statistical analysis. The remaining 46 Ss included 21 males and 25 females ranging in age from 18 to 40 with a mean age of 24 years.

Since it was felt that height might influence spatial behavior, information was gathered on each S's height. Analyzed by sex, female Ss ranged in height from 4'11" to 5'10" with a median height of 5'5", while the male Ss ranged in height from 5'2" to 6'4" with a median height of 5'10½". In order to evaluate the effect of height on spatial behavior, the males and the females were each divided into two groups of those falling above and below their respective group's median height. T-tests calculated for the difference between the means showed no significant differences between the two groups of males or females. This suggests that variations in height did not influence the spatial distances adopted.

Information was also gathered on each S's visual adjustment. This included obtaining a report on acuity as well as

impairments such as blind spots and limitations in peripheral vision. Notation was also made of visual corrections such as glasses, contact lenses or bifocals. Of the entire sample 78 per cent reported visual impairments in acuity, range, blind spots or scotoma as well as other problems. The majority of those Ss with impaired vision had a visual correction which provided near normal vision. However, there remained 33 per cent (18 per cent of the total sample) who had no visual correction or a correction that did not achieve normal vision. The use of a t-test to evaluate the differences between the means of the groups with and without normal vision (after corrective lenses), produced a nonsignificant t suggesting that there were no differences between the two groups and that the quality of visual adjustment did not influence the spatial behavior.

### Instruments

The experimental room contained two slide projectors, each set on a table in parallel corners of the room. Approximately twenty feet in front of each projector two frosted acetate rear projection screens were suspended from the ceiling. The stimulus displays were projected on the back side of these two screens. The room was dimly illuminated by ambient light from the projectors and from two small lamps located on the floor at the rear of the room.

The stimuli consisted of colored slides of eight young adults the general age of the Ss: two White males, two White

females, two Black males, and two Black females. Each photograph contained a full figure pose of the target individual in a comfortable stance facing slightly to one side and maintaining a neutral expression. The eight individuals were photographed indoors in front of a neutral background under two conditions of dress: one muted, neutral, and conservative, the other intense, colorful, and patterned. The intense attire was representative of the current mod and hippy fads (i.e., wild colors, beads, bell bottoms, barefeet, etc.). The conservative attire was also casual but less intense, patterned and unusual. Each person was projected life-sized on the screens.

The 16 slides were divided into two patterns, X and Y, each containing eight different slides. Each pattern contained a representative photograph of each sex and ethnic group under both conditions of dress. Subject-observers were assigned to slide patterns X or Y on a random basis. One-half of the Ss were shown the 8 slides of pattern X and the other half of the Ss were shown the 8 slides of pattern Y. The 8 slides in each pattern were randomly divided so that half were shown on one projector and the other half shown on the second projector. Since it has been found that there is a persistence of the social distance that is first established (Argyle & Dean, 1965), the slides shown on each projector were shuffled and presented in random order. The order of slide presentation was such that each successive

slide was shown from a different projector forcing Ss to move from one screen to the other. A series of chairs placed end to end in the center of the room served as an obstacle between the screens and forced each S to reestablish a new spatial distance for each stimulus display.

### Procedure

Two experimenters (Es) conducted the experiment. The first E operated the projectors, shuffled the slides, and timed the slide presentations. The second E read the instructions and recorded the observer distances.

Subjects were scheduled at ten minute intervals. At the appointed time, E led S into the dimly lighted experimental room where S was then seated. The background information shown in the Appendix was then collected. E explained the study to S as follows:

This is going to be an experiment in how one forms impressions of people. You see there are two screens, one on each side of the room. A series of slides of people will be shown. Your task will be to look at the people and formulate your impressions of them. I'm interested not only in a physical description but also in your feelings toward these people. Write anything that comes to your mind. Use a separate sheet of paper to record your impression of each different person and put each separate response on a different line. Record your impressions while you are watching the people. The first person will be projected on one screen, the next person on the other screen, the third person on the original screen, and so forth, so that you will need to walk from screen to screen to observe each successive person. Stand as close or as far back as you need to get a good view of the person. But you will need to stand directly in front of the person, not off to the side, because the people are clearest from the center. Each person will be

projected for 45 seconds, and when you have finished looking at each person and recording your impressions walk back behind these chairs and wait until the next person is projected. Now wait behind the chairs until the first person is presented on the left screen.

All questions directed to E concerning the type of characteristics S should record were answered in a general and non-directive manner.

After S had begun to record his impressions E unobtrusively recorded the distances between the S's toes and the screen. Nine inch square tiles on the floor were used as the measuring scale. Distances from the screen were calculated to the nearest one-fourth tile (approximately 2.25 inches) for each of the eight slide presentations.

Following completion of the experiment each S was thanked for his cooperation and briefly told the nature of the experiment. He was then asked if he had been aware of E measuring his distance. Although a few Ss mentioned that they had been aware that they were being observed, no one reported realizing the object of the observation. Finally, Ss were asked to cooperate in not revealing the nature of the experiment to fellow classmates.

