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Sex Differences in Nonverbal Behavior[1]

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A variety of nonverbal behaviors was coded from videotapes of 88 dyadic conversations. The 44 male and 44 female subjects were paired so that each participated in one conversation with a stranger of the same sex and one conversation with a stranger of the opposite sex. It was found that sex of subject, but not sex of partner, had a significant effect on many of the nonverbal behaviors displayed during the conversations. Subjects' scores on the behavioral measures were correlated with their scores on several personality measures and on a post-conversation questionnaire. Sex differences in these correlations were used to generate hypotheses linking specific behavioral differences between the sexes to more general differences between the masculine and feminine interpersonal styles.

During the past decade increasing attention has been paid to the nonlanguage, or nonverbal, aspects of human communication. It is now generally accepted that much of the communication in a face-to-face interaction would not be captured by a written transcription of the conversation.

A number of researchers have concluded that the nonverbal components of an interaction are more important than the verbal message in determining

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social meaning (Argyle, Alkema, & Gilmour, 1971; Argyle, Salter, Nicholson, Williams, & Burgess, 1970; Mehrabian, 1972). One recent study found that subjects actually did worse than chance when asked to interpret spontaneous social interactions solely on the basis of verbal transcripts. Subjects who viewed videotapes of the same social interactions were very significantly more accurate than the former group in their social interpretations (Archer & Akert, 1977). Thus, nonverbal aspects of interactions appear to provide vital social information.

Ray L. Birdwhistell, a pioneer in research on body movement, has proposed that nonverbal behavior is crucial to gender display and recognition in humans. Primary and secondary sexual characteristics are biologically given, but biological dimorphism is relatively weak in humans In Birdwhistell's analysis (1970), definitions of masculinity and femininity are largely based on learned tertiary sexual characteristics. These are flexible and vary among cultures depending upon the division of labor between the sexes. Nonverbal behaviors are central ingredients in each culture's patterning of tertiary sexual characteristics.

Accordingly, researchers interested in sex differences and sex roles have begun to pay attention to the nonverbal behaviors displayed by women and men. Investigators have combed through the nonverbal literature looking for reported sex differences and for data which suggest meaningful interpretations of these differences. Henley and Freeman (1975) have drawn together evidence relating to nonverbal indicators of status differences between women and men. Frieze and Ramsey (1976) have identified a number of nonverbal cues to sex differences in dominance and warmth. They conclude that nonverbal behaviors serve to maintain traditional sex roles and are resistant to change because of their nonconscious nature.

Along with awareness of the salience of sex differences in nonverbal behavior has come recognition that existing empirical data on these differences are insufficient. In their annotated bibliography of research on sex differences in nonverbal communication, Henley and Thorne (1975) note that although numerous feminists have pointed out sex differences in smiling behavior, no documentation of these differences could be found by surveying recent books on nonverbal communication. After searching the literature for descriptions of nonverbal sex differences, Key (1975) comments that she was able to find "surprisingly little . . . of substance."

The present study was designed as an exploratory search for sex differences in a wide range of nonverbal modalities. Fifty-four behavioral variables, which can be classified into eight distinct nonverbal channels, were derived from ratings of videotapes of dyadic conversations. This "shot-gun" approach seemed justified by the dearth of empirical evidence on specific sex differences.

The behavioral variables were defined at a relatively low level of abstraction. In rating the videotapes, the judges were required only to determine whether or not a specific type of behavior (e.g., head nodding) was occurring at any given moment. They used a minimum of inference, did not need to sum-

marize their judgments over time, and did not need to attribute meaning to the observed actions. This strategy was used to eliminate the possibility that judges might apply different criteria to female and male behaviors, thus confounding their own expectations regarding femininity and masculinity with actual behavioral differences between the sexes.

A secondary aim of the research was to provide some basis for assessing the social meaning of sex differences in specific nonverbal behaviors. To this end, subjects filled out several self-descriptive paper-and-pencil tests. Scores on these measures were correlated with scores on the nonverbal measures, separately for male and female subjects. Some of the correlational patterns which emerged suggested social interpretations for behavioral sex differences.

Third, this study was designed to discover how nonverbal behavior varies not only with the sex of the subjects but also with the sex of the subjects' conversational partners. All subjects participated in two separate conversations – one with a female partner and one with a male partner. Thus, subjects' nonverbal behaviors could be compared over same-sex and cross-sex interactions.

METHOD

The subjects were 88 graduate professional school students at the University of Chicago – 22 men and 22 women from the Law School and another 22 men and 22 women from the School of Social Service Administration. They were recruited by means of a letter and a follow-up telephone call in which the project was described as "an exploratory study of human conversations." In return for their participation in an hour-and-a-half-long session, they were given $3.

