

PROXEMIC AND KINESIC BEHAVIOR

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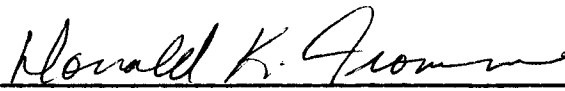
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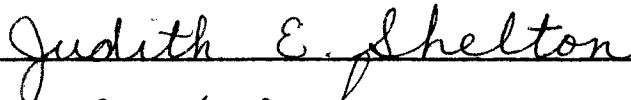
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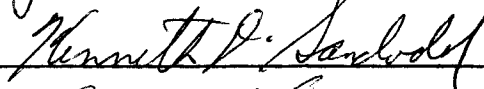
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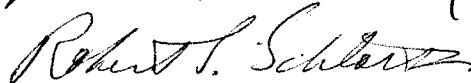
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CHAPTER I

STATEMENT OF THE PROBLEM

Purpose of the Study

It appears both logical and appropriate that the preponderance of past clinical and social psychological research has been directed toward evaluating some aspect of human verbal behavior. Man's primary means for relating to and defining himself within a social environment is through the use of highly abstract and intricate verbal language systems. Surely, one of the most salient features that differentiates man from other species is his ability to perceive and to develop instrumentalities in an abstract fashion, the major manifestation of which is the development and use of verbal language. Day to day activities of virtually all members of the human species are guided, to a large extent, by the use and understanding of verbal behavior.

Why, then, in light of the importance of verbal behavior, has a topic of growing interest in recent years been the relationships between nonverbal behavior and various other aspects of human phenomena such as communication, emotions, personality traits, interpersonal roles, cultural backgrounds, status and psychopathology? The answer may be developed on at least two different lines of reasoning. First, an increasing awareness and acceptance of evolutionary concepts originally proposed by Darwin has led many psychological researchers to draw parallels between human and animal behavior. The rationale employed here is, of course,

if modern man's genetic and social constituencies represent a process of change from an elemental to a more complex level rather than a discrete system, then it is reasonable to assume that man may still manifest the rudiments of factors similar to lower animal species, particularly the ones higher on the phylogenetic scale. Morris (1967), for example, has described numerous remarkable behavioral similarities between man and other primates. Since verbal language systems in lower species are relatively absent, non-verbal communication has been the focus of many cross-species studies. The second line of reasoning is based on repeated observations that nonverbal communication, although overshadowed by man's verbal nature, occurs frequently and is often accompanied by verbal behavior. Hand gestures, body positions, facial expressions and personal space all occurring independently as well as in conjunction with verbal behavior, suggest that important meanings may be attributed to or conveyed by nonverbal behaviors. For example, Ekman and Friesen (1969), persuing this rationale, have attempted to systematize the repertoire of nonverbal behavior according to categories, origins, usage, and coding. Mehrabian (1972), in a similar project, has evaluated nonverbal communication in an effort to ascertain the most salient nonverbal behaviors which have a systematic relationship with the communication process.

Employing both of these approaches to the problem, the primary intent of the present investigation was to elucidate the importance of a multitude of nonverbal behaviors (standing personal space, seated personal space, rate of approach, eye contact, torso lean, postural openness, emblems, illustrators, and adaptors) with respect to the interrelationships among various physical and trait attributes of experimental subjects and confederates (subject sex, subject dominance, subject physi-

cal attractiveness, and confederate sex).

Research Strategies

The multitude of nonverbal behaviors which have been scrutinized might best be classified, for the sake of uniformity and convenience, into the following modalities: (a) body motion or kinesic behavior: gestures and other body movements, including facial expression, eye movement, and posture; (b) paralanguage: voice qualities, speech nonfluencies, and such nonlanguage sounds as laughing, yawning, and grunting; (c) proxemics: use of social and personal space and man's perception of it; (d) olfaction; (e) skin sensitivity to touch and temperature; and (f) use of artifacts such as dress and cosmetics (Duncan, 1969).

The manner in which these modalities have been investigated by students of the field generally fall into one of two broad research strategies. The first strategy, termed the structural approach, involves studying nonverbal behavior or communication as a tightly organized or self-contained social system, like language. This system operates according to definite sets of rules, and the task of the researcher is to explicate these rules. The object of the second strategy is to relate the rate of occurrence of specified nonverbal behaviors, to the interaction situation, the personality characteristics of the interactants, or the reaction of judges to the interaction. This method has been termed the external variable approach (Duncan, 1969).

It is apparent that the primary methodological difference between these approaches is the use of statistics. The external variable ideology is founded on statistical concepts while the strategy approach is nonstatistical in nature. Since the present study employs the external

variable system and concentrates on proxemics and kinesics, only a summary of structural research conducted by two of the more noteworthy investigators is presented herein.

Birdwhistell's (1966) work with kinesics has been devoted to developing a coherent account of its structure, closely following the model and methodology of the American structural linguists. This approach emphasizes the careful construction of linguistic systems by starting at the lowest prestructural level of language (phonetic) and working up through the successive levels in the structural hierarchy (phonemic, morphemic, syntactic). Birdwhistell (1966) has reported that his research findings permit viewing body motion, at least insofar as American English is concerned, as a system directly comparable to spoken language. Analogous to the phoneme, morpheme, and syntactic units, Birdwhistell (1965) has reported finding, respectively, kinemes and various kinds of kinemorphs which combine to form higher level syntactic structures, similar to those in speech.

Where Birdwhistell has studied in more minute detail the internal structure of communication units as might be emitted by any single communicant, Schefflen (1966) has focused more broadly on communication on the social level--that is, the interpersonal structures of communication. Like Birdwhistell, Sheflen is less interested in the personalities of the communicants than in the structure of the communication behaviors themselves. Schefflen views communication as a cultural system consisting of successive levels of patterning that support, amend, modify, define and make possible human relationships. The goal is to reconstruct through comparative studies the basic ground rules, the units, and the arrangement characteristic of their institutionalized and transmissible

interaction.

A more detailed account of significant external variable research is presented in the following section entitled Proxemics, Dominance and Kinesics.

Proxemics, Dominance and Kinesics

As previously suggested, evolutionary doctrine supports the contention that some human nonverbal behaviors, particularly eye contact and personal space, have a counterpart in lower animal species. It is generally agreed that eye contact serves an important dominance-submission role in primates. Marler (1965) reports that a sparring monkey communicates submission by averting his gaze from the eyes of his opponent. Aggression gestures among langurs (Jay, 1965) and gorillas (Schaller, 1965) include visual fixations, while avoiding visual contact signifies submission. Moving away from and thus allowing a dominant animal more territory or space is also a submissive behavior (Simonds, 1965).

Greater personal space displayed by submissive members of primate troops probably serves an important social role in promoting survival of the species. This type of behavior enables the weaker, more submissive animals to maintain their "distance" from aggressive animals and, thereby, avoid physical encounters. Congruently, the dominant animals, through visual fixations, maintain their "status" position and control of the troop without the necessity of constantly establishing power through fighting the other animals into submission. Thus, the primate troop is a functioning social unit based, among other factors, upon dominance-submission relationships communicated through eye contact and personal space.

Morris (1967) has hypothesized that the basis for man's territoriality or group space behaviors lies within the realm of evolutionary processes. As man developed into a food growing animal his cooperative tendencies were enhanced while his aggressive tendencies were redirected toward outgroup persons who infringed upon the group territory. As family units developed, a particular type of group space developed simultaneously, resulting in the maintenance of family integrity through defense of the family in a spatial sense. Evidence of this phenomenon in contemporary society lies in the manner in which architecture is employed to promote spatial separation of the family unit. Families reside in individual living quarters behind walls and fences--barriers protecting the family from intruders and demarcating the zone of private territory. This general line of reasoning may be applied to personal as well as group space. To maintain personal integrity and security, an individual places a spatial buffer zone between himself and others. Violations of this interpersonal region constitute acts of aggression resulting in the victim being placed on the defensive, experiencing awkwardness and uneasiness. Hall (1959) views personal space as a well developed complex of patterned spatial modes of relating to, and communicating with, others in the environment. More simply defined, personal space is the area surrounding an individual, the invasion of which constitutes some manner of threat, and which he, thus, considers to be personal or his own.

Cultural factors appear to be of considerable consequence in the expression of personal space. Employing subjects from several cultural groups (Sweden, Greece, Scotland, United States, and Southern Italy), Little (1965) discovered that persons from Northern Europe display greater personal space than do persons from Southern European regions. It is

interesting to note that group stereotypes of individuals from these two geographical areas parallel this finding in the nonverbal realm--Northern Europeans are viewed as being rather aloof cold persons who "keep their distance" while the Southern Europeans are seen as a pushy boisterous lot. The tendency to keep one's distance from persons of a different racial group was shown by Addis (1966) who found that white subjects exhibit greater personal space in relation to Negroes than other whites.