## CHAPTER III

### RESULTS

The three major concerns of the present study were with 1) the spatial distance adopted from the photographed individuals, 2) the number of response characteristics attributed to the photographed individuals, and 3) the relationship between the distance adopted and the number of response characteristics attributed. The results pertaining to each of these three issues are examined separately in the following sections. The main independent variables of the study included intensity of dress (Intense or Muted), ethnic group of the photographed individual (Black or White), sex of the photographed individual (Male or Female), sex of the subject-observer (Male or Female) and pattern of presentation.

#### Spatial Distance

Spatial distance values in inches were entered into a five-dimensional analysis of variance table in which the sex of the S and the pattern of pictures seen were between subject factors and the intensity of dress, sex and ethnic group of the people pictured were within subject factors. Thus, it was possible to investigate the influence of the S's sex as well as the dress level, sex and ethnic group of the person pictured on spacing. While the pattern of pictures seen was considered as a separate factor, the value of this factor was in refining the analysis. No interest was attached to

specific pattern effects. Thus, all pattern effects were disregarded in evaluating the data.

Overall, the mean distance adopted by Ss was 109.76 inches or slightly more than nine feet with a range from 3 to 14 feet. Table 1 contains a summary of the analysis of spacing distances. Only the four main factors of interest are included in this table.

Inspection of Table 1 reveals that none of the main factors approached significance. While it was hypothesized that Ss would stand at a greater distance from targets dressed in intense attire than from targets in neutral attire, this prediction was not borne out. The analysis of variance of the distances adopted under the two conditions of dress yielded an F ratio of 2.28, which for 1 and 42 degrees of freedom was not significant.

Although dress intensity did not make an overall difference, the differences for white targets were in the opposite direction of those predicted. Inspection of Table 2 showing the interaction of Sex of the Target (G) X Ethnic group of Target (R) X Dress (D) ( $p < .05$ ) reveals that Ss moved in closer to those Whites dressed in intense and brighter clothes while remaining at a greater distance from those individuals and especially males photographed in muted attire. By contrast, observers stood at



TABLE 1  
PARTIAL SUMMARY OF THE ANALYSIS OF VARIANCE  
OF SPATIAL DISTANCES FROM TARGETS

Source	MS	df	Error	F
Dress (D)	190.00	1	1	2.28
Ethnic Group of Target (R)	34.41	1	2	.32
Sex of Subject (S)	3411.01	1	3	.85
Sex of Target (G)	44.56	1	4	.77
Errors				
Error 1	82.99	42		
Error 2	106.28	42		
Error 3	4005.98	42		
Error 4	57.39	42		
Error 5	90.04	42		
Error 6	121.31	42		
Error 7	74.63	42		

Note.-The four major main effects are included.

TABLE 2

A COMPARISON OF THE MEAN OBSERVER DISTANCES AS RELATED TO  
INTENSITY OF DRESS, ETHNIC GROUP, AND SEX OF TARGETS

Intensity of Dress		Intense		Muted	
Ethnic Group of Target		Black	White	Black	White
Sex of Target	Female	109.12	107.79	111.13	109.61
	Male	110.31	108.93	107.26	113.96
	Combined	109.71	108.36	109.19	111.78

approximately the same distance from intensely and neutrally dressed Blacks.

Table 1 shows that the main effects of sex of the subject-observer (S) and Sex of the Target (G) were both nonsignificant, respectively yielding F ratios of .85 and .77. However, Table 3, showing the significant interaction of S X G X R ( $p < .10$ ), reveals that men and women reacted differently to variations in the sex and ethnicity of the targets. In accord with earlier studies females stood somewhat closer to all individuals and especially to other females than did males, but at the same time distinguished less between ethnic group and sex variations in the targets; by contrast, males varied their distance appreciably and took an especially greater distance from other White males.

It was also hypothesized that the White subject-observers would stand farther from Black targets than from White targets. As can be seen in Table 1 this hypothesis was not confirmed and yielded an F ratio of .32. While there were no overall differences in distance adopted to Blacks and Whites, there was a significant interaction of G X R ( $p < .05$ ). As can be seen in the mean comparisons in Table 4, Ss stood slightly closer to White females than to Black females, but

TABLE 3

A COMPARISON OF THE MEAN OBSERVER DISTANCES AS RELATED TO  
SEX OF SUBJECT, AND SEX AND ETHNIC GROUP OF TARGET

Sex of Target	<u>Ethnic Group of Target</u>					
	<u>Black</u>		Combined Difference	<u>White</u>		Combined Difference
	Female	Male		Female	Male	
Female	106.13	106.68	.55	106.43	107.52	1.09
Sex of Subject						
Male	114.12	110.89	3.23	110.97	115.37	4.40

TABLE 4

A COMPARISON OF THE MEAN OBSERVER DISTANCES AS RELATED  
TO SEX AND ETHNIC GROUP OF TARGET

Sex of Target	Ethnic Group of Target	
	Black	White
Female	110.12	108.70
Male	108.78	111.44

by contrast, they stood closer to Black males than White males. As compared to all groups, subjects stood closest to White females and farthest from White males while standing at an intermediate distance from Black males and females.