Four subjects were scheduled for each data-gathering session. They were paired to form two conversational dyads and seated in two separate rooms in front of videotape cameras. A female experimenter gave the following instructions to each dyad: "I would like the two of you to have a conversation for the next seven minutes or so. You can use the time to get acquainted with each other or to talk about anything else that interests you."

The experimental sessions were arranged so that each subject engaged in two seven-minute conversations – one with a stranger of the same sex and one with a stranger of the opposite sex. The order of same-sex and cross-sex conversations was systematically varied from session to session.

Using the videotapes of these interactions, ratings were made of a variety of behaviors. All ratings involved either counting the frequency with which a particular behavior occurred or timing the duration of its display. Since subjects may have been unduly influenced by the strangeness of the situation at the beginning of each interaction, only the final five minutes of each seven-minute conversation were rated.

To evaluate reliability, a second rater made independent ratings of one subject in each of 20 videotaped conversations. Coefficients of intraclass correlation (Haggard, 1958) between the two sets of ratings were computed.

At total of 54 behavioral variables were derived from the ratings. These variables fall into eight general categories and are grouped in this manner below. After each variable, its interrater reliability coefficient is given in parentheses.

Behaviors Related to Speaking Turns

1. Time subject spends talking (.99).
2. Number of speaking turns subject takes (.96).
3. Average duration of subject's speaking turns (.99).
4. Duration of subject's longest speaking turn (.99).
5. Number of times subject interrupts partner's speech (.87).
6. Rate at which subject interrupts partner's speech (.89).
7. Number of other-oriented questions subject asks (.98).

Back Channel Behaviors

8. Number of times subject nods head during partner's speech (.90).
9. Rate at which subject nods head during partner's speech (.95).
10. Number of times subject gives one-word assents (e.g., "yes" or mhm") during partner's speech (.87).
11. Rate at which subject gives one-word assents during partner's speech (.90).
12. Number of times subject gives longer assents (e.g., "That's right" or "I agree") during partner's speech (.91).
13. Rate at which subject gives longer assents during partner's speech (.88).

Filled Pauses

14. Number of filled pauses (the "ahs," "ums," and "ers" which sometimes occur during hesitations in speech) subject emits (.99).
15. Rate at which subject emits filled pauses during speech (.97).

Laughing and Smiling Behaviors

16. Rate at which subject laughs while speaking (.88).
17. Rate at which subject laughs while not speaking (.96).
18. Total number of times subject laughs (.94).
19. Proportion of time subject spends smiling while speaking (.87).
20. Proportion of time subject spends smiling while not speaking (.87).
21. Total amount of time subject spends smiling (.94).
22. Total number of times subject smiles (.92).

Gazing Behaviors

23. Proportion of time subject spends gazing at partner while speaking (.93).
24. Proportion of time subject spends gazing at partner while not speaking (.77).

25. Total amount of time subject spends gazing at partner (.94).
26. Total number of times subject gazes at partner (.92).
27. Duration of longest gaze subject directs at partner (.91).
28. Average duration of gazes subject directs at partner while speaking (.85).
29. Average duration of gazes subject directs at partner while not speaking (.92).
30. Average duration of all gazes subject directs at partner (.97).

Postural Shifts

31. Rate at which subject shifts leg position while speaking (.91).
32. Rate at which subject shifts leg position while not speaking (1.00).
33. Total number of times subject shifts leg position (.96).
34. Rate at which subject shifts seat position while speaking (1.00).
35. Rate at which subject shifts seat position while not speaking (1.00).
36. Total number of times subject shifts seat position (1.00).

A number of researchers have pointed to the existence of two distinct types of hand movement (Duncan, 1972; Ekman & Friesen, 1969; Freedman, 1972; Rosenfeld, 1966). In this research, *gestures* are defined as hand movements that have a characteristic directionality, occur almost exclusively during speech, and appear to be closely linked to what is being said. *Self-adaptors* are defined as hand movements that involve some form of touching the body or clothing, occur during either speech or silence, and appear to be only indirectly related to what is being said.

Hand Movement

37. Time subject spends gesturing (.98).
38. Proportion of time subject spends gesturing while speaking (.98).
39. Number of times subject gestures (.99).
40. Frequency with which subject gestures while speaking (.99).
41. Average duration of subject's gestures (.99).
42. Duration of subject's longest gesture (.97).
43. Proportion of time during which subject engages in self-adaptors while speaking (.97).
44. Proportion of time during which subject engages in self-adaptors while not speaking (.98).
45. Total time during which subject engages in self-adaptors (.99).
46. Total number of self-adaptors in which subject engages (.88).
47. Duration of subject's longest self-adaptor (.95).
48. Average duration of subject's self-adaptors while speaking (.82).
49. Average duration of subject's self-adaptors while not speaking (.76).
50. Average duration of all subject's self-adaptors (.86).