It has been demonstrated repeatedly that meaningful evaluations of personal space must be made in the context of the interactions among certain characteristics manifested by the person who is emitting the nonverbal behavior and the person who is the object of this behavior. Sommer (1967), evaluating the relevance of subject and participant sex, found that males maintain a greater personal space in relation to other males than females do in relation to other females. With regard to cross-sex personal space situations, it has been suggested that females approach other females closer than they approach males, while males approach members of the same and opposite sex equal distances (Dosey and Meisels, 1969). Perceived status of another individual was evaluated in terms of seated personal space measures by Lott and Sommer (1967) who report that subjects sit closer to persons perceived as having status equal to their own than to persons perceived as being higher or lower in status. Further, Little (1965) concluded that males exhibit less personal space than do females in situations involving interaction with authority figures. Fromme and Conway (1971) report that college subjects approach a conventionally dressed young man closer than either an older man or a young man with unconventional grooming and attire.

Other studies have focused on personal space with respect to general

personality or behavioral patterns. Horowitz, Duff, and Stratten (1964) determined that psychiatric patients, including persons diagnosed as schizophrenic, approach inanimate objects more closely than people. Emotionally disturbed boys tend to manifest greater personal space (measured by the distance placed between silhouette figures) than do normal boys (Fisher, 1967). Weinstine (1965) reached a similar conclusion, observing that emotionally disturbed boys placed child figures closer to father and peer figures than mother figures, while the opposite held true for normal boys. Williams (1963) has shown that introverts tend to maintain a greater space than do extroverts, and similarly, Weinstine (1967) has suggested that persons with high affiliation needs exhibit less personal space than do individuals with low affiliation needs. The personality trait dominance, which is of primary concern in the present study, appears to be directly related to personal space behavior. Fromme and Beam (in press) and Butt and Fiske (1968) presented studies which support the notion that dominant individuals maintain smaller personal spaces than do nondominant persons. In addition, Fromme and Beam (in press) found that the nonverbal expression of dominance differs for men and women with dominant men using small personal space and quick rate of approach while dominant women use high degrees of eye contact.

Several variables which involve more or less transient psychological states have been explored with regard to personal space. Fromme and Schmidt (1972) discovered that subjects enacting the four states of fear, anger, sorrow, and neutral affect display the greatest personal space under the fear condition. Gottheil, Carey and Paredes (1968) found that personal space is correlated with a subjective attitude of interpersonal closeness. In addition, conditions perceived as stressful have been

found to induce individuals to maintain greater personal space than neutral conditions (Dosey and Meisels, 1969).

The literature indicates that eye contact and rate of approach are influenced by several of the same variables as personal space. Exline (1963), believing that eye contact constitutes a symbolic form of dominance, suggests that a person's autonomy is preserved and, thus, his dominance established when another individual's gaze is averted from his. Several animal studies previously cited (Marler, 1965; Jay, 1965; Schaller, 1965) lend support to this line of reasoning. Exline (1963) has found that women tend to engage in more mutual visual interactions and longer interactions with other women than do men with other men. With regard to visual interaction between the sexes, women engage in more mutual gazes than do men regardless of the sex of the other party (Exline, Gray, and Schuette, 1965). The influence of affective states on eye contact was evaluated by Fromme and Schmidt (1972) who concluded that eye contact is less for subjects role enacting sorrow than it is for anger, fear or neutral affect. Subjects maintained a greater degree of eye contact with intensely liked experimenters than they did with intensely disliked experimenters in a study conducted by Mehrabian (1968). Although approach speed has not been studied extensively, there is some evidence offered by Fromme and Schmidt (1972) and Fromme and Beam (in press) that affective states and dominance are relevant variables.

As previously suggested, the general concept of dominance appears to be closely associated with several nonverbal behaviors (eye contact, personal space, and rate of approach). Trait dominance, as employed in the present investigation, is defined in terms of scores attained by subjects on the Dominance Scale incorporated in the California Psycholo-

gical Inventory. This scale was constructed to assess factors of leadership ability, dominance, persistence and social initiative. Individuals scoring high on this scale tend to be seen as aggressive, confident, persistent, and planful; as being persuasive and verbally fluent; as self-reliant and independent; and as having leadership potential and initiative. Low scorers are seen as retiring, inhibited, commonplace, indifferent, silent and unassuming; as being slow in thought and action; as avoiding situations of tension and decision; and as lacking in self-confidence.

The California Psychological Inventory was designed to provide brief, accurate, and dependable subscales for the identification and measurement of personality characteristics important for social living and social interaction. The 46 item Dominance subscale utilize "true" or "false" response choices. Test-retest reliability has been reported to be .72 for females and .64 for males based on samples of 125 high school females and 101 high school males. In assessment studies of 70 medical school applicants and 100 military officers, the Dominance scale correlated .48 and .40 respectively for each of the groups with staff ratings of "dominance." In five high schools where the CPI was administered, principals were asked to nominate the "most" and "least" dominant students. Based on samples of 102 males and 102 females, it was concluded that the Dominance Scale distinguished between the two nominated groups beyond the .01 level of significance (Gough, 1957).

Poling (1972) presented findings derived from a factor analytic study of proxemics and personality traits which suggest substantial relationships among trait dominance (as measured by the CPI Dominance Scale), personal space, eye contact, and rate of approach. The results

of this study add credence to the postulate that the emission of certain proxemic behaviors constitutes symbolic forms of dominance. With regard to the present study it is, therefore, contended that high and low dominance individuals differ in the nonverbal expression of this personality characteristic.

Several of the nonverbal variables which were employed in the present study (torso lean, seated personal space, and postural openness) have been evaluated with regard to attitude inference and communication by Mehrabian (1968) who suggests that the concept of proxemics can be used to refer to the degree of closeness, directness, or immediacy of the nonverbal interactions between two communicators. His findings indicate that a positive attitude is conveyed by a communicator who maintains a small seated personal space and a forward as opposed to a backward torso lean. Further, females who display a relatively high degree of arm openness communicate a positive attitude. These conclusions are in accordance with those of James (1932) who found that a forward torso lean communicates a relatively positive attitude, whereas a backward lean or turning away communicates a more negative attitude.

Ekman and Friesen (1969) suggest that a full understanding of any instance of a persons nonverbal behavior, including any movement or position of the face and/or body, is based on discovering how that behavior became a part of the persons repertoire, the circumstances of its use, and the rules which explain how the behavior contains or conveys information. These three fundamental considerations have been termed origin, usage, and coding.

The term 'usage' refers to regular and consistent circumstances surrounding the occurrence of a nonverbal act. Usage includes (1) the

external conditions found whenever the act occurs, (2) the relationship of the act to the associated verbal behavior, (3) the person's awareness of emitting the act, (4) the person's intention to communicate, (5) feedback from the person observing the act, and (6) the type of information conveyed by the act.

Further evaluation of the type of information conveyed is based on a distinction between idiosyncratic and shared information. An act has idiosyncratic meaning if there is some regularity in the information associated with its occurrence but the association is peculiar to a single individual. An act has shared meaning if the information associated with it is common across some specifiable set of individuals. Idiosyncratic or shared meaning can refer to either the encoding or decoding of an action. An act has idiosyncratic encoded meaning if it is emitted under similar environmental or stimulus conditions by one individual, but not by others. A particular hand movement might frequently occur when the individual is exhausted, or anxious, or confronted with humiliating rejections. The act has an encoded meaning in terms of the regularity of its occurrence with those stimulus events which precede, accompany or typically follow it. The encoded meaning is idiosyncratic if the meaning is peculiar to one person, and shared if the meaning is common to a set of persons. An act has idiosyncratic decoded meaning if it consistently conveys a particular item of information to a single receiver, but not to others. A parent to his child, a wife to her husband might be such special privileged receivers who have learned the private decoding of specific acts of another person but that decoding is not known by other observers who have not shared such intimate contact with the sender. Shared decoded meaning occurs when any specifiable act of

observers usually agree about the information conveyed about the act. It should be noted that many acts may be meaningless in the sense that some movements are random and have no regularities associated with them. (Ekman and Friesen, 1969).

The term 'origin' refers to how the nonverbal behavior originally became a part of the person's repertoire, that is, the source of the action. One origin of nonverbal behavior is a relationship between stimulus events and nonverbal activity which is built into the nervous system of every intact member of the species. A reflex is the most obvious example. A second origin is experience common to all members of the species; this differs from the first origin in that one need not assume that the nonverbal behavior is inherited, but rather that it is acquired as part of the species--constant experience of the human equipment interacting with almost any environment. For example, regardless of culture the hands will be used, with or without implement, to place food in the mouth. A third origin of nonverbal behavior is experience which varies with culture, clans, family or individual. Some nonverbal behaviors are learned as part of an instrumental task in which the goal is mastery of a particular activity such as farming, driving, swimming, and in learning particular styles of eating, defecation, etc. Other types of nonverbal acts are learned as part of a social interaction, where the goal is the establishment or maintenance of a type of social interaction (Ekman and Friesen, 1969).