In sum the main hypothesis regarding the effect of intensity of dress on spatial distance was not confirmed. Yet the data revealed several interesting trends. Observers adopted varying distances to Whites depending upon their intensity of dress. But contrary to expectation, they moved in closer to Whites in intense dress while remaining at a greater distance from Whites and especially White males in muted attire. By contrast, observers stood at approximately the same distance for intensely and neutrally dressed Blacks. Overall however, and contrary to the prediction and to the findings of previous studies (e.g., Willis, 1966), there were no significant differences in the spatial distances maintained from Blacks and Whites. The main effect of sex of the Subject-observer and sex of the photographed individual were not significant but tended to be in the direction predicted and in accord with earlier investigations. Female observers tended to stand closer to targets than did males. Females were also more consistent in their distance from target to target. In accord with the hypothesis, observers stood closest to White females and farthest from White males. Opposite to the directional differences for Whites, observers stood closer to Black males than Black females.

Sequence Analysis. In order to evaluate the effect of order on spatial distance, the distances were arranged by order of presentation and placed in an analysis of variance table. Table 5 contains a summary of this analysis of the effect of order. Inspection of the table reveals that the sequence of slide presentation was significant at the .01 level attaining an F ratio of 6.98 for 7 and 315 degrees of freedom. To further evaluate these sequence effects, the mean distances for the first through eighth trials were plotted in Figure 1. As can be seen in the figure, the mean distances adopted by all Ss to the first slide, the second slide, etc. (irrespective of the target individual involved) produced an interesting pattern in which Ss took greater distance from the odd numbered slides (1, 3, 5, 7) than from the even numbered ones (2, 4, 6, 8). A t-test evaluation of the means between the odd numbered slides and the even numbered slides showed them to be significantly different. By contrast, there were no significant differences within the odd numbered slides or within the even numbered ones. Since the first slide was consistently shown on the left screen, the second slide on the right screen and so forth, it appears that Ss took greater distance from targets appearing on the left screen than from targets appearing on the right one. This suggests that there may have been a persistence in the social distance first established to a particular screen and side of the room. Interestingly enough, Argyle and Dean (1965) have

TABLE 5

A SUMMARY OF THE ANALYSIS OF VARIANCE OF THE EFFECTS OF ORDER

Source	df	SS	MS	F
Order	7	4010	573	6.99*
Subjects	45	182358	4052	
Order X Subjects	315	25779	82	
Total	367	212147	578	

