SEX, STATUS, AND SOLIDARITY: ATTRIBUTIONS FOR INTERPERSONAL TOUCHING

GAYLE FRANCES SCROGGS
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SEX, STATUS, AND SOLIDARITY:
ATTRIBUTIONS FOR INTERPERSONAL TOUCHING

BY

GAYLE FRANCES SCROGGS
B.A., Occidental College, 1972
M.A., University of New Hampshire, 1976

A DISSERTATION

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in Partial Fulfillment of
the Requirements for the Degree of

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in
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This dissertation has been examined and approved.

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April 20, 1979
Date
PREFACE

The present endeavor represents to me the culmination of just one aspect of ongoing academic, political, and personal concerns. The desirability of such "overdetermination", one of my graduate professors used to assert, is undeniable. The possibility of combining such diverse motivation in a single project occurred to me while reading Nancy Henley's seminal article on power, sex, and nonverbal communication, and was reinforced by my dissertation chairman, Professor Lance K. Canon. To him I would like to express my deepest appreciation for his expertise, patience, and quiet encouragement.

I would like to acknowledge those colleagues and friends who provided constant moral support throughout my graduate school days and especially during the dissertation stage; in particular I would like to thank my sister graduate students Dr. Joyce D. Clark and Dr. Janet K. Samuels as well as those women faculty members from outside the psychology department who provided me with necessary role models, including Dr. Natasha Josefowitz, Dr. Judith Silver, and Dr. Annette Kolodny.

I must also give due credit to my mother, Helen Heller, who embarrassed me into finishing sooner than I might have by telling all our kin that her daughter already had her doctorate in psychology, and to Guy Swenson, who convinced
me better than any scientific data that status and power need not be unattractive in a woman.
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ABSTRACT

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1979

The present study focuses on attribution of status and
solidarity for nonmutual touching in female-male pairs.
Specifically, it was designed to test predictions based on
Henley's (1973b) duality model for nonverbal communication.
Henley asserted that mutual touching expresses affiliation
or solidarity, whereas nonmutual touching connotes status
or power. Furthermore, she claimed that nonmutual touch in
our culture is the prerogative of males, and that women who
deviate from this nonverbal sex norm would be misperceived
or rejected.

It was predicted that observers would deny the power
implications of a woman's touch and that they would reject
a woman more when she gave rather than received touch from
a man. Similar sex-role penalties were predicted for the
males who were targets of unreciprocated female touch. In
addition, it was predicted that the adoption of a sex-role
inappropriate touch role would have milder penalties if it was at least congruent with ascribed status. Thus, for example, it was predicted that rejection of female touchers would be attenuated when her status was higher than that of the male recipient of her touch.

Manipulation of touch role while controlling for possible confounding factors (physical environment, clothing, and facial expressions) was achieved by photographing separately two mixed-sex pairs in office settings, with each of the two female and two male actors posing once as a toucher and once as a recipient. Status was manipulated by altering the caption which accompanied the photographs; the three status conditions were female higher status, male higher status, and status unidentified.

Women and men introductory psychology students (n = 176) were given individual test booklets with instructions, treatments, and dependent variables. Subjects rated the members of each pair on fifteen semantic differential scales and gave their impressions of the interpersonal relationship (in terms of intimacy, length, relative liking and control).

Factor analyses of impressions of women and of impressions of men revealed two common underlying dimensions, power (which represented attributions of power, dominance, and forcefulness) and interpersonal attraction (which reflected attributions of warmth and likeability), which accounted for ninety per cent of the variance in the ratings.

Touchers, especially when female, were seen as having
more power than touch recipients. Male recipients were seen as least powerful, and there was a slight tendency for this effect to be magnified as the female toucher's status increased. High status figures were seen as wielding more control over the relationship, but the effect was weak. The predicted status by touch role interaction did not obtain. Attributions of interpersonal attractiveness were not affected by touch role or status manipulations.

In summary, predictions concerning rejection for sex-role violations of nonmutual touch norms were not upheld. However, the results lend considerable support for the duality model's assumption that dimensions of power and affiliation characterize interpretations of nonverbal behavior and for the corollary that nonmutual touch conveys power. At least for college students rating photographs of persons interacting in office settings, the use of nonmutual touch enhanced the attributions of power without detracting from the attractiveness of women or men. The results suggest that overt behavior has greater impact than sex—or even status—in creating impressions of power, a finding which could allay any feminist fears that women are prevented from assuming powerful roles in transactions with men. The need for further experimental studies of a parametric nature and for field studies with greater ecological validity was stressed.
I. INTRODUCTION

Nonverbal behaviors have long been construed as expressions of emotion and of solidarity (e.g., Darwin, 1872; James, 1932; Ekman & Friesen, 1975). More recently there has been a growing recognition of yet another dimension in nonverbal communication— that of status. Ethologists, sociologists, linguists, and others (notably, Goffman, 1956; Hall, 1966; Scheflen, 1972) have stressed the role of nonverbal cues and gestures in reflecting and reinforcing the existing social hierarchy.

Models of nonverbal behavior which emphasize solidarity or emotional expression have rather different implications from models which include status factors, especially for our understanding of the sex differences which reliably pervade the results of studies in nonverbal communication. For example, should the finding that women spend more time looking at their male partners during conversation be interpreted as an indication of women's greater affiliative tendencies— or of women's subordinate status in our culture, requiring them to monitor carefully men's behavior and reactions (Rubin, 1970)?

An appreciation of both solidarity (which subsumes affiliation and liking behaviors) and status dimensions, as well as other factors, may be essential for a fuller understanding of nonverbal transactions. Furthermore, it appears necessary to investigate the salience of these two...
dimensions in "common-sense psychology" since—regardless of their validity—the perceptions of naive observers can affect interpersonal behavior (Heider, 1958).

The present study is an attempt to explore experimentally the attributions of affiliation and power that naive observers make for touch between women and men of varying relative status. The aim is to contribute to our understanding of the roles that status and sex factors play in the attributions for a behavior which may have solidarity or status connotations. Do the effects of status outweigh the effects of sex—or vice versa? That is, might sex, for example, act as a "central trait" (Asch, 1946), and thereby overshadow the effects of status in the process of impression formation? Are women, even when described as holding high status or depicted engaging in high-status behaviors such as nonmutual touch, inevitably seen as "the second sex" (see de Beauvoir, 1953)? Do observers deny the power implications of women's gestures and reinterpret them in terms of affiliation, as suggested by Henley (1973b)?

Practical implications of theoretical questions in social psychology require serious consideration, too, for those who subscribe to the Lewinian notion that a good theory is a useful theory (Lewin, 1948). In the present case, one might consider the following: If attributions of power depend not on overt behavior or legitimate status but instead on the actor's gender, of what value are attempts to assimilate women into power establishments in a sexist
society by training them in self-assertion and other high-status role behaviors? If the crux of the issue is the pervasive belief in the inferiority and subordination of women, then the solution lies less in changing women's "role behaviors" and more in altering traditional patterns of sexist prejudice.
II. LITERATURE REVIEW

In the hundred years since Darwin (1872) first proposed that nonverbal behaviors were inherited remnants of more complex actions, research in the field has increased dramatically. Sporadic and unsystematic, early work attempted but failed to validate Darwin's hypotheses of the universality of facial expressions and their interpretations, although recently such support has been found (Ekman, Friesen, & Ellsworth, 1972).

After 1950 interest in the communicative significance of nonverbal behaviors developed independently in numerous disciplines, including anthropology, ethology, psychiatry, speech and communication, sociology, and in psychology. Although defining an area in terms of what it excludes—i.e., verbal behavior—is not entirely satisfactory, reviewers generally agree that the following should be included in the field: paralanguage (vocalizations and vocal qualities), kinesics (body movement, posture, and gesture), proxemics (personal space, interpersonal distance, and sometimes territoriality and crowding), facial expressions, eye contact, touching, and (although rarely studied) olfaction.

Functions and Significance of Nonverbal Behaviors

The relevance of research on nonverbal behaviors lies in the fact that they serve numerous functions—not all of them redundant with strictly verbal output. It has been
suggested that nonverbal messages, because they are presumably less under conscious control than those in the verbal channel, may be more "honest" (Ekman & Friesen, 1968) and more subtle (Henley, 1973b) than verbal ones.

The expressive value of nonverbal cues has been well appreciated, and perhaps overemphasized relative to other functions, Scheflen (1972) suggests. In addition to expressing emotional states, nonverbal behaviors also serve communicative functions. They can help regulate social interactions (e.g., conversational speaking turns—see Kendon, 1967), signal information (e.g., a head nod), or modify the interpretation of other ongoing behaviors (e.g., a wind—see Bateson, 1956). That interpersonal attitudes of solidarity—including liking, intimacy, and affiliation—can also be conveyed nonverbally has been observed often (cf. Argyle & Dean, 1965; Ekman & Friesen, 1968; Fast, 1970; Montagu, 1970). The nonverbal communication of status or power relationships, has been less recognized by psychological researchers than by ethologists and anthropologists (e.g., Hall, 1966) who have long been aware of status connotations of proxemic and kinesic cues in field settings.

Nonverbal cues may also outweigh verbal content in importance, particularly when the two channels are in conflict. Argyle et al., (1970) found impressions of speakers were affected by both verbal and nonverbal cues, but that the latter factor accounted for four times as much variation in subjects' responses as the former. Insofar as one's
behavior toward another is mediated by one's impressions of that person, that person's nonverbal behavior becomes a significant determinant of social interaction. Thus it seems essential to study not only the determinants and functions of nonverbal communications, but also their consequences, both attributional and behavioral.

Research Approaches to Nonverbal Communication

Two approaches to the study of nonverbal behaviors have been distinguished by Duncan (1969), the structural approach and the external variable approach. In disciplines such as psychiatry and anthropology, the structural approach predominates, with researchers attempting to devise transcription systems and to identify patterns—characteristic sequences or clusters of behavior—in various nonverbal channels. This structural approach to nonverbal communication is analogous to the nonexperimental psycholinguistic approach to language.

A second approach to investigating nonverbal behavior is the external variable approach adopted by most research psychologists, using statistical (and often experimental) methods to relate nonverbal phenomena to variables which are extrinsic to the nonverbal behavior of interest. Situational and attributional factors as well as personality and demographic variables would fall into the category of "external variables."