'Coding', the last of the three aspects of nonverbal behavior which need be examined, is the principle of correspondence between the act and its meaning. The code which describes how meaning is contrived in a nonverbal act, that is, the role which characterizes the relationship be-

tween the act itself and that which it signifies, may be extrinsic or intrinsic. An extrinsic code is one in which the act signifies or stands for something else. An intrinsic code involves an act, the meaning of which, is intrinsic to the action itself. For example, running one's finger across his throat signifies "having one's throat cut" or more generally an "undesirable outcome" and represents extrinsic coding since the person's throat is not actually cut with his finger. Striking an individual with one's fist is an example of intrinsic coding--this constitutes an act of aggression and is not merely similar to aggression.

Ekman and Friesen (1969) have delineated nonverbal behavior into five categories--emblems, illustrators, adaptors, affect displays and regulators. The first three were incorporated into the present study as dependent variables, but methodological considerations precluded using affect displays and regulators. Emblems differ from most other nonverbal behaviors primarily in their usage, and in particular in their relationship to verbal behavior, awareness and intentionality. Emblems are those nonverbal acts which have a direct verbal translation, or dictionary definition, usually consisting of a word or two. This verbal definition or translation of the emblem is well known by all members of a group, class, or culture. People are almost always aware of their use of emblems; that is, they know when they are using an emblem, can repeat it if asked to do so, and will take communicational responsibility for it. Similarly, the use of an emblem is usually an intentional deliberate effort to communicate. The origin of emblems is through learning, much of which is culture specific. Illustrators, the next class of nonverbal behaviors, are movements which are directly tied to speech, serving to illustrate what is being said verbally. Included in this category

are movements which indicate the tempo of mental locomotion, sketch a direction or path of thought, and depict spacial relationships and bodily actions. Illustrators are quite similar to emblems in terms of both awareness and intentionality. The person using an illustrator may be slightly less aware of what he is doing, and his use of illustrators may be somewhat less intentional. Illustrators are socially learned, primarily through imitation by the child of those he wishes to identify with or resemble. The term 'adaptors' has been adopted because these movements are believed to have first been learned as part of adaptive efforts to satisfy self or body needs, or to perform bodily actions, or to manage emotions, or to develop or maintain prototypic interpersonal contacts, or to learn instrumental activities. When originally learned the adaptor was associated with certain drives, with certain felt emotions, with expectancies, with types of interpersonal interaction, or in a given setting. When the adaptor appears in the adult it is because something in the current environment triggers this habit; something has occurred which is relevant to the drive, emotion, relationship or setting originally associated with the learning of the adaptive pattern. But the original total adaptive activity is rarely carried through to completion; and when seen without knowledge of the origin of the activity it may appear as random behavior. By this reasoning, adaptors when emitted by the adult are habitual, not intended to transmit a message, and usually without awareness. The assumption is made that adaptors are learned by each person early in life, and that they evolve over the course of his development with gradual modification and reduction of the total adaptive pattern so that by adulthood, and particularly in social conversation, only a fragment of the earlier learned adaptor may be seen,

and not necessarily in obvious relationship to the original purpose served by the movement (Ekman and Friesen, 1969).

Physical Attractiveness

The concept of physical attractiveness is quite amenable to the study of nonverbal behavior. Indeed, the physical appearance of individuals is a highly salient characteristic which is readily accessible for evaluation by all persons who happen to visually encounter any other person. Physical attractiveness may serve as an important nonverbal cue which influences the perception of other persons and mediates the interaction, both verbal and nonverbal, among persons.

There is evidence supporting the contention that attractiveness stereotyping may be of great significance in influencing, through social learning, the developmental path that a child will follow and his subsequent adult interpersonal behavior. Direct evidence that a child's physical attractiveness is associated with his popularity is provided by Dion and Berscheid (1971). Berscheid and Walster (in press) have concluded that unattractive boys are perceived by their peers as being more likely than attractive boys to display aggressive and antisocial behavior. Further, attractive children, regardless of sex, were perceived to be more independent than unattractive children; they seemed to their peers not to be afraid of anything, to be likely to enjoy doing things alone, and as not needing help from anyone. Clifford and Walster (in press) found that a child's attractiveness was significantly associated with the teacher's expectations about how intelligent the child is, how interested in education his parents are, how far he is likely to progress in school, and how popular he would be with his peers. Several of the

processes which may be hypothesized to mediate the relationship between physical attractiveness and popularity in children, as well as the perception of social behaviors, presuppose that adults display differential treatment toward attractive and unattractive children even in circumstances in which their behavior is identical. Dion (in press) examined the tenability of this assumption in a situation integral to the socialization process, that in which the child has committed a transgression and the socializing adult must evaluate the child's behavior and act upon that evaluation. Dion found that when a transgression ostensibly committed by a child was very mild in nature, no differences in perception of the act by adult women emerged as a function of attractiveness. When the transgression was severe, the women attributed significantly more antisocial chronic behavioral dispositions to unattractive boys and girls than to attractive children. Overall, Dion's results suggest that the socializing adult may be particularly expectant of future transgressions on the part of the unattractive child. Thus, in cases in which the identity of the culprit is in question, suspicion may settle on the shoulders of the unattractive child. This is true for yet another reason; Harari and McDavid (1969) found that the unpopular child is more likely to be "finked" upon by his peers. In terms of assignment of responsibility for a wrong doing, an additional finding by Dion is relevant. Unattractive children were seen to be more dishonest, as a general personality trait, than were attractive children who had also transgressed. Thus, the unattractive child may be at a disadvantage in protesting his innocence when blame is fixed.

Similar findings in adult populations are reported by Dion, Borscheid and Walster (in press) who hypothesized that physically attractive

stimulus persons, both male and female, are generally assumed to be more likely to possess socially desirable personality traits and are expected to lead more successful lives than are unattractive persons. The expectations of men and women concerning the personality characteristics possessed by physically attractive people were found to be virtually the same. Attractive people of both sexes were expected to be more likely to possess almost every personality trait which had been determined socially desirable in a preliminary study. Physically attractive people, for example, were perceived to be more likely to be sexually warm and responsive, sensitive, kind, interesting, strong, poised, modest, sociable, and outgoing than persons of lesser physical attractiveness. They were also seen more likely to be exciting dates, nurturant individuals, and to have better character than persons of lesser attractiveness.

Miller (1970) has found that persons low in physical attractiveness are perceived to be more external along Rotter's internal-external control dimension than those either high or moderately attractive in appearance. This suggests, according to Miller, that physically attractive individuals are likely to be perceived as masters of their fate, as individuals who behave with a sense of purpose and out of their own volition, whereas unattractive individuals are more likely to be seen as coerced and generally influenced by others or by environmental conditions. Apart from the other implications of the stereotype for interpersonal attraction and for social influence situations, this particular perception should affect the kinds of inferences people generally make about the motives underlying the acts of attractive or unattractive persons (Jones and Davis, 1965).

If it is true that children of different physical attractiveness

levels receive differing socializations, and if it is also true that differential treatment is consistent across a variety of situations-- following a negative stereotype for the unattractive child and a positive set for treatments of attractive children--then the physical attractiveness level of a person should affect his life in a number of ways. One might expect, for example, that attractive people might differ from the unattractive in their perceptions of themselves and their life situations, and in certain personality characteristics as well. The notion of self-concept is based, to some extent, on the individual's sex role identity, or the extent to which he regards himself as masculine or feminine. The strength of a person's sex-role identity is presumed to be a function of the discrepancy between the individual's inventory of actual sex-type attributes and the ideal attributes prescribed by the culture. According to Kagan (1964), several physical appearance attributes are sex-typed in that they define the concepts of maleness and femaleness in our society: for the child of eight to ten years of age, it appears that an attractive face is a primary sex-type attribute for girls; and a tall, muscular physique primary for boys. Secord and Jourard (1953) found a significant relationship, for both men and women, between the degree to which a person felt satisfied with his physical characteristics and the extent to which he was satisfied with his nonphysical characteristics. Keats and Davis (1970) determined a correspondence between the externally evaluated physical attractiveness level of a woman and the favorability of her self-descriptions. Attractive women responded significantly more favorably than women who had been judged to be of either medium or low attractiveness when they were asked to report the extent to which they believed themselves to be physically attractive, a

good date, feminine, self-confident, possessive of an engaging personality, and a likeable person. Although there is no direct evidence of a positive relationship between physical attractiveness and manipulative tendency, Singer (1964) interpreted several lines of evidence he gathered as indicating that attractive female first-borns may be especially likely to exploit their physical assets to obtain high grades from their college professors. Kirkpatrick and Cotter (1951), examining the relationship between a woman's level of physical attractiveness and her marital adjustment, concluded that there is, in fact, a consistent positive relationship between high levels of these variables.

Kurtzberg, Safor, and Cavior (1968) designed a study to evaluate the postulate that there is a relationship between physical disfigurement and social deviance. To test a specific hypothesis that plastic surgery would reduce prison recidivism, increase job success, and improve psychological adjustment, this team of researchers surgically and psychologically screened disfigured inmates of the New York City jail system and then assigned them to one of four experimental groups: Surgery Alone, Surgery and Social and Vocational Services, Social and Vocational Services Without Surgery, and a No Treatment Control Group. The disfigurement of these prisoners ranged from knife and burn scars to lop ears and tattoos. Data from follow-ups on all inmates conducted one year following their release from prison revealed that the recidivism rate of persons receiving surgery was significantly less (36% less) than that of disfigured control subjects. Subjects receiving only social and vocational services, but not surgery, recidivated at a rate 33% higher than control subjects. This group also showed poorer social relations and a tendency to become further alienated from society during the one-

year follow-up period. It should be noted that plastic surgery appeared to be most beneficial for those subjects who had facial rather than body disfigurements.