\* $p < .01$



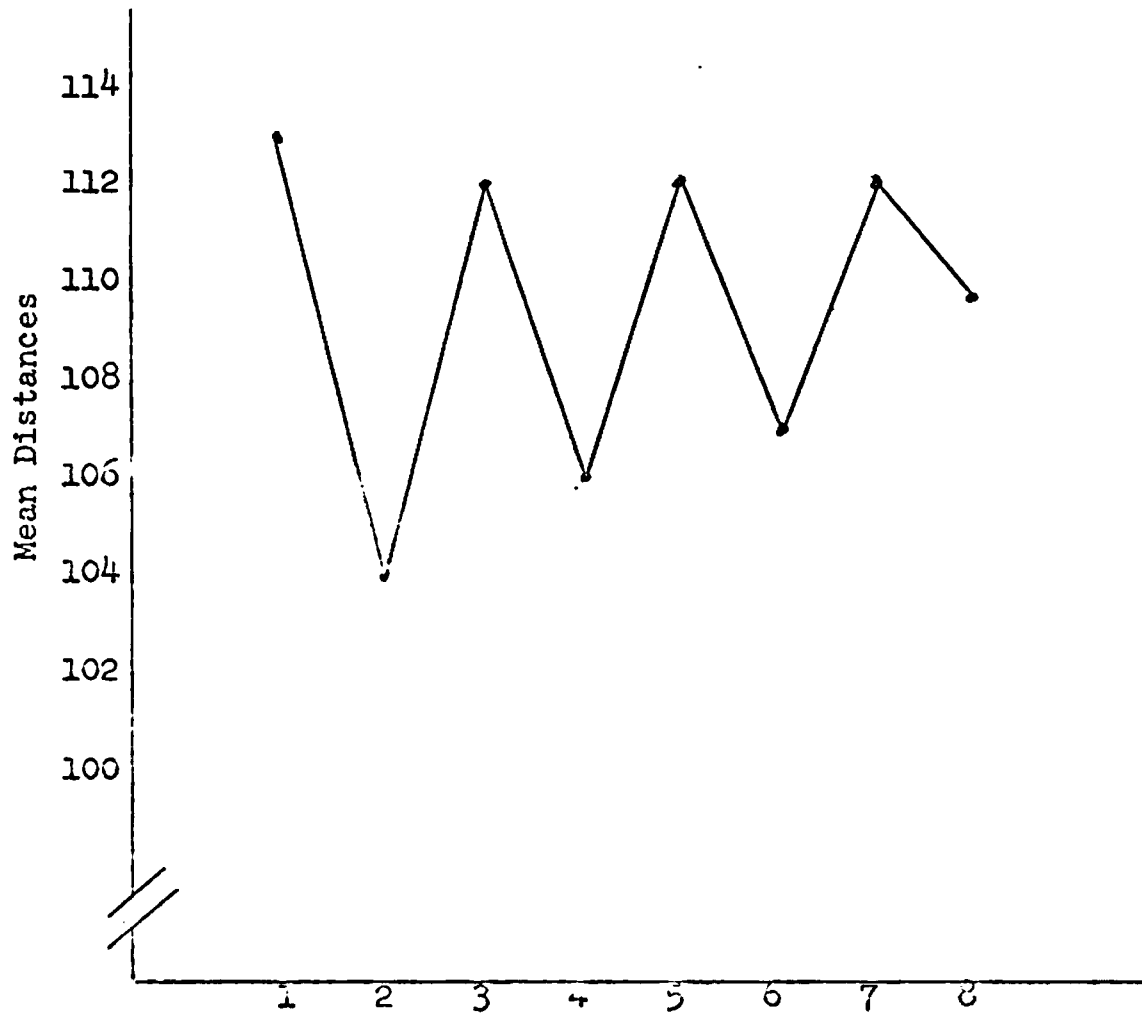


Figure 1. Mean Distances Adopted by all Subjects Arranged by Order of Slide Presentation

also found that there is a persistence of the social distance that is first established.

Since it was felt that order effects may have confounded the findings on intensity of dress, a sign test evaluation of the direction of the differences in distances adopted under the intense and muted conditions was carried out only on those slides presented on the odd numbered trials (i.e., 1, 3, 5, 7). By holding the ethnic group and the sex of the target constant, it was possible to evaluate the directional differences for one pair of targets for each subject. But despite this control of order effects, the sign test analysis proved to be congruent with the original findings, both of which suggested that there were no differences between the two conditions of dress. Ss were no more likely to stand farther from intensely attired persons than from persons in neutral attire.

#### Number of Characteristics Attributed

The second focus of the present study concerned the number of response characteristics attributed to the photographed individuals. As in the analysis of spatial distance, the number of characteristics attributed to each photographed individual was entered into a five-dimensional analysis of variance table in which sex of subject and pattern of the picture were between subject factors and the intensity of dress, sex, and ethnic group of the people pictured were within subject factors. As in the analysis of spatial distance no interest was attached to specific pattern effects

and thus all pattern effects were disregarded in evaluating the data.

Table 6 contains a partial summary of the analysis of the number of response characteristics. Only the four main effects and those interactions which approached significance are included in this table. The three main effects of intensity of dress, ethnic group and sex of the subject-observer did not attain significance respectively yielding F ratios of 1.75, .07, and .33.

Although there was no overall difference in the number of characteristics attributed to intensely versus neutrally attired targets, the difference was contrary to the prediction and in the direction of greater responsivity to muted figures. Inspection of Table 7 showing the interaction of  $S \times R \times D$  ( $p < .05$ ) reveals that Ss responded at greater length to individuals in muted attire than to those in intense attire. Male Ss responded more to neutrally dressed Whites, while female Ss responded more to neutrally dressed Blacks.

From Table 6 it can be seen that the main effect of Sex of the Target attained significance at the .05 level, yielding an F ratio of 4.56 for 1 and 42 degrees of freedom. From Table 8, showing the mean comparisons of  $S \times G$  ( $p < .10$ ), it is apparent that observers and particularly male observers wrote more about females than about males.

Thus the main hypothesis concerning the influence of

TABLE 6

PARTIAL SUMMARY OF THE ANALYSIS OF VARIANCE OF THE  
NUMBER OF CHARACTERISTICS ATTRIBUTED TO TARGETS

Source	MS	df	Error	F
Dress (D)	1.65	1	1	1.75
Ethnic Group of Target (R)	.08	1	2	.07
Sex of Subject (S)	3.09	1	3	.33
Sex of Target (G)	4.72	1	4	4.56**
S X G	3.18	1	4	3.07*
S X R X D	8.00	1	5	6.61**
Errors				
Error 1	.94	42		
Error 2	1.24	42		
Error 3	9.15	42		
Error 4	1.03	42		
Error 5	1.21	42		

Note.-The four major main effects and those that achieved .10 significance or better are included.