Both of the above approaches to nonverbal communication
research are necessary to the field, and neither one can claim to be more fundamental (Duncan, 1969). Each perspective has contributed to our present knowledge of nonverbal behaviors, particularly in the areas of paralanguage, proxemics, and eye contact. Research now must be extended to more neglected nonverbal behaviors—including olfaction and touch.

Review of Tactile Communication Research

Despite the considerable increase in research in some areas of nonverbal communication in the last two decades, interpersonal touch has received only minimal empirical attention. A search of the empirical literature by the present author revealed the following published articles on interpersonal touch:

1. Questionnaire/survey studies: Jourard (1966); Jourard and Rubin (1968); Nguyen, Heslin, and Nguyen (1975); Watson (1975); Nguyen, Heslin, and Nguyen (1976); and Rosenfeld, Kartus, and Ray (1976).


Few of the above studies were published in psychological journals, and none of the studies appear to be a definitive or "classic" study, i.e., one which is typically cited by subsequent authors. Touch is covered briefly by Duncan in his 1969 review of nonverbal communication research, and there apparently has been no review devoted solely to
tactile communication since 1957 (Frank, 1957). There is clearly a need for investigation of interpersonal touch, both experimental and nonexperimental, from both the "external variable" approach and the structural approach, and for an integration of data and explanatory models within psychology.

Studies of structure of touch. Whereas transcription systems have been devised and complex patterns identified in kinesics (e.g., Birdwhistell, 1970) and eye behavior (e.g., Kendon, 1967; Goffman, 1963), structural aspects of touch have yet to be described. Without exception, the empirical studies found in the present literature search could be more accurately characterized as "external variable" research.

Hall (1963) created a notation system for proxemic behavior, including posture, kinesthetic cues, thermal cues, olfaction, voice loudness, and touch. His seven-point touch scale, whose heuristic value has not been demonstrated, makes the following distinctions:

(0) holding and caressing
(1) feeling and caressing
(2) prolonged holding
(3) holding
(4) spot touching
(5) accidental touching
(6) no contact

In addition to refining a transcription system for transactions involving touch, researchers will have to clarify their current implicit definitions of interpersonal touch. (It may be worth noting that the authors cited in the present review omit without explanation any consideration of
physical aggression from their discussions of touch.)

External variable studies of touch. Psychologists who have adopted the external variable approach have paid little attention to interpersonal touch, focusing instead on visual interaction ("eye contact") and proxemic behavior. Research in those areas, however, may suggest important determinants of touch (and other less studied channels of nonverbal communication) since findings are often highly reliable. In surveying the literature one is struck by the pervasive effect of variables involving liking and affiliation, sex of interactants, and (to a lesser extent) power and status. For example, empirical data clearly support the generalization that both sexes look more while listening than while speaking, but that females look more at their partner than do males (Duncan, 1969). It has also been demonstrated that people gaze longer at those whom they like or love (Mehrabian, 1971; Rubin, 1970), as well as at those from whom they require approval (Henley, 1977). The findings in personal space studies parallel those in visual interaction research: sex, affiliation, and power are all important variables (although they have not been studied equally thoroughly). Whether such consistency will be found in investigations of interpersonal touch remains to be seen. Results of published studies of touch are discussed below with reference to those three factors.

Sex as a factor in interpersonal touch. Sex of interactants appears to be a significant factor in determining
both the frequency and interpretation of interpersonal touch. Surveys of college students indicated that considerably more touching occurs between members of mixed-sex pairs than same-sex pairs. Students also reported engaging in more touch with opposite-sex friends than with parents, with touch between father and son being reported least frequent of all. These findings were consistent across three separate samples (Jourard, 1966; Jourard & Rubin, 1968; and Rosenfeld et al., 1976).

The meanings people attach to touches received from the opposite sex in the context of an intimate relationship have been investigated by Nguyen and colleagues (1975; 1976). Their surveys of college students revealed that sex and marital status are both significant factors which may interact in the interpretation of touching. Their first study found, for example, that although females were likely to differentiate touches according to body location, men were more likely to pay attention to the manner of the touch. In a second study married men, as compared with single men and married women, attributed less pleasantness to sexual touches, a finding which the authors attributed to the greater sexual demands made by "liberated" women.

In an observational study of interpersonal touching, Henley (1973a) reported that across a variety of field settings, men were more likely to touch women than vice versa; furthermore, higher status persons initiated touch more often than those of lower status. Watson (1975) also
confirmed the importance of sex of interactants as a determinant of interpersonal touch between staff and patients in a geriatric nursing ward. He reported that (p. 111) "increasing distance of body regions from genital zones, same sex between persons, high social status of the initiator, and a relative absence of physical impairment" in the patient were all conducive to touching behavior.

**Person variables in the study of touch.** Person variables other than sex may also prove important determinants of touching behavior. Age, cultural background, and psychopathology are just a few which merit research attention. Hall (1966) has provided ample anecdotal evidence for the impact of culture on proxemic behavior. Using Hall's (1963) proxemic notation system, Watson and Graves (1966) compared the interaction of conversational groups of American students with those of Arab students at an American university, reporting that the latter were more apt to engage in a variety of proxemic behaviors, including touch.

In nonverbal communication research the study of person variables has generally taken precedence over the study of situational and attributional factors (Duncan, 1969). Yet, given the consistently significant effect of person variables in published data, it does seem wise to continue the inclusion of such factors as sex and culture while extending research to include other kinds of factors such as setting or context. The interpersonal touch research cited
above makes it quite clear that sex is an important factor in touching and suggests that it may interact with other variables.

Intimacy and affiliation as factors in touching.

Popular writers (e.g., Fast, 1970; Montagu, 1971; Morris, 1971) and psychological researchers (e.g., Lewis, 1972; Jourard, 1966; Jourard & Rubin, 1968) have tended to stress the interpretation of touch as an expression of solidarity—of attachment, affiliation, and intimacy. Early research clearly demonstrated the important nurturing functions of interpersonal touch in attachment relationships. The positive impact of touch on the intellectual, emotional, and social development has been noted in young monkeys (Harlow, 1958) and in human infants (Bowlby, 1969; Spitz, 1946). Research with college students and other adults has also tended to focus on the occurrence of touch in the context of intimate or affiliative relationships. Jourard and Rubin (1968, p. 74), observed that the highest frequency of touching was between opposite-sex friends, concluding that "touching is equated with sexual intent, either consciously, or at a less-conscious level" in American culture without investigating touching in nonintimate relationships.

Three separate experiments tested the effects of interpersonal touch, confirming the investigators' hypotheses that touch has positive emotional and social consequences. Boderman et al. (1972) reported that female subjects found a female confederate more attractive when they engaged in
touch rather than when they did not. (During what they believed were extrasensory perception trials, they explored each other's face.) College women who were touched by library clerks of either sex reported more positive affect and evaluated the library and its personnel more highly than women who were not touched by the clerks (Fisher et al., 1976). In asking male subjects to return a dime planted in a phone booth, female experimental confederates found a higher rate of compliance in the touch rather than no-touch condition (Kleinke, 1977). These three studies demonstrate that touch can enhance the positive nature of social interaction, perhaps by increasing the degree of interpersonal attraction or involvement.

Status and power as factors in touching. The concern for the emotional expressiveness of nonverbal behaviors is characteristic of Western thought and was expounded by no less an authority than Darwin, Scheflen (1972) observes. However, as Scheflen (p. xii) states, the dichotomous notion that language expresses thought and the body expresses emotion is being superseded by the view that nonverbal cues maintain social bonds and power structures.

Efron (1941), Birdwhistell (1952), and since then many others have described body movement as a traditional code which maintains and regulates human relationships without reference to language and conscious mental processes. And the ethologists have described a great many behaviors that occur among all primates to bond them together and sustain their power structures. In this new tradition, language and thought ... are believed to comment on, make judgments about, and conceal or rationalize actions that are already going on.
Henley (1973b) has also argued that nonverbal behavior serves to sustain power hierarchies. As she describes it (p. 184), the continuum of social control "extends from... internalized socialization (the colonization of the mind) at one end to sheer physical force (guns, clubs, incarceration) at the other." She places nonverbal gestures between these two extremes; they represent what could be called the "micro-political" structure which helps maintain the larger political-economic structure of society.

Mehrabian (1971) emphasizes the immediacy (liking and approach) and power of nonverbal communication in his book, *Silent Messages*. With liberal use of anecdotal evidence he argues that low-status persons assume postures that indicate weakness, speak softly, and are more tense and watchful in the presence of higher-status persons.

The asymmetry of low- and high-status behaviors was earlier documented by Goffman (1956). Insight into the status connotations of touch is provided by his description (p. 74) of the "touch system" operating in a hospital which he observed:

The doctors touched other ranks as a means of conveying friendly support and comfort, but other ranks tended to feel that it would be presumptuous for them to reciprocate a doctor's touch, let alone initiate such a contact with a doctor.

Watson (1975) reported similar findings among staff and patients in a geriatric nursing ward: higher-status persons, i.e., nurses, were more likely to touch patients than were
lower-status staff members, i.e., orderlies. Furthermore, he observed instances in which nurses rejected the touch of patients by stiffening and drawing back.

That initiation of touch is the prerogative of the higher-status person in a relationship was further illustrated in field observations (made by an observer blind to the hypothesis), Henley (1973a) reported. That same study, cited earlier, also revealed that males were more likely to initiate touch with females than vice versa. In this male-dominated society, other sex differences in nonverbal behaviors also tend to parallel the status norms, Henley (1973b) maintains, with males more likely to exhibit behavior associated with higher status (e.g., claiming greater personal space, interrupting others who are speaking, staring, not smiling, and so on). She further contends that defiance by women of the current power and sex norms will probably be ignored or reinterpreted in terms of sexist stereotypes. For example, she suggests that a woman who initiates touching with a man will probably be seen as desiring sexual intimacy, in accordance with the duality model (explained below).