A final important aspect of physical attractiveness which bears mentioning concerns whether or not a reasonable degree of consistency exists in judging the level of physical attractiveness for both men and women. Although many varied attractiveness stimuli such as height (Feldman, 1971; Wilson, 1968), body-type (Cavior, 1970; Staffieri, 1967), socio-economic status (Elder, 1967; Sorokin, 1959) and facial features (Illiffe, 1960; Cross and Cross, 1971) have been associated with physical attractiveness, the fact remains that judges display a high consensus of opinion as to who is attractive and who is not. It has been demonstrated by Kopera, Moier, and Johnson (1971) in a seven-category facial photograph rating task that there were no significant differences between males and females on the ratings they gave the same pictures (male-female $r = .93$), but different pictures were given consistently different ratings. Murstein (1972) found a correlation of .80 between male and female judges, and an overall inter-judge reliability coefficient of .91. Cavior and Dokocki (1971) found that the inter-judge correlation obtained from the rankings of fifth and eleventh grade boys and girls of other children in the same age groups ranged from .82 to .98. Inter-judge reliabilities obtained in naturalistic situations, in which individuals are rated in person rather than as depicted in photographs, are lower than those obtained in laboratory settings employing photographic stimuli, but respectably high considering the complexity of the stimuli and the severely restricted time in which judges are typically required to make their ratings.

Experimental Hypotheses

Based on the above considerations and the findings reported by Fromme and Beam (in press) the following experimental predictions were made:

1. High dominant men will express their dominance through a small personal space and quicker approach rate.
2. High dominant women will express their dominance through a high degree of eye contact.
3. Nonverbal behavior of men and women will differ as a function of their degree of physical attractiveness.

Since the nonverbal expression of dominance with respect to the sex of the second party has not been explored in previous investigations, no specific predictions were made concerning experimental assistant sex. Similarly, only the general prediction was made concerning subject physical attractiveness since empirical findings are not available for the nonverbal expression of this attribute. The nonverbal behaviors about which no predictions were made were incorporated in the present study as an exploratory effort aimed at discovering the relevance, if any, of variates not previously evaluated in the context represented by this investigation.

CHAPTER II

METHOD

Subjects

The subjects were 40 male (mean age = 18.7 years) and 40 female (mean age = 19.2 years) students at a large southwestern university who received extra credit in an introductory psychology course for participating in the experiments. These subjects were selected from an initial pool of 120 male and 120 female subjects on two criteria: (1) Dominance-scoring in the upper or lower tertile of the same sex group on the Dominance Scale of the California Personality Inventory (CPI) (Gough, 1957). Compared with CPI norms, this resulted in a separation of high and low dominance groups by one standard deviation (raw score > 30 or < 25) for both men and women; (2) Attractiveness--after screening for dominance, the remaining subjects in the initial pool were run through an experimental procedure involving videotaping: One male and one female judge independently viewed 15 second segments of each S's tape and rated the S on a 1 - 10 scale of physical attractiveness (interjudge reliability coefficient = .79). These ratings were pooled and final selection of SS was based on scores in the upper or lower tertiles of physical attractiveness for the same sex group.

Ten male and ten female students, randomly selected from the same course, volunteered to serve as experimental assistants, again for extra

credit. Since assistant's sex was a variable of interest in the present study, this large number was required to randomize response bias due to other uncontrolled attributes of the assistants. Half of the subjects in each condition were randomly assigned to a male assistant and half to a female assistant. This procedure resulted in a completely randomized, factorial design with four factors: Subject sex x dominance x attractiveness x assistant sex.

Procedure

Prior to the experiment, the experimenter met with the assistants for about two hours, coaching them on procedure. The experimental room was rectangular in shape and adjacent to an observation room with a large one-way mirror. The experimenter observed and made a videotape recording of the subject from the observation room. The subjects were directed to the experimental room by an assistant. Upon entering, they found the assistant (for their condition) standing by a straight chair at a standard position, 140 inches from the door. Immediately next to the door was a second chair. Opposite the mirror was a free standing blackboard, marked in one inch intervals and disguised as a visual perception display unrelated to the experiment. A small table, also not related to the experiment, was located behind the assistant.

As the subject entered, the assistant stood with arms folded, concealing a cumulative stop watch, and said "Please shut the door and come over here". The assistant maintained a steady direct gaze toward S during the approach. It was thought the combination of folded arm and direct gaze would produce a highly challenging situation for the S (Fromme and Beam, 1973). Approach time was measured by the experimenter

from the moment the subject started toward the assistant until the subject halted. Simultaneously, the assistant recorded eye contact time with the concealed, cumulative stop watch. Prior work with these measures indicated from .85 to .92 interjudge reliability coefficients for approach time and .73 to .81 for eye contact time. After the subject had stopped, the assistant introduced him-(her)self and told the subject that this was a study to gather background information on students to be compared with information gathered at other universities. While the subject was being introduced, the experimenter stationed himself directly opposite the subject (to minimize parallax) and used the disguised blackboard to determine the standing personal space score. The assistant then indicated the chair by the door and said "If you'll please pull up that chair, we'll get started". Video-recording commenced after both the assistant and subject were seated and continued for three minutes while the assistant conducted a standard biographical interview. The subject was then dismissed and the assistant determined the seated personal space score by measuring the distance between the centers of the two seats. If, before departing, the subject attempted to move the chair, the assistant interrupted saying that he'd take care of the chair. Only the subject seemed to be aware of being observed and he was replaced from the larger subject pool. After all data had been collected, the experimenter visited the subject's classes to explain the purposes of the experiment and the need for the deceptions which were involved. Subjects were assured that all tapes were erased after being scored and were encouraged to ask questions or register complaints. None of the subjects seemed to be disturbed by any of the experimental procedures.

Dependent Measures

Information determining the percent eye contact, approach rate and both personal space measures was gathered during the experimental session. The other measures were determined by viewing the video tapes and making the appropriate frequency counts. Preliminary work by two scorers revealed no disagreements on judging the video taped categories, so no further attempt was made to determine interjudge reliability. Only one category was scored at a time and the scorer could replay any segments desired. Operational definitions for each of the categories were as follows:

1. Percent eye contact = $100 \times \text{eye contact time} / \text{approach time}$.
2. Approach rate - 140 inches - standing personal space (inches/second)/approach time.
3. Standing personal space - the "nose-to-nose" distance in inches between the subject and the assistant determined by judging the subject's position relative to the adjacent blackboard (see above).
4. Seated personal space - distance in inches between centers of the subject's and the assistant's seats.
5. Postural Openness - the three minute video segment was stopped every 10 seconds (18 intervals); part scores for each interval were assigned as follows: (0) - closed posture, with legs crossed, one or both arms folded across front of body; (1) - neutral posture, with either legs crossed or one or both arms folded; (2) - open posture, legs uncrossed, arms not folded.
6. Torso lean - the tape segments were interrupted as above and the total score was again the sum of 18 part scores: (0) forward lean - buttocks touching chair back, space between shoulders and chair; (1) up-

right - both buttocks and shoulders touching chair back (no subject sat on edge of chair); (2) backward lean - buttocks not touching (visible space), shoulders touching back of chair.

7. Adaptors - a frequency count over the three minute segment was made of object or self-adaptors, which frequently are repetitious and involve touching ("nervous habits"), e.g., picking lip, nose, sore; smoothing hair, moustache, clothing; scratching; rubbing; wringing hand; bouncing legs, etc.; each uninterrupted sequence was scored as one unit.

8. Illustrators - a frequency count was made as above of each uninterrupted occurrence of arm, hand, or body gestures accompanying or 'pacing' the subjects speech.

9. Emblems - a frequency count was made of nonverbal behaviors which substitute for speech and have clear semantic equivalents; e.g., shrugging shoulders, shaking or nodding head, signifying number of fingers, etc.

CHAPTER III

RESULTS AND DISCUSSION

The results of four-factor analyses of variance for each of the dependent variables are summarized in Table I. The means associated with significant three-way interactions for percent eye contact, rate of approach, and emblem usage frequency are depicted in Figures 1, 2, and 4 respectively. Figure 3 represents a proposed model relating intensity of situational or emotional cues to proxemic behavior. Means and significant simple effects for all significant interactions (including the three mentioned above) are presented in tabular form in the Appendix. The same per family error rate was assigned to all simple effects as that allotted to the overall F ratio (Kirk, 1968).