Foot Movement

51. Total time subject spends moving feet (.99).
52. Number of times subject moves feet (.98).
53. Average duration of subject's foot movements (.93).
54. Duration of subject's longest foot movement (.93).

Before participating in the experimental conversations, the subjects were seated in four separate rooms and asked to complete several paper-and-pencil measures of personality. After participating in the conversations, subjects were again seated in separate rooms and asked to fill out questionnaires about their experiences in the experimental situation.

The personality instruments used were the Adjective Check List (Gough & Heilbrun, 1965), the Inclusion scales from the FIRO-B questionnaire (Schutz, 1958), and the Thorndike Dimensions of Temperament scale (Thorndike, 1966). All three instruments utilize the self-descriptive mode of personality data collection (Fiske, 1971).

A total of 36 personality variables was derived from the three personality instruments. The postconversation questionnaire yielded an additional 7 variables.

RESULTS

Multivariate analysis of variance was applied to the behavioral data. The design of the experiment can be described as a 2 X 2 X 2 X 2 factorial design, with repeated measures over the fourth factor. Factor A is the order in which the subject was paired with male and female partners. Factor B is the professional school in which the subject was enrolled. Factor C is the sex of the subject. Factor D, on which there are repeated measures, is the sex of the subject's partner.

All 54 behavioral measures were analysed simultaneously using the multivariate procedure. The statistical procedure used to handle repeated measures is described in detail by Bock (1973).

Results of the analysis indicate that sex of subject had a significant effect on the behavioral variables (multivariate $F = 2.12$, $df = 54/27$, $p < .01$). Table I shows that 15 of the 54 behavioral variables had significant univariate Fs for this effect. These findings will be discussed in the next section of this article. None of the other factors, including sex of partner, had a significant main effect on the behavioral variables. Neither were any two-way interactions significant at the multivariate level of analysis.

Although the sex of subject X sex of partner interaction did not yield a significant multivariate F, it did yield one highly significant univariate F. It is probably safe to assume that this interaction had a real effect on number of talking turns. Table II presents the relevant statistics for this variable and for a highly related variable, average duration of talking turns.

Table I. Variables with a Significant Sex of Subject Effect

Variable	Mean for males	Mean for females	Univariate F	$p <$
Larger mean scores for males				
Average duration of talk turns[a]	14.72	11.22	6.49	.013
Number of filled pauses	12.09	4.61	20.23	.001
Rate of filled pauses[b]	.08	.03	27.09	.001
Number of seat position shifts	.83	.46	5.79	.019
Number of leg position shifts	1.52	.94	4.92	.030
Larger mean scores for females				
Rate of laughs while speaking[b]	.01	.02	12.03	.001
Rate of laughs while not speaking[b]	.008	.012	5.35	.024
Total number of laughs	2.80	4.74	12.90	.001
Proportion of time smiling while not speaking	.09	.14	10.71	.002
Total time smiling[a]	28.39	42.16	5.85	.018
Total number of smiles	7.27	9.64	8.11	.006
Proportion of time gazing at partner while speaking	.56	.66	9.84	.003
Proportion of time gazing at partner while not speaking	.84	.90	5.68	.020
Total time gazing at partner[a]	207.24	228.88	7.74	.007

[a] Time in seconds.
[b] Rate per second.

Table II. Variables on Which the Sex of Subject × Sex of Partner Effect Approaches Significance

Variable	Sex of partner	Mean for males	Mean for females	Univariate F	$p <$
Number of talk turns	Male	10.66	14.30	9.07	.004
	Female	14.32	14.32		
Average duration of talk turns[a]	Male	16.64	11.02	3.93	.051
	Female	12.80	11.42		

[a] Time in seconds.

Table III. Reduction of the Sex of Partner × Order of Pairing Interaction to a Single Factor: Conversation Number

	Order of pairing	
Sex of partner	Male partner 1st, female partner 2nd	Female partner 1st, male partner 2nd
Male	Conversation 1	Conversation 2
Female	Conversation 2	Conversation 1

One three-way interaction had a significant effect – sex of subject × sex of partner × order in which subject was paired with male and female partners (multivariate $F = 1.88, df = 54/27, p < .04$). Table III shows that the interaction of the latter two factors is equivalent to the effect of a single factor – conversation number. Thus, this three-way interaction can be interpreted as a two-way interaction between sex of subject and conversation number. Differences in

Table IV. Variables with a Significant Sex of Subject × Conversation Number Effect