\* $p < .10$

\*\* $p < .05$

TABLE 7

A COMPARISON OF THE MEAN NUMBER OF CHARACTERISTICS ATTRIBUTED  
TO TARGETS AS RELATED TO SEX OF SUBJECT AND INTENSITY  
OF DRESS AND ETHNIC GROUP OF TARGET

Intensity of Dress		Intense		Muted	
Ethnic Group of Target		Black	White	Black	White
Sex of Subject	Female	3.86	4.16	4.33	4.12
	Male	4.44	4.11	4.15	4.51
	Combined	4.15	4.13	4.24	4.31

TABLE 8

A COMPARISON OF THE MEAN NUMBER OF CHARACTERISTICS ATTRIBUTED  
TO TARGETS AS RELATED TO SEX OF SUBJECT AND SEX OF TARGET

Sex of Subject	Sex of Target		
	Female	Male	Combined
Female	4.14	4.10	4.12
Male	4.51	4.10	4.31
Combined	4.33	4.10	

intensity of dress on number of characteristics attributed was not confirmed, and in fact ran counter to expectation. Ss tended to write more about muted figures than about intensely attired ones. It was also found that amount of responsivity depended upon the sex of the observer as well as the sex of the target with observers and especially males writing significantly more about photographs of females.

#### Correlation between the Spatial Distance and the Number of Characteristics Attributed

The third focus in this study centered on the relationship between interpersonal spacing and the number of observer responses stimulated by the photographs. To evaluate this relationship, a Spearman rank correlation was computed between the mean distance scores and the mean number of response characteristics attributed to the targets by each of the subjects. The rank order data on these two variables revealed that there were four sets of tied observations on the distance variable and 13 sets of tied observations on the number of responses variable. Corrected for ties, the  $r_s$  correlation between the distance from the target and the number of observations was  $-.03$ , which when tested for significance by means of a t-test was not significant, suggesting that there is no relationship between spatial distance and the number of characteristics attributed. Informal correlational analyses conducted on individual subjects' distance and attribution scores were in accord with the overall

correlation and showed no significant relationship between the distance adopted by a particular observer and the quantity of characteristics he attributed to the target. Thus, Ss who maintained a closer interpersonal stance were no more likely to be more responsive than were Ss who stood at a greater distance.

### Description and Attribution

From inspection of the response data, it was evident that some people described but did not make inferences about the photographed individuals. This led to distinguishing the responses into two categories of description and attribution. Those responses that contained raw information or phenomenal data (e.g., Black, man, large, pretty) were considered to be descriptive. Those responses that were adjudged to be inferential and that went beyond the raw data (e.g., sensitive, mean, shy) were categorized as attributive. Each response was scored on the basis of this two-category system and rated as descriptive or attributive. To check the reliability of this scoring system, a second rater scored 25 per cent of the responses. The scoring system proved to be highly reliable resulting in an 88 per cent agreement between the two raters. The following sections will first discuss the relationship between description and attribution; thereafter there will be separate evaluations of the descriptive and attributive data.

Relationship between Description and Attribution. In order to evaluate the relationship between description and



attribution, a Spearman rank correlation was computed between the mean description score and the mean attribution score for each of the subjects. The rank order data on these two variables revealed that there were 13 sets of tied observations on the description variable, and 13 sets of tied observations on the attribution variable. Corrected for ties, the  $r_s$  correlation between description and attribution was  $-.516$  which when tested for significance by means of a t-test, yielded a t of  $-3.40$  ( $p < .01$ ). This suggests that there was an inverse relationship between description and attribution: Ss who tended to describe a target were less likely to make inferences about him, while Ss who made inferences about targets were less likely to include purely descriptive information.

Description. As in the analysis of spatial distance, the number of descriptive responses attributed to each photographed person was entered into a five-dimensional analysis of variance table in which intensity of dress, sex and ethnic group of the target and sex of the subject were the main factors of interest.

Table 9, containing a partial summary of the analysis of the number of descriptive responses, contains the four main effects. Inspection of Table 9 reveals that three of the main effects including intensity of dress, sex of the subject and sex of the target did not attain significance.

From Table 9 it can also be seen that the main effect of

TABLE 9  
PARTIAL SUMMARY OF THE ANALYSIS OF VARIANCE FOR  
THE NUMBER OF DESCRIPTIVE RESPONSES

Source	MS	df	Error	F
Dress (D)	.89	1	1	1.36
Ethnic Group of Target (R)	12.72	1	2	9.86**
Sex of Subject (S)	6.92	1	3	.64
Sex of Target (G)	.30	1	4	.29
Errors				
Error 1	.65	42		
Error 2	1.28	42		
Error 3	10.78	42		
Error 4	1.02	42		

Note.-The four major main effects are included.

\*p < .10

\*\*p < .05

ethnic group of the target reached significance at the .01 level yielding an F ratio of 9.86 for 1 and 42 degrees of freedom. This finding suggests that the number of descriptive statements depended upon the ethnic background of the target. Ss responded with an average of 1.65 descriptive statements to Blacks; by contrast they produced an average of 1.27 descriptive statements to Whites. Thus Ss tended to describe and give more purely informational data on Blacks than about Whites.