The interpretation of the results of this study must be conditioned by the rather powerful demand characteristics present in it. Previous research (Fromme and Beam, in press) has shown that high levels of assistant's eye contact have a challenging effect on subjects. In addition, the assistants in the current study adopted a rather dominant posture (with arms crossed on chest). The experimental assistants (EA) immediately started directing subjects activity (albeit politely) by telling them "come here", "go get the chair", and "tell me about yourself". The assistant also avoided the conventional means of easing the tension of meeting a stranger, i.e., by shaking hands. It was expected that dominant subjects would respond to this challenge by being more

TABLE I
SUMMARY OF ANALYSES OF VARIANCE FOR THE EFFECTS OF SUBJECT'S SEX, DOMINANCE AND
ATTRACTIVENESS AND ASSISTANT'S SEX FOR A VARIETY OF NON VERBAL BEHAVIORS

Source	df	% Eye Contact		Approach Rate		Standing Persn. Space		Seated Persn. Space		Postural Openness		Torso Lean		Adaptors		Illustrators		Emblems	
		M S	F	M S	F	M S	F	M S	F	M S	F	M S	F	M S	F	M S	F	M S	F
A	1	480.2	<1	117.6	<1	3551.1	5.66*	54.5	<1	66.6	4.73*	162.5	8.10*	151.3	2.13	.8	<1	66.6	15.4*
B	1	180.0	<1	556.6	4.10*	3604.6	5.75*	39.2	<1	27.6	1.96	0.0	<1	92.5	1.30	2.5	<1	21.0	4.8
C	1	1602.1	2.74	208.1	1.53	1593.1	2.54	520.2	2.36	0.6	<1	9.8	<1	105.8	1.49	.8	<1	6.6	1.5
D	1	9856.8	16.86**	208.0	1.53	1117.5	1.78	2101.2	9.51**	25.3	1.80	9.8	<1	11.2	<1	.2	<1	2.8	<1
AB	1	387.2	<1	324.0	2.38	495.0	<1	24.2	<1	1.0	<1	88.2	4.40*	140.5	1.97	8.5	1.07	1.3	<1
AC	1	5.0	<1	2.8	<1	37.8	<1	39.20	<1	3.6	<1	12.8	<1	0.7	<1	12.8	1.63	32.5	7.5*
BC	1	451.3	<1	1.2	<1	59.5	<1	1022.5	4.63*	2.8	<1	4.1	<1	24.2	<1	2.5	<1	7.8	1.8
AD	1	520.2	<1	10.5	<1	30.0	<1	1361.3	6.16*	0.1	<1	3.2	<1	5.0	<1	33.8	4.29*	5.5	1.2
BD	1	9.8	<1	30.0	<1	738.1	1.18	33.8	<1	1.5	<1	11.2	<1	61.3	<1	22.1	2.80	0.3	<1
CD	1	31.2	<1	27.6	<1	13.6	<1	156.8	<1	156.8	<1	23.1	1.64	5.0	<1	20.0	<1	12.0	2.7
ABC	1	54.5	<1	316.0	2.33	86.1	<1	26.5	<1	17.1	1.21	18.1	<1	20.0	<1	6.1	<1	4.5	1.0
ABD	1	3864.2	6.61*	904.5	6.66*	241.5	<1	720.0	3.26 ^a	13.6	<1	2.5	<1	14.5	<1	1.3	<1	21.0	4.8*
ACD	1	11.3	<1	27.6	<1	59.5	<1	1.8	<1	1.2	<1	5.0	<1	9.8	<1	24.2	3.07 ^a	3.6	0.8
BCD	1	14.5	<1	13.6	<1	535.6	<1	1.3	<1	3.6	<1	3.2	<1	0.8	<1	26.5	3.36 ^a	13.1	3.3
ABCD	1	884.5	1.51	1.0	<1	418.6	<1	858.0	3.88 ^a	56.6	3.73 ^a	24.2	1.20	24.2	1.20	24.2	<1	9.1	2.1
Error	64	584.5		135.9		627.2		220.9		14.1		20.1		71.1		7.9		4.3	

A Subject Sex: B Dominance: C Attractiveness: D Assistant Sex:

^a p < .10
* p < .05
** p < .01

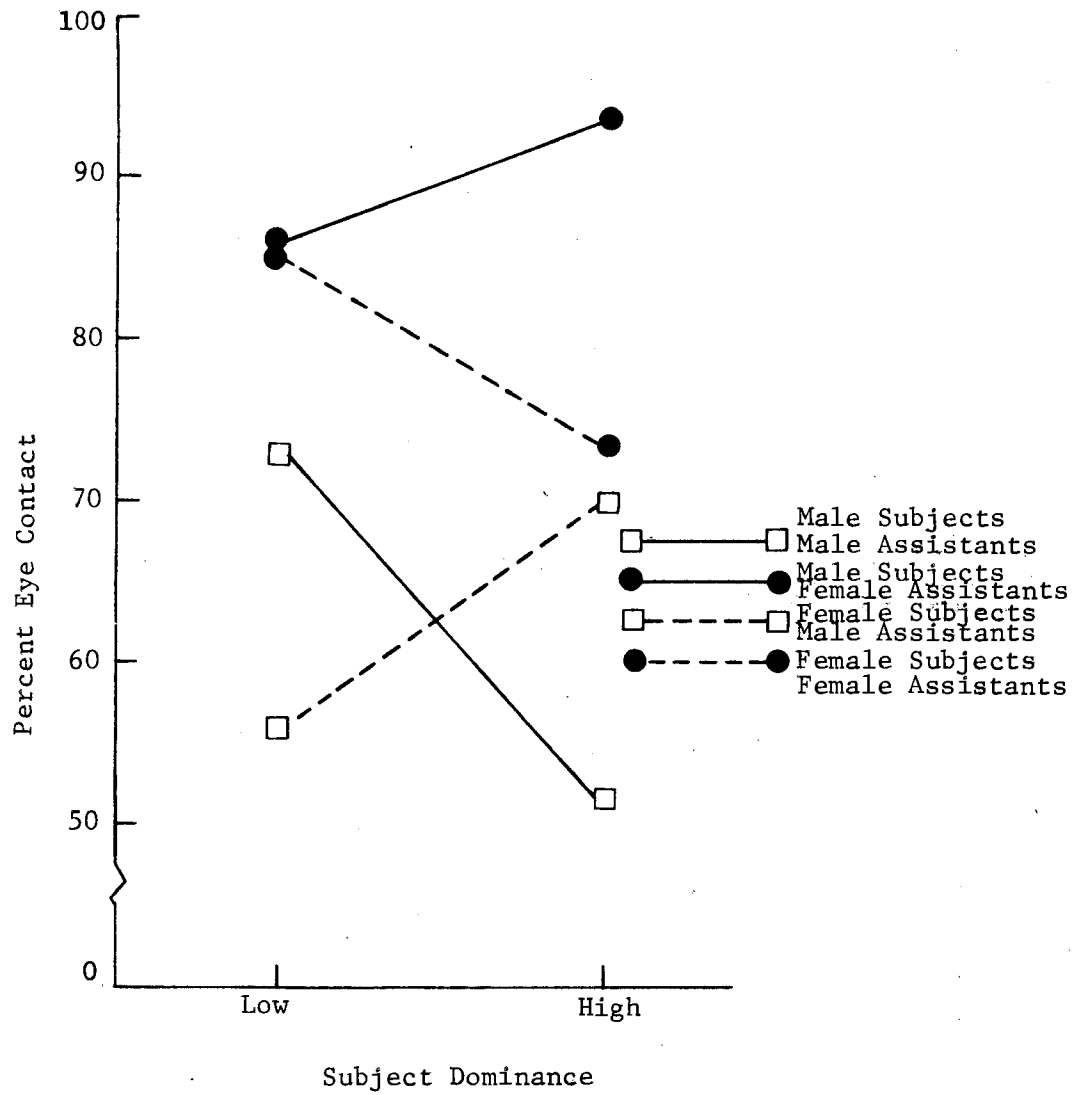


Figure 1. Mean Percentage of Eye Contact as a Function of Subject Sex, Subject Dominance, and Experimental Assistant Sex

proxemic in their behavior, while nondominant Ss would be more threatened or "put off".

Analysis of simple effects for the percent eye contact subject sex x subject dominance x (EA) sex interaction ($F = 6.61, p < .05$) revealed that all possible simple interactions were significant ($p < .025$) except for the subject sex x subject dominance simple interaction for female assistants which showed a nonsignificant trend ($p < .10$). These results confirm the prediction of more proxemic behavior for high dominants Ss, but only for cross-sex dyads. With same-sex dyads, the trend is just the opposite. Also, it may be seen that while low dominant men respond with equivalent eye contact to both sexes, high dominants make highly differential responses. The exact opposite is true for women, where the differentiation occurs only with low dominant women. Further, female EAs elicit differential eye contact from the two sexes as a function of dominance.

It is evident that these results are too complex to be understood in terms of a dominance challenge/threat alone. It may be that affiliative forces are active also and that the obtained results reflect a rather complex balance between these two influences. This interpretation is supported by the fact that women assistants, who presumably are less threatening, elicited the highest levels of eye contact. This effect was somewhat heightened for men who might have viewed the female assistants as potential partners. Similarly, male assistants elicited moderate levels of eye contact from high dominant women, who may have perceived them as potential partners, and from low dominant men, who were not in competition for a dominance position. Conversely, the low scores for dominant men may have resulted from the fact that these subjects did

feel competitive, but were being dominated by the assistant. This may well have been sufficiently threatening that the subject attempted to minimize the confrontation. Similarly, nondominant females, most vulnerable in this situation, may have desired to minimize the confrontation.