The Duality Model for Nonverbal Communication

Both status and solidarity dimensions are present in nonverbal exchanges, as the above studies indicate. The question arises then as to when a particular gesture or behavior conveys status (or power or dominance) and when it conveys solidarity (including liking or sexual desire).
Reciprocity of behavior seems to be the key, Henley (1973b) explains. She has extended the linguistic duality model of Roger Brown and his colleagues (1965) to the nonverbal domain. The duality model has been used by linguists to explicate the rules for usage of familiar and formal personal pronouns in foreign languages (e.g., du vs. Sie; tú vs. Usted) and terms of address (e.g., first names vs. titles) with these two postulates:

(1) if form X is used between intimates, it will be used to inferiors

(2) if form Y is used between strangers, it will be used to superiors

Furthermore, the model states that the right to move from a more formal style of address to a more intimate one belongs to the superior person in the relationship.

Previous studies in nonverbal communication are cited by Henley to enhance her contention that these rules govern nonverbal social interaction as well as terms of address, but systematic research has yet to be undertaken.

Mutuality of interpersonal touch. Mutuality of nonverbal gestures is the key to interpretation: mutual behaviors characterize solidarity relationships whereas nonmutual behaviors characterize status relationships. The duality model thus illuminates some of the status or power norms which govern such diverse behaviors as staring, smiling, demeanor, and touch. Henley (1977, p. 95) provides some striking examples:

Think of interactions between these pairs of persons of differing status and picture who
would be more likely to touch the other--put an arm around the shoulder, a hand on the back, tap the chest, hold the wrist, and so on: teacher/student; master/servant; police officer/accused person; doctor/patient; minister/parishioner; adviser/advisee; foreman/worker; businessman/secretary.

In our culture one would probably expect to see the higher status person touching the subordinate than vice versa, except during such circumscribed activities as grooming—during hair dressing, manicures, massages, and the like. On the other hand, in relationships without status differences, one would expect reciprocity of touch: strangers would each avoid touching the other, and friends would engage in mutual touch.

Parallels between sex and status norms for touch. Sex differences in interpersonal touch—and perhaps other nonverbal behaviors as well—may be better accounted for by the duality model than by more frequently encountered explanations. Touch has been rather consistently studied and interpreted in the context of intimate relationships: Nguyen et al. (1975; 1976) chose to study the meaning of touch for spouses and dating couples, while Jourard (1966) and Jourard and Rubin (1968) focused on touching among friends and family members. In those studies touch was interpreted as an intimate or sexual gesture, but Henley prefers to account for the data in terms of power. In her study (1973a), she found that females received more touches from males than vice versa, a finding which she argued reflected the subordinate status of women in our society.
If touch were an indication of intimacy or affection, then one would expect females to initiate as much touching with males as males do with females, she reasoned. Intimacy is conveyed by mutual touching—nonreciprocated touching and initiation of touch appear to be the prerogative of higher status persons, who, in our sexist society, are generally male. Henley thus concluded that the sex norms for touch and other nonverbal behaviors tend to parallel the status norms. At present, however, the only empirical evidence to support her conclusion is her single field study (1973a). Data from prior studies really do not test her hypotheses, and her anecdotal evidence is merely suggestive.

Violations of power and sex norms for nonverbal behavior. How are persons perceived who break the alleged nonverbal norms for their sex? What attributions do observers make for role reversals, e.g., a woman who initiates touch with a man or a man who is the passive recipient of a woman's touch? There have been no studies of violations of touching norms, and the data from studies of conceptually similar behaviors are sparse and contradictory.

Kanter (1977) concluded from her observations of a large industrial corporation that women in high status positions—due to their token representation—are forced into playing limited and caricatured roles. Such women in her study were often mistakenly identified by clients as secretaries or wives or assistants, and treated accordingly. Male colleagues tended to assimilate token women into one of four
stereotyped roles—the nurturant mother, the seductress, or the "pet" (or mascot). If she resisted entrapment into one of those three roles, she was likely to be classified as an "iron maiden" or a "women's libber" and regarded with suspicion by her co-workers.

A more optimistic future for the assertive woman can be predicted from the recent study by Erickson, Lind, Johnson, and O'Barr (1978). She and her colleagues manipulated verbal assertiveness and sex of witness in a simulated trial and found that female and male witnesses were rated more favorably on dimensions of credibility and attractiveness than were unassertive witnesses of the same sex. In fact, when testimony was presented orally rather than in transcribed form, it was the powerless male who was seen as most unattractive.

Penalties for sex-role reversals by women and by men were reported by Costrich, Feinstein, Kidder, Marecek, and Pascale (1975). Their subjects rated passive-dependent men and aggressive-assertive women in group discussions as less likeable and less well-adjusted. Thus it appears that men as well as women may experience social rejection for violating traditional norms.

The effect of role reversal (role expansion?) for men seems more consistently negative in the above studies, which are admittedly few in number, than the effect for women. Is it the case that women are trapped in a double bind? Their lack of assertive behavior would suggest that they are
unqualified for positions of power and status; yet, on the other hand, any attempt to exercise power might be reinterpreted in terms of prevailing—and generally negative—stereotypes. Perhaps in some circumscribed arenas, such as a courtroom, the assertive woman is evaluated favorably because, in speaking without hesitation or doubt, she is performing the narrow, well-defined role of the good witness. Other roles women play may not be so clearly defined. A woman who acts with similar confidence and directness in other situations, e.g., a business office or a college classroom, may risk being labeled "aggressive" and "unfeminine."

What are the penalties for the woman who, in exercising the privileges of higher status, also breaks the existing nonverbal norms for her sex? Are there consistent penalties for men who violate sex norms by performing behaviors associated with low status?

Both Goffman (1956) and Henley (1973b) as cited above, describe the power connotations of initiating touch or giving touches which are not reciprocated. The present study was designed to illuminate issues of sex and status through investigation of attributions of power and affiliation for nonmutual touches between women and men.

Predictions

It was predicted that observers would react to a woman's use of nonmutual touch by denying its power implications and reinterpreting it as an affiliative gesture or by rejecting the woman for breaking the touch norm for her sex.
Men, too, would suffer from engaging in sex-role reversals in a situation involving touch, it was predicted. It was hypothesized that relative to men touchers, male recipients of touch would be seen as less attractive.

Furthermore, it seemed likely that ascribing high status to an actor might bolster the actor's perceived right to administer unreciprocated touches, and that ascribing low status would make it more acceptable for the actor to receive a nonmutual touch. Thus it was predicted that rejection of sex-role transgressors would be less severe when the nonverbal behavior was at least congruent with ascribed status. For example, the negative impact of a woman's touch might be attenuated if she were described as of higher status than the man she was touching.

In addition to affecting impressions of the individual actors, the above factors were predicted to affect the perception of the nature and the duration of the interpersonal relationship. If observers were inclined to deny power implications of female touch, they may also be more likely to assume that such touch takes place in the context of an affiliative or long-term relationship rather than in a relationship characterized by power differentials and a lack of intimacy.
III. METHODS

Subjects

Women (n = 95) and men (n = 81) students in introductory psychology classes at the University of New Hampshire during the spring of 1978 participated in the experiment in partial fulfillment of course requirements.

Procedure

Participants in the study were tested in groups of four to eight. The female experimenter randomly distributed to each participant a booklet containing an introduction to the study, the experimental manipulations, a questionnaire including the dependent measures, manipulation checks, and postexperimental questions, and an answer blank. Subjects were requested to open their booklets and follow all of the instructions completely. The booklet introduced the experiment as a study of impression formation, but specific experimental variables and predictions were not mentioned until all subjects had completed the experiment and returned the answer blanks. At that time, the experimenter provided a thorough explanation of the study, answered subjects' questions, and thanked them for their participation. They were asked to refrain from discussing the study with other students until the end of the semester.

Manipulation of Independent Variables

Touch Role: Toucher vs. Recipient. Four black and white (5.8 cm x 8 cm) photographs, each depicting a female
and a male engaged in interpersonal touch, were used to operationalize the toucher/recipient of touch factor. Two mixed-sex pairs of young adults (all in their early thirties and blind to all hypotheses), dressed in tailored suits each posed for two photographs in office surroundings (see Appendix A). For each pair there was one picture in which the woman's hand rested upon the outside of the man's upper arm and one in which his hand rested similarly upon her arm. Photographs showed the figures from the knees up, and for one pair there was a noticeable difference in height, with the male being taller than his partner. Two sets of models were used to lessen to some degree the possibility that unique physical characteristics of the female and male models were confounded with the independent variable of sex of toucher/recipient.

Controlling for facial expressions. In switching from the role of toucher to the recipient role, stimulus figures may have inadvertently altered facial expressions, thus introducing a confounding with the touch factor. (Such confounding may actually exist in natural situations.) To test this possibility, control conditions were introduced in which subjects were exposed only to the portion (2.8 cm x 8 cm) of the photograph depicting the pair from the shoulders up— that is, the portion with no touching. If each figure changed her/his expressions as she/he shifted roles, one would expect to find a significant effect for touch role in the control conditions.
Relative statuses of toucher and recipient. Relative statuses of the two stimulus figures in each photograph were manipulated by varying a written paragraph which preceded the photograph in the treatment booklet (see Appendix B). For the female-higher status condition, for example, the paragraph read as follows:

On the following page is a photograph of two persons, an office manager whom we can call Sue Jones and her assistant Jim Clark in an office on a typical day.

For the male-higher status conditions, the names were reversed; and in the status-unidentified condition, no titles were given. By crossing the status variable with the sex of toucher variable, six between-subjects treatment conditions emerged.

Other factors in the design. Although the study was designed primarily to assess the effects of sex and relative statuses of persons involved in touching, it also permitted evaluation of three other factors: (1) sex of subject, (2) stimulus pair, and (3) order of presentation of stimulus pairs. Each subject was exposed to two photographs, one of stimulus pair A and another of stimulus pair B, but the rest of the other independent variables were never identical for the two pictures. Half the subjects saw stimulus pair A first, whereas the other subjects were presented with stimulus pair B first; this counterbalancing permitted assessment of the effects of order of presentation. An order effect was of no theoretical interest, thus it was
decided *a priori* that should it have any significant interaction effects that only responses to the first photograph would be further analyzed and interpreted.

The final design of the experiment (excluding the order factor), then, was a $2 \times 3 \times 2 \times 2$ between-subjects design. There were two levels of the touch-role factor, the sex of subject factor, and the stimulus-pair factor, and three levels of the status variable.