Attribution. As in the analysis of descriptive responses, attributive or inferential responses were entered into a five-dimensional analysis of variance table in which intensity of dress, sex and ethnic group of the target and sex of the subject were the main factors of interest.

Table 10, containing a partial summary of the analysis of variance for the number of attributive responses, contains the four main effects and those interactions that approached significance. As can be seen from Table 10, the three main effects of intensity of dress, sex of the target and sex of the subject did not reach significance respectively yielding F ratios of .57, 1.26, and 2.50.

From the table it can also be seen that the main effect of ethnic group of the target attained significance at the .01 level yielding an F ratio of 11.52 for 1 and 42 degrees of freedom. This suggests that the number of attributive or inferential responses elicited depended upon the ethnic group of

TABLE 10  
PARTIAL SUMMARY OF THE ANALYSIS OF VARIANCE FOR  
THE NUMBER OF ATTRIBUTIVE RESPONSES

Source	MS	df	Error	F
Dress (D)	.63	1	1	.57
Ethnic Group of Target (R)	11.91	1	2	11.52**
Sex of Subject (S)	20.81	1	3	2.50
Sex of Target (G)	2.13	1	4	1.26
S X D	3.68	1	1	3.30*
G X D	13.26	1	5	9.46**
Errors				
Error 1	1.11	42		
Error 2	1.03	42		
Error 3	8.30	42		
Error 4	1.69	42		
Error 5	1.40	42		

Note.-The four major main effects and those interactions that approached significance are included.

\* $p < .10$

\*\* $p < .05$

the target. Ss responded with a larger mean number of inferential statements about Whites (2.94) than about Blacks (2.57). Thus while Ss tended to describe Black targets, they were more apt to make attributive or inferential statements about Whites.

Although the main effects of intensity of dress did not attain significance, two interactions shed additional light on the dress effect. As can be seen in Table 10, S X D yielded an F ratio of 3.30 ( $p < .10$ ). Table 11, showing the comparison of the mean number of attributive responses involved in this interaction, suggests that Ss tended to make slightly more inferences about targets in muted attire but this was mainly due to the females; males, however, tended to make more inferential statements about targets in intense attire. Table 10 also shows the significant interaction of G X D ( $p < .05$ ) which yielded an F ratio of 9.46. A comparison of the mean number of attributive responses in this interaction can be seen in Table 12. As in the interaction of S X D, there was an overall tendency to attribute more to muted figures, but this was mainly due to the greater number of inferential statements made about females in muted clothes.

Relationship between Spatial Distance, Description and Attribution. It was felt that greater defensiveness might be a common factor in the tendency to stand at a greater interpersonal distance and in the tendency to give descriptive rather than inferential responses. Therefore, an attempt was

TABLE 11

A COMPARISON OF THE MEAN NUMBER OF ATTRIBUTIVE RESPONSES  
AS RELATED TO SEX OF SUBJECT AND INTENSITY OF DRESS

Sex of Subject	Intensity of Dress	
	Intense	Muted
Female	2.37	2.66
Male	3.05	2.94
Combined	2.71	2.80

TABLE 12

A COMPARISON OF THE MEAN NUMBER OF ATTRIBUTIVE RESPONSES  
AS RELATED TO SEX OF TARGET AND INTENSITY OF DRESS

Sex of Target	Intensity of Dress	
	Intense	Muted
Female	2.60	3.07
Male	2.83	2.53
Combined	2.71	2.80

made to evaluate the relationship between spatial distance and the number of descriptive statements as well as the relationship between spatial distance and number of attributive statements. To evaluate these relationships two Spearman rank correlations were computed, one between spatial distance and number of descriptive statements and the other between spatial distance and number of attributive statements. The  $r_s$  correlation between the distance from the target and the number of descriptive responses was  $-.190$ , which when tested was nonsignificant ( $t = -1.26$ ). This suggests that there was no relationship between spatial distance and the tendency to respond on a descriptive level. Similarly, the  $r_s$  correlation for spatial distance and attribution was nonsignificant, yielding an  $r_s$  of  $.213$  ( $t = 1.41$ ). Thus there appears to be no relationship between the distance adopted from a target and the tendency to make either descriptive or inferential statements.



## CHAPTER IV

### DISCUSSION

This study was designed to investigate the effect of appearance cues on interpersonal spacing. To investigate this relationship observers were exposed to Blacks and Whites photographed in intense and muted clothes and were then evaluated on the spatial distances they adopted. A secondary focus of the study concerned the number of written responses generated by the variously attired individuals. Incidental to the original design, a finer analysis of the response data indicated that there were significant qualitative differences in the characteristics attributed: some observers responded on a purely descriptive level, while others went beyond the raw information to a more inferential level.

The data indicated that taken by itself intensity of attire did not have a significant effect on interpersonal distance. Yet, combined with other variables such as sex and ethnic group of the target, spatial distances varied significantly. Observers tended to move in closer to Whites attired in intense clothes while remaining at a greater distance from those in muted clothes. It is possible that these distances were based on attitudinal factors rather than qualities of the stimulus. From the observers' comments it was apparent that persons attired in intense clothes were perceived as more interesting, outgoing, and free while persons attired in muted clothes were perceived as more introverted. This

suggests that observers tended to stand closer to a stimulus configuration perceived as novel, unique and interesting.