A subject sex x subject dominance x (EA) sex ($F = 6.66$; $p < .05$) interaction was also present with the approach speed measure (Figure 2). Simple effects, while similar, were somewhat different from the eye contact measure. Proxemic behavior (quicker approach) again increased as a function of dominance for cross-sex dyads significantly so for male subjects ($p < .025$). There was also a tendency toward a similar increase in male-male dyads, but a decrease for female-female dyads. This latter effect was due in part to the fact that low dominant women approach female assistants significantly more quickly than any other combination for low dominance subjects ($p < .025$). In addition to the reversal as a function of dominance for male-male dyads, the only other meaningful difference between patterns for the eye contact and approach rate measures was the absence of an overall assistant sex effect. Thus, assistant sex had no consistent effect on approach rate. All simple interaction effects were again at or very near acceptable significance levels ($p < .05$).

These results indicate that forces similar to those suggested for eye contact are operative for approach rate but with a difference. The most parsimonious interpretation would be to conceptualize approach rate as being sensitive to different levels of the balance of proxemic dispersive forces. For example, a faster approach rate might serve as a way of ending an uncomfortable situation quickly as well as starting a desired interaction more quickly. Similarly, eye contact has been shown to increase in affiliative situations and both increase and decrease in

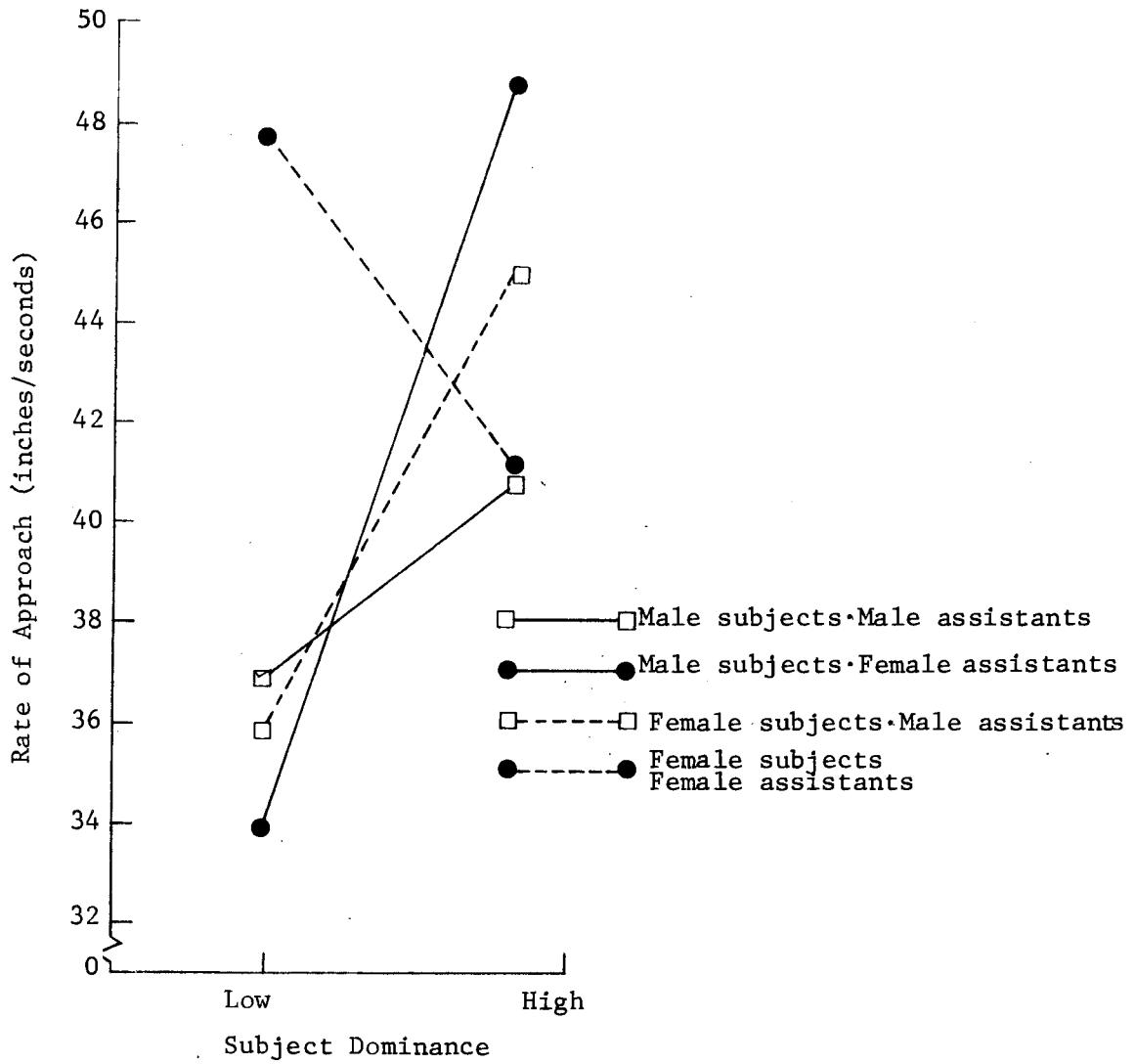


Figure 2. Mean Rate of Approach as a Function of Subject Sex, Subject Dominance, and Experimental Assistant Sex

agonistic situations (Argyle and Dean, 1965; Fromme and Beam, in press).

Figure 3 diagrams the hypothesized relationships among proxemic responses and agonistic and affiliative environmental cues or forces. This model suggests that the resultant proximity is the sum (although a multiplicative relationship cannot be ruled out) of the forces currently operative. Further, it suggests, in accordance with the original hypothesis of this experiment, that an environmental threat will lead to more proximity (fight response). As the environmental threat becomes still more intense, less proximity will result, at least as long as avoidance is possible. In contrast, it is proposed that cues eliciting affiliative behavior result in more and more proximity as their intensity increases. Finally, it is suggested that different proxemic behavioral modes are differentially responsive to the intensity of these environmental cues.

Relating this model to the results presented so far, it may be seen that for both measures, high dominant, subjects in cross-sex dyads showed more proxemic behavior than low dominant subjects. This is consistent with the assumption that the threat of dominant assistant behavior is less for high dominant subjects. However, this effect is rather dramatic for approach rate and non-significant for eye contact. This difference makes sense when it is considered that eye contact can be more proxemic, while still allowing a safe distance. In other words, fear would have to reach rather intense levels for eye contact to start decreasing, while less intensity of fear would be needed to slow a person's approach to a feared object. This accords well both with common sense and the data at hand. Thus, low dominant subjects were sufficiently threatened to slow their approach, but not enough to affect eye contact. In male-male dyads, which should enhance agonistic forces and lower affiliative

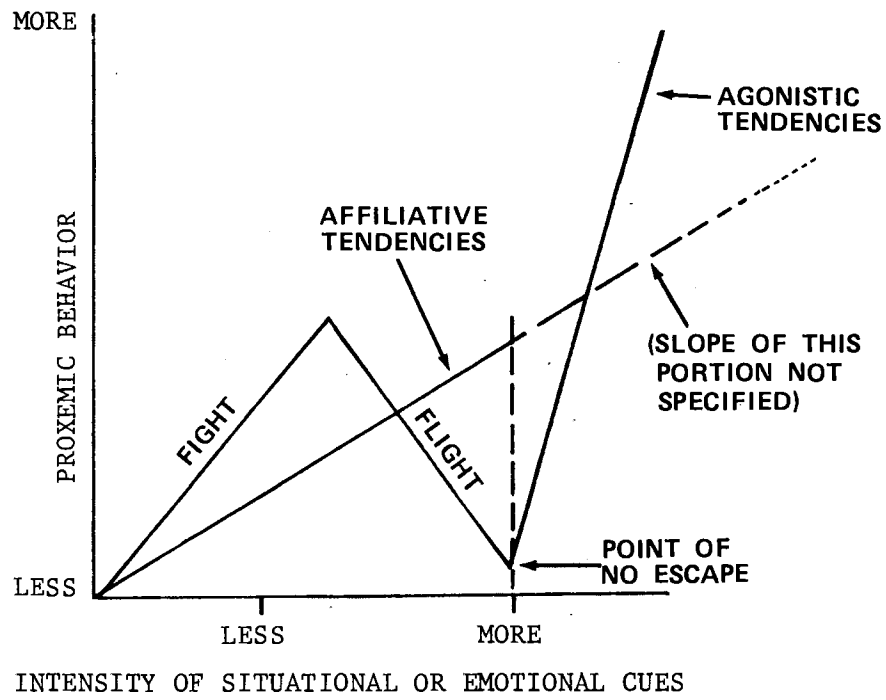


Figure 3. Proposed Model Relating Intensity of Situational or Emotional Cues to Proxemic Behavior

forces, approach rate is somewhat quicker for high dominant males, but eye contact is somewhat lower than for low dominant males. This discrepancy, if stable, can only be explained by assuming that the threat for high dominant males, was at a moderate level. This led to a desire to end the encounter and a quicker approach, but the threat was insufficient to influence eye contact which would presumably be operative at higher intensities. Conversely, the threat for low dominants was sufficiently high to trigger more proxemic eye contact. Also, the threat was sufficiently high to elicit flight tendencies on the more sensitive approach measure, thus resulting in a slower approach rate for low dominant males. A similar analysis, postulating still different threat levels, could be done for female-female dyads.