**Measurement of Dependent Variables**

Dependent measures, the impression formation data, included ratings of the stimulus figures and of their relationship. Semantic differential scales were used to obtain each subject's impression of the female and male stimulus figures on the following dimensions (suggested by the Erickson et al., 1978 study):

- intelligent-unintelligent
- dominant-submissive
- shy-sociable
- blunt-polite
- warm-cold
- sincere-insincere
- competent-incompetent
- conforming-independent
- attentive-inattentive
- powerful-weak
- unlikeable-likeable
- forceful-gentle
- nurturant-neglectful
- attractive-unattractive
- masculine-feminine

Subjects were asked to describe each figure on the above fifteen dimensions by choosing a number on a scale of one to five, with one representing an extreme value of the left pole of a particular dimension and five representing an extreme value of the right pole (see Appendix C). (For analysis, however, scoring was reversed for adjective pairs 1, 2, 5, 6, 7, 9, 10, 13, and 14, so that a score of five
always represented an extreme value of the more socially desirable pole.)

Likert-type items were included to assess subject perceptions of power and liking dimensions in the relationship. Thus, on six five-point scales, each subject rated the intimacy and length of the relationship, how much each person liked the other, and the relative degree of control and interest each person had in the relationship (see Appendix D for exact wording of these items).

An additional dependent measure was included to discover any other relevant dimensions subjects may have been attuned to which were not tapped by the above objective items. For this measure, subjects were asked to write a description of what they thought was taking place between the woman and man in the first photograph.

**Manipulation checks.** Subject recall of elements in the photograph and the preceding paragraph (which contained the status manipulation) were tested on multiple-choice items in order to evaluate the success of the manipulation of touch-role and status factors (see Appendix E).

**Postexperimental items.** In order to assess subject awareness of independent variables and of the experimental predictions, subjects responded to open-ended items after they had completed the dependent measures and manipulation checks. They were asked to speculate about the variables and predictions of the study.
IV. RESULTS

Manipulation Checks

To assess the impact of the manipulation of touch role and status factors, responses to multiple-choice items were analyzed. Before these analyses it was judged that incorrect recall of sex and/or status of toucher would not justify exclusion of a subject's other data from analysis since researchers have shown that counternormative actions are misperceived (Kanter, 1977) and that touch, perhaps due to its subtlety, is not always registered consciously (Fisher et al., 1976).

Touch role. In the 268 cases involving touch, subjects reversed the sex of toucher in 6 cases and failed to recall it in 6 cases, and these errors were randomly distributed across conditions. In 24 cases subjects thought the figures were touching each other, and all but one of those errors involved the photograph of stimulus pair two in which the man was the toucher. Apparently all subjects very clearly saw his outstretched arm, palm resting firmly against her sleeve, but in addition 35 per cent of them misperceived her clasped hands as touching his wrist or as a mutual handshake. Since the impression formation data reported below demonstrate a clear main effect for touch role, it seems that although some subjects may have perceived her as touching him, the degree of touching was
not seen as equal. Overall, then, the touch manipulation appears to have been successful.

Relative status. In the 184 cases involving a status differential, subjects erred in identifying at least one of the two figures' status in 23 cases. Of those 23 errors 16 involved failure to recall that any occupational status was listed. The remaining seven errors involved reversal of relative status—and in six of those cases subjects ranked the female's status as lower.

In the 168 cases in which statuses were not identified in the caption, subjects erred in 12 per cent of them, making equally the following kinds of errors: ranking the male as higher, ranking the female as higher, or assuming that they had equal status. In addition there were eight cases in which the subjects correctly responded that status had not been identified for one figure but incorrectly attributed a defined status for the second figure.

Overall it seems that in the vast majority of cases, subjects correctly recalled the status information or at least the relative statuses of the stimulus figures.

Touch role and facial expressions. A multivariate analysis of variance on the raw scores for impressions of the stimulus figures and their relationship failed to show a significant effect for touch role within the control photograph conditions, in which the touch role manipulation was masked, $F (1, .306) = (1.306, p<.124)$, indicating that the stimulus figures did not alter their facial expressions
significantly as they switched from the role of toucher to that of recipient. This finding is consistent with the conclusion that the touch factor was manipulated successfully independently of facial expressions.

**Factor Analyses**

To identify the dimensions underlying subjects' impressions of the stimulus figures and their interpersonal relationship, a series of factor analyses was performed on the raw impression formation scores using a principal factors program from the Statistical Package for the Social Sciences. Separate analyses were made of the ratings of women stimulus figures, of men stimulus figures, and ratings of the relationship between the two figures. In each case the resultant factors were varimax rotated, and factor scores were computed for each subject for use in multivariate analyses of variance. The five factors with eigenvalues over 1.0 are shown in Table 1 and discussed below. (A complete listing is found in Appendix F.)

**Ratings of women stimulus figures.** The analyses of subject impressions of women on the 15 semantic differential scales yielded two factors with eigenvalues greater than 1.0, accounting for 90 per cent of the variance in those ratings. The first of these factors appears to reflect a power dimension, with high loadings (noted in parentheses) on the following scales: powerless-powerful (.77), submissive-dominant (.76), forceful-gentle (-.65),
Table 1
Comparison of Factors in Ratings of Women and Men Stimulus Figures

<table>
<thead>
<tr>
<th>Factor Name</th>
<th>Scale Name</th>
<th>Loading Women</th>
<th>Loading Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>powerful</td>
<td>.77</td>
<td>.73</td>
</tr>
<tr>
<td></td>
<td>dominant</td>
<td>.76</td>
<td>.79</td>
</tr>
<tr>
<td></td>
<td>gentle</td>
<td>-.65</td>
<td>-.75</td>
</tr>
<tr>
<td></td>
<td>independent</td>
<td>.60</td>
<td>.52</td>
</tr>
<tr>
<td></td>
<td>sociable</td>
<td>.57</td>
<td>.68</td>
</tr>
<tr>
<td></td>
<td>masculine</td>
<td>.14</td>
<td>.35</td>
</tr>
<tr>
<td>Attractiveness</td>
<td>attractive</td>
<td>.62</td>
<td>.46</td>
</tr>
<tr>
<td></td>
<td>warm</td>
<td>.61</td>
<td>.75</td>
</tr>
<tr>
<td></td>
<td>likeable</td>
<td>.61</td>
<td>.62</td>
</tr>
<tr>
<td></td>
<td>polite</td>
<td>.59</td>
<td>.50</td>
</tr>
<tr>
<td></td>
<td>masculine</td>
<td>-.77</td>
<td>.11</td>
</tr>
<tr>
<td></td>
<td>sincere</td>
<td>.36</td>
<td>.55</td>
</tr>
<tr>
<td></td>
<td>nurturant</td>
<td>.26</td>
<td>.42</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>competent</td>
<td>.64</td>
<td>.57</td>
</tr>
<tr>
<td></td>
<td>intelligent</td>
<td>.46</td>
<td>.74</td>
</tr>
<tr>
<td></td>
<td>attentive</td>
<td>.52</td>
<td>.44</td>
</tr>
<tr>
<td></td>
<td>nurturant</td>
<td>.41</td>
<td>.21</td>
</tr>
<tr>
<td></td>
<td>sincere</td>
<td>.57</td>
<td>.20</td>
</tr>
</tbody>
</table>

a Each scale name represents the positive (higher-scoring) pole of a semantic-differential scale. Each scale is listed under the factor for which it showed the highest loading for at least one sex.

b This factor loaded higher on another factor for women.

c This factor loaded higher on another factor for men.
dependent-independent (.60), and shy-sociable (.57). The second factor seems to represent the interpersonal attractiveness of the figures, with high loadings on the following scales: feminine-masculine (-.77), unattractive-attractive (.62), cold-warm (.61), and unlikeable-likeable (.61). A third factor emerged with an eigenvalue below 1.0, accounting for 10 per cent of the variance, with a high loading (.64) only on incompetent-competent.

Factors in ratings of men stimulus figures. The analysis of ratings of men stimulus figures resulted in two factors with eigenvalues greater than 1.0, accounting for a total of 92.5 per cent of the variance. As with the ratings of women, the factors in this analysis could also be labeled power and attractiveness. The former factor had high loadings on the following scales: submissive-dominant (.79), forceful-gentle (-.75), powerless-powerful (.73), and shy-sociable (.68). The second factor, interpersonal attractiveness, showed high loadings on these scales: cold-warm (.75), and unlikeable-likeable (.62). The third factor, with an eigenvalue less than 1.0 accounted for 7.4 per cent of the variance and loaded high only on unintelligent-intelligent (.74), with the next highest loading on incompetent-competent (.57).

Femininity-masculinity loadings on factors. As noted above, the femininity-masculinity scale had a high negative loading on the interpersonal attractiveness factor for ratings of females. For ratings of males, the femininity-
masculinity scale had a small but positive loading (.35) on the first factor—the power factor.

Factors in ratings of relationships. A single factor with an eigenvalue above 1.0, accounting for 65.9 per cent of the variance, emerged from the factor analysis of the ratings of impressions of the relationship on Likert-type scales. The factor appears to represent impressions of intimacy, loading high on the following scales: intimacy of relationship (.79), degree to which she likes him (.71), and degree to which he likes her (.67). The other factor which resulted from this analysis had an eigenvalue of .99, with a 34.1 per cent share of the variance, and had a high loading on the rating of relative interest in maintaining the relationship (.92). The rating of relative control in the relationship had a near-zero loading on each of the two factors described above.

Analyses of Factor Scores

Factor scores were subjected to a multivariate/univariate analysis of variance program. In addition to assessing the effects of the two major independent variables—touch role and status—the effects of three minor, nontheoretically relevant variables were also tested in order to ascertain the presence of any interactions which might necessitate separate analyses. No such interactions occurred. However, each of the three minor variables showed a significant main effect. Rather than collapsing across
the minor variables, then, the results of the five-way analyses of variance are reported below and in Table 2. Since most of the tests are theoretically uninteresting, only significant results and tests of predictions are reported here. Complete results are in Appendix G.