By contrast, observers did not vary their distances from intensely and neutrally attired Blacks. More basically however, White observers did not differ in the spatial distances adopted to Blacks and Whites. This finding is in contrast to those of an earlier study in which it was found that Whites maintained a different spatial distance from Blacks than from other Whites (Willis, 1966). These contradictory findings on ethnicity may be explained in part, by contextual differences in the two studies. In the Willis study the investigator dealt with live interactants; by contrast, this study dealt with symbolic interactions.

This raises the question of whether the present findings on spatial distance can be generalized and whether observers would behave similarly in a live interaction. Although previous studies using symbolic interactions (Little, 1968) have found replication in live interactions, it is possible that the nature of the task in this study--to form impressions of people--may have confounded the resulting spatial distances adopted. In addition to the artificiality of the experimental procedure, the feelings of uncertainty connected with being in an experiment, and the awareness by most subjects of being under observation, the nature of the task itself may have suppressed the observers' spontaneous reaction and substituted instead a distance governed by a desire to meet the

demands of the situation. Had the Ss been in an actual situation where they had no prescribed task of forming impressions and no obligation to scrutinize the targets, but yet had the choice of spacing, there remains the question of how they would have interacted. Notwithstanding these speculations, it is relevant that White college students did not differentiate in their spatial behavior between Blacks and Whites, at least in terms of a symbolic interaction.

However, Ss did differentiate significantly between Blacks and Whites in terms of their written responses. While observers responded to Whites on a more inferential level, they tended to respond to Blacks on a more descriptive basis. That is, as compared with their responses to Whites, observers were more preoccupied with the superficial aspects of the Blacks. This suggests that White observers may react to Blacks on the basis of the fact that they are Black. This is suggested both by the fact that observers did not vary their spatial distance from Blacks despite the introduction of contrasting appearance cues (while varying their distance from Whites on this basis) as well as by the fact that they did not go beyond a superficial descriptive level of response. If description as opposed to inference is assumed to be a form of defensiveness, it is possible that Whites are more defensive in responding to Blacks, and have more difficulty making inferences about them, thus casting their responses in descriptive form.

Another interesting finding was that while observers stood at a greater distance from muted figures, they tended to attribute more characteristics to them as well as to make more inferences about them (and especially about the muted females). This is particularly curious in view of the fact that intense figures were more frequently characterized as unique or interesting. It is possible that the muted figures which presented a less intense and varied stimulus configuration were more ambiguous and thus allowed observers the possibility of a wider range of responses. By contrast, the intense figures may have been more striking and less ambiguous in their total impact, thus eliciting a more global and cohesive visual impression.

The overall lack of significant difference in observer distances under the intense and muted dress conditions may be explained by several factors. One may first question the appropriateness of the clothes selected to represent the two categories. Since the clothes were selected by the investigator without validation from other sources, it is possible that they were not appropriate or representative of either category. That is, observers may not have perceived the clothes in the same manner as did the investigator and thus did not react to them differentially.

More basically there is a question of whether the theoretical dimension of intense-muted can be realized in terms of appearance and dress and moreover isolated from the array

of other variables such as posture, pose, degree of attractiveness and size that will contribute to the stimulus value of a person. For example, variations in the attractiveness of the target individuals (as evidenced by descriptions of some as "ugly" and others as "beautiful") may have confounded the results on the dress effect. Yet degree of attractiveness may serve to explain, in part, the observers' tendency to stand closer to White female targets one of whom was frequently described as very pretty.

There were also wide variations in the pose and posture of the targets. Although an attempt was made to control these variables, the persons photographed appeared to have been influenced by their clothes. Under the muted condition the target tended to stand rather stiffly, while under the intense condition he stood in a more animated manner. Unfortunately the effect of these differences are difficult to distinguish from the effect of dress but it is probable that they served to obscure the results and may have been the stimuli to which observers were responding rather than the attire. Had it been the case that the targets were posing in a manner congruent with their costumes it should have served to enhance the total stimulus effect so that observers would have had additional stimuli to aid in creating a differential reaction under the two conditions. That this was not the case may have been due to the fact that some target Ss did not vary their pose while others varied it appreciably under the two dress conditions.

In other cases the nature of the pose appeared to add new dimensions to the stimulus value of the target. For example, females in the intense condition were perceived as posing in a rather seductive manner thus adding a confounding effect. It was also noted that because of posture and pose, one of the White males was frequently adjudged to be a homosexual; interestingly enough, the data indicated that as compared with all other groups, observers stood farthest from the two White males. The nature of the pose and the set of the shoulders were also seen by some observers as indicating various degrees of aggressiveness; several Ss commented that they had reacted to the target individual in terms of the perceived aggressiveness thus moving farther back from aggressive looking figures and closer to those perceived as less aggressive.