The above analysis is presented only for the possible heuristic value of the model and to illustrate some of its implications. The best that can be said in terms of the present study is that these effects might be what is happening. The obtained simple interaction effects clearly indicate that the present experimental manipulations were influential. However, the complexity of these effects and the lack of stability for more than a few of the simple simple effects (mean differences) precludes attributing any certainty to the above analysis. Further, the present study is an inadequate test of the model since the lack of specificity in the degree of threat involved and the assumption of differential sensitivity for different proxemic measures would have led to almost any set of results being compatible with the model. The main virtues of the model lie in the fact that it does not contradict common sense and that it is difficult to conceptualize an alternative model that could account the obtained effects which were stable. Finally, the model

could be tested by a study in which threat and affiliation levels are more clearly specified and varied through a wider range.

In examining the remaining dependent measures, Table I also shows a significant subject sex x subject dominance x (EA) sex interaction for emblem usage ($F = 4.8, p < .05$). Again, all of the simple interaction effects were significant ($p < .025$). Also, cross-sex dyads interaction seems important with high dominant males showing significantly more emblem usage than males in other conditions and high dominant women using significantly more emblems than did low dominant women in cross sex dyads. In general women used more emblems than did men. Figure 4 shows the pattern of interactions for emblem usage. The results suggest that high dominant subjects become more expressive in interaction with members of the opposite sex, but that dominance does not influence emblem usage in same sex dyads. Since the assistants projected a dominant image, it may be presumed that dominant subjects saw the assistants as more similar to themselves, than did low dominant subjects. If so, these results suggest that greater expressivity is associated with more similarity and hence greater attraction in cross-sex situations. It seems possible to account for the emblem usage results, without recourse to including agonistic forces. This is plausible since there is no reason to assume that emblem usage is associated with proximity and therefore no reason to assume that emblem usage would reflect variations in agonistic tendencies.

Similarly, a significant subject sex x (EA) sex interaction for illustration usage resulted from subjects in cross sex dyads using illustrators more frequently than subjects in same sex dyads ($F = 4.29, p < .05$). No dominance effects were present for this measure, but it

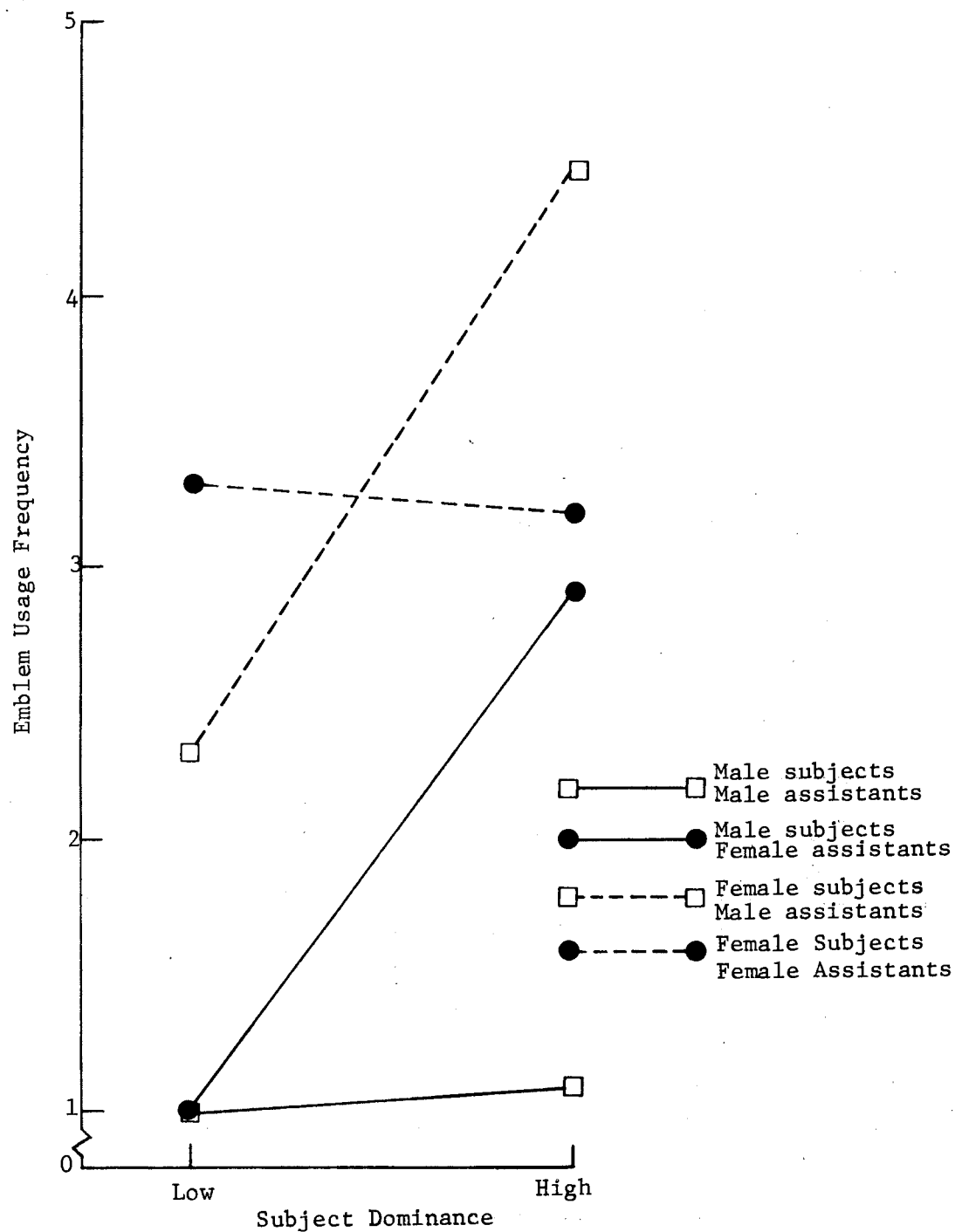


Figure 4. Mean Emblem Usage Frequency as a Function of Subject Sex, Subject Dominance, and Experimental Assistant Sex

still would seem reasonable to assume that cross sex dyads elicit greater affiliative interests than do same sex dyads. The lack of any effects for the other, non-proxemic measure adaptors, is not too surprising since the present subjects were drawn from a normal population. Following Ekman and Friesen (1969) it may be assumed that adaptors are more likely to reflect inadequacy in coping with stress, rather than stress itself or any affiliative forces.

Turning to the remaining proxemic measures, Table I shows significant main effects for standing personal space for the sex ($F = 5.66$, $p < .05$) and dominance ($F = 5.75$, $p < .05$) factors. Males stood significantly closer to the assistant at the beginning of the experiment, as did high dominant subjects. These results contrast with those of Sommer (1967) who found less personal space for women, but are similar to results reported by Fromme and Beam (1973). The discrepancies appear attributable to experimental demand characteristics. While Sommer's experiment provided primarily affiliative cues, the Fromme and Beam study and the present experiment also involved threat cues. The present results are best interpreted as supporting Fromme and Beam who suggested that due to their greater size and strength, males are more likely to chance a possible physical encounter in a challenging situation and thus approach more closely. Conservely, high dominant subjects are less likely to be threatened as much.

For seated personal space, Table I shows a significant main effect for assistant sex ($F = 9.51$, $p < .025$) and significant interactions for subject vs. assistant sex ($F = 6.61$, $p < .05$) and dominance vs. attractiveness ($F = 4.63$, $p < .05$). While more complicated than the results for standing personal space, these results are also supportive of the

type of analysis that has been proposed. Thus, males sat furthest from male assistants and closest to female assistants. Females sat an intermediate distance and did not respond differentially to the assistants. For male subjects, male assistants, presumably presented a greater threat and a lesser affiliative cue than did female assistants. Again, high threat and low affiliative pull resulted in reduced proximity, while moderate threat and high affiliation led to increased proximity. Similarly, high dominant subjects tended to sit at an intermediate distance, regardless of their personal attractiveness. For low dominant subjects, however, the more attractive group sat much closer to assistants than did the less attractive group. This suggests that physical attractiveness is a potent variable primarily when high degrees of subject dominance are not involved. Following Koats and Davis (1970) finding that more attractive women saw themselves as more likeable and self-confident, it may be assumed that more attractive subjects were more likely to assume a warmer welcome by the assistant and were thus less threatened. Again, these findings are consistent with the interpretation that moderate threat or challenge leads to more proxemic behavior, while high threat leads to less proxemic behavior.