In determining significance of tests, an alpha level of .01 was used to lessen the probability of a Type I error. Considering the large number of observations in the analyses, the likelihood of a Type II error due to lowering the alpha level from the conventional .05 seemed minimal. Reported means of factor scores have been multiplied by 100 for clarity.

**Effects of subject sex.** The analysis revealed a significant multivariate $F$ for subject sex, $F(1,242) = 3.64$, $p < .001$. Univariate analyses showed a significant effect of subject sex on two factors, female power and male attractiveness. The female power effect, $F(1,242) = 8.64$, $p < .005$, indicated that women subjects ($M = 8$) tended to rate female stimulus figures as more powerful than did men subjects ($M = 1$). Furthermore, women subjects ($M = 17$) rated the male stimulus figures as significantly more attractive than did men subjects ($M = -15$), $F(1,242) = 10.38$, $p < .001$.

**Main effects of order of presentation.** A test of the main effects for the order variable resulted in a significant multivariate $F(1,242)$ of 3.58, $p < .001$. Subjects rated the female stimulus figures in the second photograph ($M = 18$) as significantly more attractive than the female figure in the first one ($M = -11$), $F(1,242) = 7.27$, $p < .01$. 
Table 2

Summary of the Multivariate Analysis of Variance
of Factor Scores for Ratings of Stimulus Figures

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Multivariate F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Sex (S)</td>
<td>1</td>
<td>3.64 **</td>
</tr>
<tr>
<td>Order of Presentation (O)</td>
<td>1</td>
<td>3.58 **</td>
</tr>
<tr>
<td>Stimulus Pair (P)</td>
<td>1</td>
<td>18.74 **</td>
</tr>
<tr>
<td>Touch Role (T)</td>
<td>1</td>
<td>43.40 **</td>
</tr>
<tr>
<td>Status (H)</td>
<td>2</td>
<td>1.90 *</td>
</tr>
<tr>
<td>S x O</td>
<td>1</td>
<td>2.05</td>
</tr>
<tr>
<td>S x H</td>
<td>2</td>
<td>1.07</td>
</tr>
<tr>
<td>O x P</td>
<td>1</td>
<td>1.13</td>
</tr>
<tr>
<td>O x T</td>
<td>1</td>
<td>1.65</td>
</tr>
<tr>
<td>T x H</td>
<td>2</td>
<td>1.41</td>
</tr>
<tr>
<td>S x O x P</td>
<td>1</td>
<td>1.76</td>
</tr>
<tr>
<td>S x O x T</td>
<td>1</td>
<td>1.35</td>
</tr>
<tr>
<td>S x O x H</td>
<td>2</td>
<td>1.31</td>
</tr>
<tr>
<td>S x P x T</td>
<td>1</td>
<td>2.25 *</td>
</tr>
<tr>
<td>S x P x H</td>
<td>2</td>
<td>1.40</td>
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<td>O x P x H</td>
<td>2</td>
<td>1.44</td>
</tr>
<tr>
<td>S x O x P x H</td>
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<td>1.05</td>
</tr>
<tr>
<td>S x O x P x T x H</td>
<td>2</td>
<td>1.14</td>
</tr>
<tr>
<td>Error</td>
<td>242</td>
<td>1.14</td>
</tr>
</tbody>
</table>

*aOnly sources of variance with a multivariate F > 1.0 are reported here

* p<.05
** p<.001
The male figure in the second photograph (M = 8) was rated significantly more powerful than the male figure in the first photograph (M = -14), $F(1,242) = 12.19$, $p < .001$. Presentation order as described in the methods section was counterbalanced.

**Main effects of stimulus pair.** The analysis resulted in a significant multivariate main effect for stimulus pair, $F(1,242) = 18.74$, $p < .001$, and three significant univariate Fs. A highly significant effect on female attractiveness emerged, $F(1,242) = 92.22$, $p < .001$, with subjects rating female model B as more attractive (M = 58) than model A (M = -34). The former model's partner, male model B (M = 29), was also seen as significantly more attractive than male model A (M = -24), $F(1,242) = 40.66$, $p < .001$. Male model A (M = 13), however, was seen as significantly more powerful than male model B (M = -24), $F(1,242)$, $p < .001$.

**Main effects of touch role.** Each female and male stimulus figure was featured in the role of toucher and in the role of touch recipient, and only mixed-sex pairs were used as stimulus pairs. The multivariate F for the main effect of touch was highly significant, and in fact was the largest multivariate F among all of the tests, $F(1,242) = 43.40$, $p < .001$. Three univariate main effects were significant—female power, male power, and interest in maintaining the relationship.

Inspection of the means for each condition showed that more power was attributed to women touchers (M = 55) than to
women recipients of touch (M = -53), \( F (1,242) = 129.72, \ p < .001 \). Similarly, subjects perceived more power in men touchers (M = -66) than in men recipients of touch (M = 60), \( F (1,242) = 204.49, \ p < .001 \), the most highly significant difference of all the univariate tests performed. Thus for both male and female models, touching led to attributions of greater power and dominance than receiving touch from another person.

Analysis of the factor labeled "interest in maintaining the relationship" revealed a significant effect of sex of toucher/recipient; \( F (1,242) = 30.97, \ p < .001 \). The means showed that subjects believed that the toucher was also the person most interested in maintaining the relationship. Thus when the toucher was female, scores on this item were significantly lower (M = 29) than when the toucher was male (M = 35), and higher scores represent greater male interest.

Main effects of status. No main effect appeared for the status variable in the multivariate and univariate analyses of variance, although the multivariate \( F \) approached significance, \( F (2,242) = 1.90, \ p < .02 \). Since no univariate tests were significant, it is not possible to interpret the multivariate \( F \) clearly.

Interactions of independent variables. Surprisingly, no tests of interactions resulted in significant effects. Those which approached significance most nearly were these two: (1) sex of subject by order of presentation, \( F (2,242) = 2.05, \ p < .05 \), and (2) sex of subject by stimulus pair by
sex of toucher, $F (2,242) = 2.25, p<.05$.

One predicted interaction, that of touch role and status, failed to reach even the conventional level of significance, but will be reported for theoretical interest. The two-way interaction resulted in a multivariate $F (2,242)$ of 1.41, $p<.15$, with the following univariate tests most closely approaching significance: (1) female power, $F (1,242) = 4.37, p<.02$, and (2) male power, $F (1,242) = 3.56, p<.03$. Inspection of the means revealed that females were seen as relatively powerless in the role of recipient regardless of status, and that men were perceived as powerless when touched by women of high or unidentified status. In other words, being touched by a person of the other sex who was of lower status reduced attributions of power considerably for women but not for men. Both men and women touchers were seen as very powerful, regardless of status. (See Table 2.)

Analyses of Raw Scores

Multivariate and univariate analyses of variance were also performed on the raw scores. There are some minor differences between these results and those for the factor scores reported above. Again, only significant results and those related to predictions are reported below and in Table 3. (Complete information is found in Appendix D.)

Effects of subject sex. The multivariate $F$ for the main effect of subject sex only approached significance, $F (1,242) = 1.62, p<.02$. One of the significant univariate
Table 3
Summary of the Multivariate Analysis of Variance of Raw Scores for Ratings of Stimulus Figures

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Multivariate F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Sex (S)</td>
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</tr>
<tr>
<td>Order of Presentation (O)</td>
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<td>2.22 **</td>
</tr>
<tr>
<td>Stimulus Pair (P)</td>
<td>1</td>
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<td>Touch Role (T)</td>
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<td>12.80 **</td>
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<td>1.66 **</td>
</tr>
<tr>
<td>S x O</td>
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<td>1.08</td>
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<tr>
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</tr>
<tr>
<td>O x T</td>
<td>1</td>
<td>1.19</td>
</tr>
<tr>
<td>P x T</td>
<td>1</td>
<td>1.18</td>
</tr>
<tr>
<td>P x H</td>
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<td>1.09</td>
</tr>
<tr>
<td>T x H</td>
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<td>1.24</td>
</tr>
<tr>
<td>S x O x P</td>
<td>1</td>
<td>1.48 *</td>
</tr>
<tr>
<td>S x O x H</td>
<td>2</td>
<td>1.27</td>
</tr>
<tr>
<td>S x P x H</td>
<td>2</td>
<td>1.33 *</td>
</tr>
<tr>
<td>S x T x H</td>
<td>2</td>
<td>1.01</td>
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<tr>
<td>O x P x T</td>
<td>1</td>
<td>1.17</td>
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<td>O x P x H</td>
<td>1</td>
<td>1.01</td>
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<td>1.02</td>
</tr>
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<td>Error</td>
<td>288</td>
<td></td>
</tr>
</tbody>
</table>

*aOnly sources of variance with a multivariate F>1.0 are reported here

* p<.05
** p<.001
tests showed that women subjects (M = 3.43) tended to rate the female figures as more independent than did men subjects (M = 2.80), $F(1,242) = 19.71$, $p<.001$. The only other significant effect was for attributions of warmth, with women subjects (M = 3.54) rating male figures as warmer than did men subjects (M = 3.21), $F(1,242) = 8.58$, $p<.01$. Comparing these results to the factor score analyses, one sees considerable similarity; independence had a high loading on female power, which women subjects rated higher, and warmth loaded high on male attractiveness, which women subjects also rated higher.

**Effects of order of presentation.** As with factor scores, the raw scores showed a significant main effect of order of presentation, $F(1,242) = 2.22$, $p<.001$. Subjects rated the second female figures as more feminine ($p<.001$), which corresponds to the significant effect for the female attractiveness factor. Also, subjects rated male models appearing in the first position as less independent ($p<.001$), more polite ($p<.01$), less powerful ($p<.01$), and more gentle ($p<.01$), as was reflected in the attributions of greater power to the second male figures. One finding which was not reflected in the factor score analyses was that the second male figures were seen as having more control in the relationship.

**Effects of stimulus pair.** Analysis revealed a significant overall main effect for stimulus pair, $F(1,242) = 6.99$, $p<.001$, and several significant univariate effects. For impressions of female figures, there were significant effects
on the following scales, with female model B receiving the more favorable rating in each case: intelligent (p<.01), polite (p<.001), warm (p<.001), likeable (p<.001), nurturant (p<.01), attractive (p<.001), and feminine (p<.001). Factor score analyses also found that subjects evaluated the female model B as more attractive.