Another variable that is difficult to extricate from the total stimulus value of a person is facial expression. Previous investigators have found that spatial distance is influenced by eye contact and facial expression (Argyle & Dean, 1965). Although there was an attempt in this study to photograph individuals maintaining a neutral expression it was difficult to achieve this end and targets displayed various facial expressions. From the Ss' responses it was apparent that these variations in facial expressions were a major concern. Moreover, several Ss suggested that expression had played a role in influencing the distance they had adopted.

In this regard it is possible to speculate that observers moved in closer to intensely attired individuals in order to obtain a better view of the face and eye region as distinct from the intensity of the stimulus effect of the attire.

Several other technical problems involving the quality of the slides may have influenced and obfuscated the results on spatial distances. Although the pictures were taken in similar settings and in front of neutral backgrounds, there were differences in the brightness and clarity of the slides. Because of these differences Ss may have stood at a distance where the picture was clearest rather than reacting to the stimulus value of the attire. The results were also obscured by differences in brightness of the picture slides. In particular one slide of a Black male was quite dark and there was difficulty seeing the details of his face. The finding that observers stood closer to Black males than Black females (but closer to White females than males) lends support to the speculation that observers needed to move in closer to dimmer slides irrespective of the individual's attire.

Another technical problem that arose had to do with the observer's initial lack of familiarity and hence hesitation to approach the targets. On the first trials Ss stood at a greater distance than on subsequent ones. This problem would have been minimized had the sequence of slides been preceeded by a practice trial to familiarize the observers with the technical procedures. In this connection there was also

evidence of a sequence effect although the effect was not found to have influenced the results on intensity of dress.



## CHAPTER V

### SUMMARY AND CONCLUSIONS

In an effort to explore man's use of space, the present study was designed to investigate the relationship between personal appearance cues (such as dress, ethnic background, and sex) and interpersonal spacing. To investigate this relationship an unselected sample of male and female Anglo-American college students were exposed to Blacks and Whites photographed in various modes of dress; the observers were then evaluated on the spatial distances they adopted from the photos.

Analysis of variance of the spatial distances adopted by observers revealed that interpersonal spacing is based on combinations of personal appearance cues rather than on any one factor such as intensity of dress, ethnic group or sex. Relevant to the area of interracial relationships was the finding that white college students did not differentiate in their spatial behavior between Blacks and Whites, at least in terms of the symbolic interaction.

A secondary focus of the study concerned the quantitative number of written responses stimulated by the variously attired individuals. To investigate this, observers were asked to describe the personal characteristics which they could attribute to the photographed individuals. Their responses were then analyzed in terms of the various personal appearance cues. Analysis of variance of the number of

response characteristics generated by the observers revealed very little; observers responded to combinations of personal appearance cues rather than to any one variable and did not differentiate between Blacks and Whites.

Although these findings might imply an equality in student's attitudes toward Blacks and Whites, further data from the study tend to contradict this. Incidental to the original design, a finer analysis of the response data indicated that there were significant qualitative differences in the characteristics attributed; and that students did differentiate significantly between Blacks and Whites. Some observers responded on a primarily descriptive level while others went beyond the raw information to a more inferential level. Students tended to describe and make more superficial statements about Blacks while making more inferential or analytic responses about Whites. The implication here is that White observers do react to Blacks on the basis of the fact that they are Blacks. This was also supported by the finding that observers did not vary their spatial distances from Blacks despite the introduction of contrasting appearance cues (while varying their distances from Whites on this basis). It might be speculated that if description as contrasted with inference is a form of defensiveness, it is possible that Whites are more defensive in response to Blacks and have more difficulty making inferences about them, thus casting their responses in descriptive form. The finding also suggests

that Whites tended not to perceive individual differences among Blacks. This suggests the possible operation of stereotyping and an attitude of prejudice toward Blacks.

This study carries with it certain implications for future research in cross-cultural interactions between Blacks and Whites. Since differences in the reactions to Blacks and Whites do not manifest themselves in the use of geographic space (at least in terms of a symbolic interaction), but rather are manifested in cognitive, perceptual and verbal processes, it would appear more fruitful to explore cross-cultural interactions in terms of cognitive and verbal distinctions.

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APPENDIX  
INFORMATION SHEET

S # \_\_\_\_\_

Px Py

M F

### INFORMATION SHEET

Name _____	Visual Correction	Y	N
Age _____	Glasses	Y	N
Class _____	Contacts	Y	N
Height _____	Bifocals	Y	N
	Limits in range	Y	N
	Scotoma	Y	N
Visual Impairment:	Y	N	

<u>Name</u>	<u>Intense</u>	<u>Muted</u>	<u>Responses</u>
Rose	_____	_____	
Stella	_____	_____	
Jinx	_____	_____	
William	_____	_____	
Homer	_____	_____	
David	_____	_____	
Lydia	_____	_____	
Gracie	_____	_____	