Finally, Table I indicates significant main effects for subject sex and both the postural openness ($F = 4.73, p < .05$) and torso lean measures ($F = 8.10, p < .05$). For torso lean there was also a significant interaction ($F = 4.40, p < .05$) between subject sex and dominance. Men maintained a more open posture than did women. While this result is not surprising, it also is consistent with the general interpretation that men were less threatened than women in this experiment. Both low dominant males and females showed a typically upright torso posture. On the

other hand, high dominant subjects varied their posture significantly ($p < .005$) with males leaning backwards, and females leaning forwards. Mehrabian (1968) suggests that a forward lean indicates liking while a backward lean indicates dislike for an addressee. In the present study, it is difficult to see how the assistants might have caused high dominant females to like them, while causing high dominant males to dislike them. A differential perception of threat as a function of sex and/or dominance is, of course, a basic postulate in this discussion. However, if differential threat as a function of sex and dominance is influencing the degree of proxemic behavior, then it is difficult to explain why low dominant subjects assume the intermediate, upright position. Two possibilities suggest themselves. First, torso lean from backwards to forwards is not a continuum, but rather deviations from the upright position constitutes the relevant dimension. This suggestion is hard to evaluate and begs the question of the obtained sex differences for high dominant subjects. The second possibility recalls the model proposed in Figure 3. It could be, for example, that the torso lean measure reflects differential threat arousal as follows: for high dominant males, experiencing the least threat, proximity is low; for high dominant females, experiencing moderate threat (peak of the curve on Figure 3) proximity is high; for low dominant subjects, experiencing threat at a level high enough to elicit some fear, proximity is intermediate. Once more, the main reason for considering such an interpretation is the lack of useful alternatives.

The results of this study generally support the experimental hypotheses. The nonverbal expression of dominance differs for men and women but in a more complex fashion than has been noted in previous studies.

It is necessary to take into consideration not only sex of the subject but also sex of the experimental assistant in dyadic situations. Although few significant findings were identified with regard to physical attractiveness, it does appear that this characteristic may be of some importance in the expression of nonverbal behavior.

CHAPTER IV

CONCLUSIONS

The results of the present study support the findings of previous research concerning the importance of dominance traits and the sex of both dyadic members in influencing nonverbal communication. Additionally, the present study suggests that at least for low dominant individuals, physical attractiveness may influence illustrative nonverbal behavior. The pattern of obtained results differed from previous findings on several nonverbal measures, with males typically showing more proxemic behavior than females. The demand characteristics of the present experiment were quite different, however, in that the setting, especially the high level of eye contact, was designed to be somewhat challenging or threatening to the subject. Previous research from the same laboratories (Fromme and Beam, in press) has demonstrated that subjects do, in fact, perceive very high levels of eye contact as threatening. Demand characteristics, in other studies (e.g., Sommer, 1967; Dosey and Meisels 1969) appear much less threatening and, hence, are more likely to have tapped interpersonal attraction forces. It is suggested, therefore, that a functional analysis of proxemic behavior must consider both affiliative and agonistic cues. The varied and complicated pattern of results obtained in the present study suggest that no simple formulation of interrelationships will be adequate. A model which could explain the results was presented.

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A P P E N D I X

TABLE II
 PERCENT EYE CONTACT FOR SUBJECT SEX X SUBJECT DOMINANCE X
 CONFEDERATE SEX INTERACTION - MEANS AND
 SIGNIFICANT SIMPLE EFFECTS

Means

	b ₁ d ₁	b ₁ d ₂	b ₂ d ₁	b ₂ d ₂
a ₁	51.3	93.2	73.3	86.0
a ₂	69.7	73.7	55.2	85.5

Significant Simple Effects

d at ab ₁₁	- F(1,64) = 15.03, P < .005
d at ab ₂₂	- F(1,64) = 7.86, P < .025
ab at d ₁	- F(1,64) = 5.95, P < .025
ad at b ₁	- F(1,64) = 15.17, P < .005
ad at b ₂	- F(1,64) = 10.72, P < .005
bd at a ₁	- F(1,64) = 9.51, P < .005
db at a ₂	- F(1,64) = 8.03, P < .025

Subject Sex	a ₁ - male
	a ₂ - female
Subject Dominance	b ₁ - high
	b ₂ - low
Confederate Sex	d ₁ - male
	d ₂ - female

TABLE III

APPROACH RATE FOR SUBJECT SEX X SUBJECT DOMINANCE X
CONFEDERATE SEX INTERACTION - MEANS AND
SIGNIFICANT SIMPLE EFFECTS

Means

	b ₁	b ₁	b ₂	b ₂
	d ₁	d ₂	d ₁	d ₂
a ₁	40.7	48.7	36.9	33.9
a ₂	45.1	41.1	35.9	47.8

Significant Simple Effects

a	at	bd ₂₂	- F(1,64) = 7.11, P < .025
b	at	ad ₁₂	- F(1,64) = 8.06, P < .025
ab	at	d ₂	- F(1,64) = 10.43, P < .005
ad	at	b ₂	- F(1,64) = 10.33, P < .005
bd	at	a ₁	- F(1,64) = 9.04, P < .005
bd	at	a ₂	- F(1,64) = 5.91, P < .025

	a ₁	- male
Subject Sex	a ₂	- female
	b ₁	- high
Subject Dominance	b ₂	- low
	d ₁	- male
Confederate Sex	d ₂	- female

TABLE IV
 SEATED PERSONAL SPACE FOR SUBJECT DOMINANCE X SUBJECT
 PHYSICAL ATTRACTIVENESS INTERACTION - MEANS
 AND SIGNIFICANT SIMPLE EFFECTS

Means

	c ₁	c ₂
b ₁	56.0	54.0
b ₂	50.3	62.5

Significant Simple Effects

c at b₂ - F(1,64) = 6.74, P < .025

	b ₁ - high
Subject Dominance	b ₂ - low
	c ₁ - high
Subject Physical Attractiveness	c ₂ - low

TABLE V

SEATED PERSONAL SPACE FOR SUBJECT SEX X CONFEDERATE SEX
INTERACTION - MEANS AND SIGNIFICANT SIMPLE EFFECTS

Means

	d ₁	d ₂
a ₁	65.8	47.3
a ₂	55.9	53.9

Significant Simple Effects

d at a₁ - $F(1,64) = 15.49, P < .005$

Subject Sex	a ₁ - male
	a ₂ - female
Confederate Sex	d ₁ - male
	d ₂ - female

TABLE VI

TORSO LEAN FOR SUBJECT SEX X SUBJECT DOMINANCE INTER-
ACTION - MEANS AND SIGNIFICANT SIMPLE EFFECTS

Means

	b_1	b_2
a_1	8.35	6.25
a_2	3.40	5.50

Significant Simple Effects

a at b_1 - $F(1,64) = 12.30, P < .005$

Subject Sex	a_1 - male
	a_2 - female
Subject Dominance	b_1 - high
	b_2 - low

TABLE VII

ILLUSTRATOR USAGE FREQUENCY FOR SUBJECT SEX X CONFEDERATE SEX
INTERACTION - MEANS AND SIGNIFICANT SIMPLE EFFECTS

Means

	d ₁	d ₂
a ₁	1.95	3.35
a ₂	3.05	1.85

Significant Simple Effects

None

Subject Sex	a ₁ - male
	a ₂ - female
Confederate Sex	d ₁ - male
	d ₂ - female

TABLE VIII

EMBLEM USAGE FREQUENCY FOR SUBJECT SEX X SUBJECT PHYSICAL
ATTRACTIVENESS INTERACTION - MEANS AND
SIGNIFICANT SIMPLE EFFECTS

Means

	c_1	c_2
a_1	1.15	1.85
a_2	4.25	2.40

Significant Simple Effects

a at c_1 - $F(1,64) = 22.23, P < .005$

c at a_2 - $F(1,64) = 7.87, P < .025$

Subject Sex

a_1 - male

a_2 - female

Subject Physical Attractiveness

c_1 - high

c_2 - low

TABLE IX
 EMBLEM USAGE FREQUENCY FOR SUBJECT SEX X SUBJECT
 DOMINANCE X CONFEDERATE SEX INTER-
 ACTION - MEANS AND SIGNIFICANT
 SIMPLE EFFECTS

Means

	b_1	b_1	b_2	b_2
	d_1	d_2	d_1	d_2
a_1	1.1	2.9	1.0	1.0
a_2	4.5	3.2	2.3	3.3

Significant Simple Effects

a at bd_{11}	- F(1,64) = 13.66,	P < .005
a at bd_{22}	- F(1,64) = 6.02,	P < .025
b at ad_{21}	- F(1,64) = 5.56,	P < .025
ab at d_1	- F(1,64) = 18.41,	P < .005
ab at d_2	- F(1,64) = 8.11,	P < .025
ad at b_1	- F(1,64) = 13.60,	P < .005
ad at b_2	- F(1,64) = 8.66,	P < .025
bd at a_1	- F(1,64) = 6.07,	P < .025
bd at a_2	- F(1,64) = 5.67,	P < .025

	a_1 - male
Subject Sex	a_2 - female
	b_1 - high
Subject Dominance	b_2 - low
	d_1 - male
Confederate Sex	d_2 - female

VITA

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