For impressions of male figures, there were the following significant effects, with male model B receiving the most desirable evaluations: polite (p<.001), warm (p<.001), sincere (p<.001), likeable (p<.001), gentle (p<.001), nurturant (p<.01), and attractive (p<.001). Subjects perceived the relationship between the A models had been of longer duration (p<.001) and that model B liked her partner more than model A liked hers (p<.01).

Effects of touch role. The multivariate F for the overall main effect of touch role was almost twice as large as any other raw score multivariate F and was highly significant, F (1,242) = 12.80, p<.001. Of the 36 univariate tests, 19 were significant, and they reflect the pattern of significant factors in the analyses reported above.

Compared to female recipients of touch, female touchers were seen as more dominant (p<.001), more independent (p<.001), more powerful (p<.001), and less gentle (p<.001), just as female touchers were ranked higher on the female power factor, which was highly significant. Female touchers were also seen as more sociable (p<.001), a scale which showed a moderate loading (.57) on the female power factor.
Furthermore, they were seen as more masculine (p<.01), a scale which showed a high loading (-.77) on the nonsignificant female attractiveness factor. Female touchers were rated as more blunt/less polite (p<.001), a scale which showed a moderate loading (.59) on the female attractiveness factor. Lastly, they were perceived as more intelligent (p<.001) than female recipients of touch.

Compared to males receiving touch from women, males who touched women were viewed as more dominant (p<.001), more independent (p<.001), more powerful (p<.001), and more forceful/less gentle (p<.001); all of these scales showed high loadings on the significant male power factor reported above. Male touchers were rated as more masculine (p<.001), a scale which had a moderate but positive loading on the male power factor. Furthermore, they were seen as more sociable (p<.001) and more competent (p<.001) than male recipients.

In rating aspects of the relationship between the toucher and recipient, subjects attributed more control over the relationship to the toucher (p<.001) and more liking for the other to the toucher (p<.01).

Effects of status. Analyses of the status variable revealed a significant multivariate F for the main effect, $F_{(2,242)} = 1.66$, p<.001, and special contrast tests showed a nearly significant effect on the Likert-type item measuring relative degree of control over the relationship (1 = greater control by female, 3 = equal control, and 5 =
greater control by male). When the female had higher status than the male, she was seen as having somewhat greater control (M = 2.43); when the male held the higher status, control was perceived as fairly equal (M = 2.98); and when statuses were unidentified, the female was seen as wielding a little more control (M = 2.79). The contrast between the first two means was highly significant (p<.001), although the overall multivariate F for that contrast did not quite reach significance, F (2, 242), p<.013. Similarly, the overall contrast between the female high status-status unidentified condition approached significance, F (2, 242) = 1.68, p<.015, but the univariate contrast for the control scale was significant (p<.002).

**Interactions of independent variables.** None of the tests of interactions yielded significant Fs. Approaching significance were the following interactions: (1) subject sex by order of presentation by stimulus pair (p<.05) and (2) sex of subject by stimulus pair by status (p<.05), none of which have any theoretical implications.

**Touch Role and Sex of Stimulus Figures**

An additional multivariate analysis of variance was performed on the raw impression formation data to ascertain the effect of sex of stimulus figure. A main effect for sex of stimulus figure and for the interaction of sex of stimulus figure with touch role were both highly significant (p<.001). Overall, women were rated as more intelligent
(\(M = 3.84\)) than men (\(M = 3.70\)), more dominant (\(M = 3.95\) vs. \(M = 2.74\)), more sincere (\(M = 3.85\) vs. \(M = 3.54\)), more competent (\(M = 4.00\) vs. \(M = 3.51\)), more independent (\(M = 3.12\) vs. \(M = 2.69\)), more nurturant (\(M = 3.55\) vs. \(M = 3.24\)), and less masculine (\(M = 2.22\) vs. \(M = 4.04\)).

The univariate interactions of touch role and sex which were significant (\(p<.001\)) are presented in Table 4. Inspection of the means reveals a fairly consistent pattern: women touchers were rated highest on intelligence, sociability, competence, and independence, while men recipients of touch were rated the lowest on these dimensions. Male touchers were rated as most masculine, women recipients as least masculine. Sex of stimulus figures did not interact significantly with other variables in the study.
Table 4  
Mean Ratings of Impressions of Stimulus Figures  
by Touch Role and Sex

<table>
<thead>
<tr>
<th>Scale *</th>
<th>Toucher</th>
<th></th>
<th>Recipient</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
</tr>
<tr>
<td>intelligent</td>
<td>4.02</td>
<td>3.74</td>
<td>3.65</td>
<td>3.38</td>
</tr>
<tr>
<td>dominant</td>
<td>4.00</td>
<td>2.72</td>
<td>3.90</td>
<td>2.76</td>
</tr>
<tr>
<td>sociable</td>
<td>4.07</td>
<td>3.97</td>
<td>3.14</td>
<td>2.65</td>
</tr>
<tr>
<td>polite</td>
<td>3.09</td>
<td>2.98</td>
<td>3.76</td>
<td>3.67</td>
</tr>
<tr>
<td>competent</td>
<td>4.20</td>
<td>3.82</td>
<td>3.80</td>
<td>3.20</td>
</tr>
<tr>
<td>independent</td>
<td>3.53</td>
<td>3.08</td>
<td>2.72</td>
<td>2.30</td>
</tr>
<tr>
<td>powerful</td>
<td>3.69</td>
<td>3.65</td>
<td>2.87</td>
<td>2.60</td>
</tr>
<tr>
<td>gentle</td>
<td>2.74</td>
<td>2.66</td>
<td>3.50</td>
<td>3.51</td>
</tr>
<tr>
<td>masculine</td>
<td>2.40</td>
<td>4.22</td>
<td>2.04</td>
<td>3.86</td>
</tr>
</tbody>
</table>

*Each scale name represents the positive (higher-scoring) pole of a semantic-differential scale. Only those scales significant at p<.001 are presented above.
V. DISCUSSION

General Dimensions in Interpretation of Nonverbal Cues

One of the most striking results of the present study was the generality of the factors which emerged from the factor analyses of ratings of women and men stimulus figures. Each factor analysis resulted in two major factors, which, when combined, accounted for at least 90 per cent of the variance within each set of ratings. The similarity of the female and male factors resides not merely in the identical labels attached to them, but also in the actual pattern of loadings of the various scales on each factor. Although the actual loadings varied somewhat between the female and male factors, overall each factor represented almost identical semantic differential scales. For example, the female and male power factors both represented attributions of power, dominance, forcefulness, independence, and sociability. For males, powerfulness was also slightly related to masculinity. The attractiveness factor (which should not be equated with physical attractiveness) reflected attributions of attractiveness, warmth, likeability, and politeness for both sexes; for women it was also positively associated with perceived femininity.

These two dimensions—power and interpersonal attractiveness—clearly parallel dimensions identified by other writers. Henley's duality model (1973b) differentiates
power (which she uses interchangeably with status) from solidarity (by which she also means intimacy and liking). The researchers (Osgood, Suci, & Tannenbaum, 1957) who developed the semantic-differential technique (which was used to generate scores for factor analysis in the present study) found that the meaning of concepts could be captured by reference to just three dimensions: evaluation (good-bad, beautiful-ugly, pleasant-unpleasant), potency (large-small, strong-weak, heavy-light), and activity (active-passive, fast-slow). Mehrabian (1971) adapted the above three dimensions to interpreting nonverbal cues. His own descriptions of the dimensions, or "metaphors," clarifies their relationship to the dimensions of Osgood et al. and to the factors in the present study:

The first of these metaphors is the immediacy or proxemic metaphor. A basic and transcultural element of human life is that people approach and get more involved with things they like... (p. 113)

For the second dimension, dominance or status, the communication codes seem to be based on a power or fearlessness metaphor. (p. 115)

His third metaphor, responsiveness, is analogous to the activity dimension of Osgood et al., and reflects the organism's capacity to react to and change in response to its environment. The responsiveness dimension may be likened to the third factor which emerged in the present analyses. The third factor accounted for but a small portion of the variance. However, the scales measuring competence, attentiveness, and intelligence were most
closely associated with this factor (rather than with power or attraction), perhaps reflecting the degree to which the person was seen as capable of and actually responding to the other person.

The generality of the three factors employed in the analyses in the present study strengthen the confidence one may place in its results. In turn, the present results lend further credence to models such as those proposed by Henley and Mehrabian which emphasize heavily the dimensions of power (and status and dominance) and solidarity (and attraction and affiliation).

The dimensions of femininity and masculinity. While confirming proposed dimensions of nonverbal communication, the results of the present factor analyses cast doubt upon the validity of conceptualizing femininity and masculinity as opposite poles of a single dimension. In women figures, high femininity was associated with greater interpersonal attractiveness, whereas, in men, high masculinity was related to greater power. Thus there seems to be evidence in the data that femininity ratings may reflect a dimension of interpersonal solidarity or affiliation while masculinity represents power aspects, a conclusion which resonates well with the work in androgyny of Sandra Bem (1974).

In rejecting traditional bipolar measures of masculinity and femininity, Bem has argued that the two concepts are distinct dimensions, roughly analogous to notions of instrumentality and nurturance respectively. Furthermore,
she has claimed that the healthy person is one who combines the traits stereotypically associated with each role; such a person is characterized as "androgynous." It was not possible for subjects in the present study to rate a person as androgynous, though it is conceivable that they may have used the middle range of the bipolar dimension to indicate androgyny for sex-role violators were rated as less extremely masculine or feminine than sex-role conformers. Future research might include two separate dimensions—"unfeminine-feminine" and "unmasculine-masculine" when measuring the effects of sex-role violations. It may very well be that a woman toucher would be seen as highly masculine yet still highly feminine.

The Effects of Role Reversal by Women

It was predicted that subjects would react to a woman's use of nonmutual touch—a power gesture—by denying the power connotations and reinterpreting it as an affiliative gesture or by rejecting the woman for breaking the touch norm for her sex. This prediction was clearly contradicted by the data. The powerfulness of a woman's touch was not denied at all—women were seen as more powerful when they assumed the role of toucher than when they were the passive recipients of a man's touch. Furthermore, they were generally not rejected more as touchers than as recipients, for no differences appeared for the interpersonal attractiveness factor as a function of
touch role. Although women touchers were described as more masculine and less polite, they were also perceived as more sociable and intelligent. No differences appeared among attributions of likeability, warmth, or attractiveness as a function of a woman’s touch role.

Thus a woman’s behavior carried more weight than her sex, it seems, in determining observers’ attributions, a finding which corresponds to those of Erickson et al. (1978) and McKenna and Denmark (1978). They each found that high-status behaviors, e.g. speech style and nonverbal gestures, whether performed by women or men, led to attributions of credibility (Erickson et al.) and high status and competence (McKenna & Denmark). The favorable attributions in their studies, as with the power attributions in the present study, reflected the performance rather than the sex of the actor.

Power connotations of a female touch were not denied, nor was the powerful female rejected for presumably violating traditional sex norms. This failure to replicate the findings of the sex-role reversal study by Costrich et al. (1975) may represent a change over time in the attitude of college students towards women's assertiveness, perhaps due to the feminist movement or even more directly to the positive publicity surrounding "assertiveness training workshops." Alternatively, it is conceivable that the differences between the results may reflect differences in
operationalizations of the sex-role reversal variable; perhaps the "aggressive" women in the earlier study were indeed more offensive than the present study's women touchers, whose singular assertive gesture—resting her hand upon a man's arm—may be mild when compared to the behavior of confederates in the Costrich et al. study. Perhaps if combined with other assertive or aggressive cues—a scornful look or condescending tone—the use of non-mutual touch by a woman might lead to social rejection for her. In other words, it may be that intense or frequent use of a powerful behavioral style is acceptable and rewarded for women whereas heavy use is permitted only in males.

The Effects of Role Reversal by Males

Men who touched women rather than received touch from them were seen as more powerful—in fact, this was the strongest effect in the entire study, suggesting that a male's adoption of a powerful or weak posture vis a vis a woman affects his image considerably more than such posturing affects her image. The aspects of the image of the male recipient which were affected were those represented by the power factor, not the interpersonal attraction factor. Penalties suffered by passive or powerless men in studies by Costrich et al. (1975) and Erickson et al. (1978) were not shared by the men who broke the touch norms for their sex in the present study. As touchers, men were described
as more masculine, more sociable, and more competent than as recipients, but the touch role did not affect attributions of likeability, warmth, or attractiveness. As with impressions of women, the impressions of men were more a function of overt behavior than of sex. Evidence for social rejection for sex-role transgressions was not found, perhaps because as observers become more accustomed to and acceptant of the exercise of power by women they are also prepared to allow expansion for male roles, too.

The Effects of Sex on Attributions

The fact that women were perceived as more intelligent, more dominant, more competent, and more independent than men may reflect the tendency for observers to make more personality attributions for out-of-role behaviors than for normative behaviors, as theorized by Jones and Davis (1965). Given that women are yet a minority in the business world except as clerks and typists, the women portrayed in the photographs probably did seem less typical of their sex than did the men.

When engaging in an even more counternormative behavior--touching a man who was not reciprocating--women were seen as still more intelligent, competent, and independent than women recipients or men in either touch role, as Jones and Davis's theory predicts. In keeping with their approach to attribution was the finding that men recipients of touch--presumed sex-role transgressors--were
rated as the least intelligent, competent, and independent of all the actors. Sex-role conformers—men touchers and women recipients—tended to receive less extreme attributions on those three dimensions.

Lastly, it should be noted that relative to men touchers, women touchers were not rejected. Nor were men recipients more rejected than women recipients. The notion that sex-role violators will experience social rejection was not supported by the present study.

The Effects of Status, Touch, and Sex

Since women and men were not rejected for breaking the alleged sex norms for interpersonal touch, the prediction that penalties would be milder if touch role were congruent with status was, of course, not confirmed. There was some indication the male recipients of female touch were seen as powerless—and more so when touched by a woman whose status was higher or unknown than by one whose status was lower—a clear contradiction of the prediction. That is, recipients of touch—male or female—were generally seen as rather powerless, but men touched by low-status women were not perceived as powerless as other recipients. One possible interpretation is that, vis a vis a male (who is stereotypically more powerful) who is also touching her (a power gesture), a woman does indeed seem weak and submissive, regardless of their relative statuses. On the other hand, in interacting with a woman (who is stereotypically weak
and of low status), a man does not appear particularly powerless, even when he is the target of her unreciprocated touch.

It might be noted, too, that the operationalization of the status factor may itself have been too weak to induce any reliable effects. Since subjects read the paragraph containing the status manipulation, then turned the page to study the photograph while rating the stimulus figures, the salience of the status information may have been low at that time (although it was successfully recalled on multiple-choice items on a later page of the questionnaire).

Relative Importance of Behavior and Sex of Actor

Overall, it appears that observers responded to their perceptions of nonverbal behaviors of the actors rather than to any stereotypical notions of appropriate status or sex-role behavior. For women and men actors, the adoption of the toucher role led to attributions of greater power, competence, and sociability, whereas assumption of the recipient role entailed attributions of greater powerlessness, incompetence, and shyness.

Anecdotal evidence and naturalistic observations have previously suggested the existence of a correlation between nonmutual touch and power or status. The present study, because it was experimental, lends support which is unconfounded by such factors as facial expression, eye contact, and so on, to the idea that nonmutual touch conveys power.
A laboratory study by Summerhays and Suchner (1978) also reported a correlation between the observers' attributions of dominance and the use of nonmutual touch, but their findings are difficult to interpret unambiguously since they did not control for (or at least, they did not report controlling for) possible confoundings of facial expression or other nonverbal cues with touch.

A Comment on Subject Sex, Order, and Stimulus Effects

The above interpretations of results are not at all impaired by the significant main effects found for the minor variables introduced into the study for control rather than theoretical purposes. Since subject sex, order of presentation, and stimulus pair effects failed to interact with each other or with the major variables of touch and status, only a brief discussion of them is required.

The multivariate effect for subject sex was significant for the analyses of factor but not raw scores. The discovery that, compared to men, women subjects attributed more power (and in unfactored scores, more independence) to women may reflect their own self-concepts of independence. College women represent a more highly selective and less traditional sample of the population than college men, and hence they are probably more inclined to recognize the power and independence implications of female actions.

Men actors were considered more attractive (and in the unfactored scores, warmer) by women subjects by men, but
this unpredicted finding does not seem particularly notable. Perhaps in mixed-sex situations, women, more so than men, are attuned to expressions of warmth and affiliation from the other sex.

The order of presentation effects, though not damaging to the study's conclusions, are not easily explained, either. Some kind of true repeated measures test may be worth investigating in future research. It may very well be that repeated exposure to sex-role violations would alter observers' conceptions of sex-role behaviors and corresponding attributions for such acts.

Lastly, that one stimulus pair was perceived as more attractive than the other actually bolsters the generality of the present findings. As there were no contaminating interaction effects of the stimulus variable, one may place greater confidence in the conclusion that adoption of nonmutual touch carries power implications—regardless of physical or interpersonal attractiveness.

Some Limitations of the Present Conclusions

As with any single study, there are numerous limits to the generalizability of the conclusions due to the use of particular procedures, stimulus materials, subjects, and so on. Though sex-role and status-role violators of touch norms did not undergo social rejection in the present study, greater negative reactions to violators might be found among actual interactants in situations involving touch. For
example, an executive might personally reject a subordinate who initiates touch—or the higher status person might respond to a subordinate's touch with a touch of her or his own, thus making it a mutual touch situation. Other observers might respond differently to the situation presented in the study. College student subjects for the most part are younger and lower in status than the actors they observed; the norms which were presumably violated by low-status persons would be more salient to experienced denizens of the business world, who thus might respond more negatively to observed usurpation of the privileges of power by underlings. College students may also be less sexist and therefore less likely to reject sex-role violators than other subject populations.

Only one particular manner of touch was investigated in the present study—the hand to upper arm touch. Although such a touch seems common enough between intimates as well as higher- and lower-status persons today, such mannerisms are hardly consistent across time and culture. Only young white middle-class Americans were pictured as stimulus figures, which seems appropriate as most students at the university are also young, white, and middle-class, but these factors, too, limit generalizability. It is hereby suggested that the specifics of the act or the characteristics of the interactants or observers are less important than the rule which governs nonverbal communication. That is, even when or where other kinds of touch are the mode,
nonmutuality of touch will still characterize interactions between those of differing status. Only further empirical studies can verify that hypothesis of course, but it is worth noting that the linguistic duality model holds across cultures regardless of the personal characteristics of the speaker or the particular inflections of speech.

Evaluating the Duality Model

The present study does provide support for one of the basic assumptions of the duality model, namely, that nonmutual behaviors convey status or power rather than affiliation. Henley's assertion that women would be rejected or misinterpreted for using nonmutual touch was not validated; that particular assertion, however, is not part of the duality model. As the model predicts, attributions of power were indeed determined by touch role in a situation involving nonmutual touch. Factor analyses confirmed the existence of a second dimension in impression formation, that of attractiveness or likeability, but that factor remained unaffected by the touch role manipulations, again as the duality model predicts. The importance of the present study is that it provides experimental evidence for the impact of nonmutual touch on power attributions; previous research was restricted to anecdotes and correlational studies, whose conclusions about touching were clouded by confounding factors such as status, age, and facial expressions.
Overall, attributions of power but not of affiliation were affected by the use of nonmutual touch, and this held true for touchers of both sexes. Women and men were perceived as more powerful and intelligent, more masculine and less polite when they assumed the role of toucher rather than receiver. If one intends to convey power through touch, it does indeed appear true that it is better to give than to receive.

On a theoretical level, then, the present study supports a duality model for the interpretation of nonmutual touch. On an applied level, it could be used to help allay feminist fears that a woman's sex will necessarily prevent her from assuming a powerful role in interactions with men.

**Directions for Further Research**

The scarcity of research on touch is both an advantage and a hindrance to the potential researcher in the area. The need for a transcriptions system and for structural studies—of the kinds of touches, the patterns of touches, the relationship between touching and other nonverbal or verbal behaviors—is certainly great. There is also a clear need for further external variable studies; one could investigate the impact of age, culture, task, setting, mood, and so on on touching behavior and attributions for touching.

While haphazard or random empirical net-dragging may provide interesting and valuable data, there are some
theoretical issues which may be more deserving of research attention at present. First of all, more research is needed before it can be said with confidence that nonmutual touch conveys power. Second, the impact of mutual touch on attributions of affiliation remains a topic for speculation; it should become a topic of careful research. The validity of the assumptions about mutuality and nonmutuality made by the duality model must be tested using other nonverbal cues, e.g., eye contact or interrupting speech, as well.

No single research strategy is recommended. Rather, it seems advisable to complement structural studies with experimental ones, laboratory studies with field studies, behavioral studies with attributional studies. Only by diverse approaches can a useful and general model of touch and other nonverbal behaviors be validated.
Appendix A

Photographs of Stimulus Figures

First Page: Stimulus Pair A
Second Page: Stimulus Pair B
Appendix B

Manipulation of Relative Status

In order to manipulate relative status, the following paragraphs were presented as captions preceding the stimulus photographs in treatment booklets.

1. **Female Higher-Status Condition:**
   On the following page is a photograph of two persons, an office manager whom we can call Mary Smith and her assistant John Doe in an office on a typical day.

2. **Male Higher-Status Condition:**
   On the following page is a photograph of two persons, an office manager whom we can call John Doe and his assistant Mary Smith in an office on a typical day.

3. **Status Unidentified Condition:**
   On the following page is a photograph of two persons whom we can call Mary Smith and John Doe in an office on a typical day.

Following the status manipulation paragraph were the following instructions:

Please study the photograph for about a minute.

Then begin answering the questions on the page facing the photograph.
Appendix C

Semantic Differential Scales for
Rating Impressions of Stimulus Figures

Subjects were given the following instructions:

Given the information you now have, describe the persons in the photograph, using the scales below. (You may continue to refer to the photograph while you are working on this page.)

For each person, describe him/her by choosing a number nearer to the word in each pair of adjectives which you feel more accurately represents your impression of her/his personality. Enter that number on your answer sheet. There are no right or wrong answers.

Subjects were then presented with two sets of the following semantic-differential scales, one for rating the female stimulus figure and one for rating the male:

1. intelligent 1 2 3 4 5 unintelligent
2. dominant 1 2 3 4 5 submissive
3. shy 1 2 3 4 5 sociable
4. blunt 1 2 3 4 5 polite
5. warm 1 2 3 4 5 cold
6. sincere 1 2 3 4 5 insincere
7. competent 1 2 3 4 5 incompetent
8. conforming 1 2 3 4 5 independent
9. attentive 1 2 3 4 5 inattentive
10. powerful 1 2 3 4 5 weak
11. unlikeable 1 2 3 4 5 likeable
12. forceful 1 2 3 4 5 gentle
13. nurturant 1 2 3 4 5 neglectful
14. attractive 1 2 3 4 5 unattractive
15. feminine 1 2 3 4 5 masculine
Appendix D
Likert-type Scales for Rating
Impressions of the Relationship

Subjects were asked to answer the following six items:

1. What is your impression of the interpersonal relationship between the two persons in the photograph you just looked at? They are probably
   a. just business acquaintances
   b. casual friends
   c. good friends
   d. very good friends
   e. very intimate friends

2. How long would you guess they have known each other? They have known each other
   a. a few days
   b. a few weeks
   c. a few months
   d. more than a few months

3. How much do you think she likes him?
   a. not at all
   b. somewhat
   c. moderately
   d. very much

4. How much do you think he likes her?
   a. not at all
   b. somewhat
   c. moderately
   d. very much

5. Who would you say probably has the most influence or control in the relationship?
   a. she has a lot more influence
   b. she has a little more influence
   c. they have equal influence or control
   d. he has a little more influence
   e. he has a lot more influence

6. Who would you guess is more interested in maintaining the relationship, in keeping it running smoothly?
   a. she is much more interested
   b. she is a little more interested
   c. they are equally interested
   d. he is a little more interested
   e. he is much more interested
Appendix E

Manipulation Checks

To assess the effectiveness of the manipulation of the independent variables, subjects were asked to answer the following questions:

1. What was the woman's listed occupation?
   a. secretary
   b. assistant
   c. manager
   d. housewife
   e. none was listed

2. What was the man's listed occupation?
   a. salesperson
   b. assistant
   c. manager
   d. husband
   e. none was listed

3. In the photograph, the two persons were in
   a. an apartment
   b. an office
   c. a park
   d. a store
   e. none of the above

4. In the photograph
   a. he was touching her
   b. she was touching him
   c. they were not touching
   d. they were touching each other
### Appendix F

**Table 1**

Varimax Rotated Factor Matrix:

Impressions of Women Stimulus Figures

<table>
<thead>
<tr>
<th>Scale</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligent</td>
<td>0.39</td>
<td>0.19</td>
<td>0.46</td>
</tr>
<tr>
<td>Dominant</td>
<td>0.76</td>
<td>-0.19</td>
<td>0.09</td>
</tr>
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<td>Sociable</td>
<td>0.57</td>
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<td>0.10</td>
</tr>
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<td>Polite</td>
<td>-0.34</td>
<td>0.54</td>
<td>0.19</td>
</tr>
<tr>
<td>Warm</td>
<td>-0.01</td>
<td>0.61</td>
<td>0.32</td>
</tr>
<tr>
<td>Sincere</td>
<td>-0.06</td>
<td>0.36</td>
<td>0.57</td>
</tr>
<tr>
<td>Competent</td>
<td>0.45</td>
<td>-0.08</td>
<td>0.64</td>
</tr>
<tr>
<td>Independent</td>
<td>0.60</td>
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<td>0.11</td>
</tr>
<tr>
<td>Attentive</td>
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<td>0.11</td>
<td>0.53</td>
</tr>
<tr>
<td>Powerful</td>
<td>0.77</td>
<td>-0.11</td>
<td>0.11</td>
</tr>
<tr>
<td>Likeable</td>
<td>-0.05</td>
<td>0.61</td>
<td>0.15</td>
</tr>
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<td>Gentle</td>
<td>-0.65</td>
<td>0.37</td>
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<td>Nurturant</td>
<td>0.09</td>
<td>0.26</td>
<td>0.41</td>
</tr>
<tr>
<td>Attractive</td>
<td>0.14</td>
<td>0.62</td>
<td>0.17</td>
</tr>
<tr>
<td>Masculine</td>
<td>0.14</td>
<td>-0.77</td>
<td>-0.01</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Eigenvalue</th>
<th>Percentage of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.22</td>
<td>46.7</td>
</tr>
<tr>
<td></td>
<td>2.99</td>
<td>43.3</td>
</tr>
<tr>
<td></td>
<td>0.69</td>
<td>10.0</td>
</tr>
</tbody>
</table>

*aEach scale name represents the positive (higher-scoring) pole of a semantic differential scale.*
### Appendix F

#### Table 2

Varimax Rotated Factor Matrix:

Impressions of Men Stimulus Figures

<table>
<thead>
<tr>
<th>Scale</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligent</td>
<td>0.21</td>
<td>0.14</td>
<td>0.74</td>
</tr>
<tr>
<td>Dominant</td>
<td>0.79</td>
<td>-0.05</td>
<td>0.21</td>
</tr>
<tr>
<td>Sociable</td>
<td>0.68</td>
<td>0.02</td>
<td>0.12</td>
</tr>
<tr>
<td>Polite</td>
<td>-0.47</td>
<td>0.50</td>
<td>0.12</td>
</tr>
<tr>
<td>Warm</td>
<td>0.05</td>
<td>0.75</td>
<td>-0.01</td>
</tr>
<tr>
<td>Sincere</td>
<td>-0.26</td>
<td>0.55</td>
<td>0.20</td>
</tr>
<tr>
<td>Competent</td>
<td>0.36</td>
<td>0.27</td>
<td>0.57</td>
</tr>
<tr>
<td>Independent</td>
<td>0.52</td>
<td>0.11</td>
<td>0.08</td>
</tr>
<tr>
<td>Attentive</td>
<td>0.00</td>
<td>0.29</td>
<td>0.44</td>
</tr>
<tr>
<td>Powerful</td>
<td>0.73</td>
<td>0.01</td>
<td>0.34</td>
</tr>
<tr>
<td>Likeable</td>
<td>-0.01</td>
<td>0.62</td>
<td>0.27</td>
</tr>
<tr>
<td>Gentle</td>
<td>-0.75</td>
<td>0.34</td>
<td>-0.03</td>
</tr>
<tr>
<td>Nurturant</td>
<td>0.07</td>
<td>0.42</td>
<td>0.21</td>
</tr>
<tr>
<td>Attractive</td>
<td>0.19</td>
<td>0.46</td>
<td>0.39</td>
</tr>
<tr>
<td>Masculine</td>
<td>0.35</td>
<td>0.11</td>
<td>0.33</td>
</tr>
</tbody>
</table>

| Eigenvalue | 3.66 | 2.79 | 0.52 |
| Percentage of Variance | 52.5 | 40.0 | 7.4 |

*Each scale name represents the positive (higher-scoring) pole of a semantic differential scale.*
Appendix F

Table 3

Varimax Rotated Factor Matrix:

Impressions of the Interpersonal Relationship

<table>
<thead>
<tr>
<th>Scale</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intimacy</td>
<td>0.77</td>
<td>-0.04</td>
</tr>
<tr>
<td>Length</td>
<td>0.59</td>
<td>0.01</td>
</tr>
<tr>
<td>She likes Him</td>
<td>0.71</td>
<td>-0.28</td>
</tr>
<tr>
<td>He Likes Her</td>
<td>0.67</td>
<td>0.26</td>
</tr>
<tr>
<td>He Controls the Relationship</td>
<td>0.04</td>
<td>0.03</td>
</tr>
<tr>
<td>He Maintains the Relationship</td>
<td>-0.02</td>
<td>0.92</td>
</tr>
</tbody>
</table>

Eigenvalue                    | 1.93      | 0.99     |
Percentage of Variance        | 65.9      | 34.1     |

*aEach scale name represents the higher-scoring end of a five-point Likert-type scale.*
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