Variable	Conversation number	Mean for males	Mean for females	Univariate F	$p <$
Rate of laughs while not speaking[a]	1	.0058	.0128	4.07	.048
	2	.0095	.0110		
Proportion of time smiling while speaking	1	.0935	.1553	9.57	.003
	2	.1254	.1324		
Total time smiling[b]	1	24.31	43.93	6.81	.011
	2	32.41	40.39		
Number of seat position shifts	1	1.068	.432	5.12	.027
	2	.591	.477		
Time spent moving feet[b]	1	75.81	57.13	9.85	.003
	2	58.63	72.13		
Average duration of foot movements[b]	1	2.813	2.370	7.38	.009
	2	2.412	3.585		
Duration of longest foot movement[b]	1	10.93	9.57	5.15	.026
	2	8.48	14.39		
Duration of longest gesture[b]	1	10.50	9.34	5.28	.025
	2	8.43	11.64		

[a] Rate per second.
[b] Time in seconds.

degree of familiarity with the experimental situation seemed to provoke characteristically different reactions in male and female subjects. Table IV presents the 8 variables which yielded significant univariate *F*s for this interaction effect.

As an aid in interpreting sex differences in behavior, product-moment correlations between scores on behavioral measures and scores on paper-and-pencil measures were computed separately for male and female subjects. In order to obtain the correlations involving personality variables, subjects' scores on these measures were correlated with their scores on the behavioral measures *summed* across the two conversations in which they participated. Each subject had two sets of scores on the questionnaire about experiences during the conversations – one set for each of the two conversations. Therefore, correlations involving questionnaire items were obtained by correlating subjects' scores on these items with their behavioral scores for the corresponding conversation.

With so many hundreds of correlations, it is quite likely that some are associated with sampling variation and would not be replicated in other data. Many of the larger correlations, however, fell into meaningful patterns or were consistent with other research findings. These suggested interpretations linking sex differences found at the level of nonverbal behavior to more general differences between the masculine and feminine interpersonal styles.

INTERPRETATIONS AND DISCUSSION

The nonverbal behaviors found to vary with subject sex, or with subject sex in interaction with other factors, are discussed below. An attempt is made to relate the specific behavioral differences found between male and female subjects to more general differences between the sexes. Correlational relationships between behavioral variables and personality or experiential variables are reported where relevant.

Length of Speaking Turns

In a dyadic conversation the two interactants must generally take turns speaking. Detailed analysis of the turn-taking mechanism (Duncan, 1972) has shown that the speaker emits a complex configuration of nonverbal cues which mark points in the conversation at which the auditor may appropriately claim the speaking turn.

In the present study, men tended to continue speaking for longer periods, on the average, than did women. When men conversed with each other, they tended to speak in even longer utterances than when they conversed with women. Because of their lengthy speaking turns, participants in male same-sex dyads had time for fewer speaking turns than did participants in any other type of dyad.

The correlational data show that both male and female subjects who took long speaking turns tended to describe themselves in more aggressive terms on the personality measures than subjects who took shorter turns. For men, scores on average duration of talking turns correlated with Adjective Check List scores for Autonomy (.36), Aggression (.34), Deference (−.34), Nurturance (−.34), and Affiliation (−.30). For women, average duration of talking turns correlated with the Adjective Check List score for Aggression (.31).

Kendon and Cook (1969) found that subjects who spoke in lengthy infrequent utterances in dyadic conversations tended to be perceived as more powerful by their conversational partners. Perhaps claiming long blocks of conversation time is a way of asserting oneself as a potent force in an interaction.

A number of investigators have described the traditional masculine interpersonal style as aggressive, assertive, and oriented towards personal achievement; while the traditional feminine interpersonal style is described as affiliative, accommodative, and oriented towards the maintenance of harmonious social relationships (Anastasi, 1958; Bennett & Cohen, 1959, Tyler, 1965). If long speaking turns are related to an assertion of potency, it is not surprising that men take longer turns, on the average, than women. Nor is it surprising that men take the longest turns, on the average, in same-sex interactions where the relative dominance of interactants is not settled a priori by adherence to traditional sex roles.

Filled Pauses

Male subjects tended to emit many more "ahs," "ums," "ers," and the like in the course of speaking than did female subjects. This sex difference was very highly significant.

A great deal of research has been done on filled pauses and related hesitation phenomena. Previous studies have discovered positive relationships between the emission of many filled pauses and emotional arousal (Boomer, 1963; Panek & Martin, 1959), less productive speech and thought (Duncan, 1965; Goldman-Eisler, 1961; Livant, 1963) and an exaggerated degree of self-monitoring during speech (Boomer & Dittman, 1964).

These findings are helpful in understanding the correlations involving filled pauses which were found in this research. For male subjects, rate of filled pauses during speech correlated with the Adjective Check List variables Counseling Readiness (.46), Abasement (.31), Heterosexuality (−.45), Dominance (−.34), and with the Thorndike variables Sociable (−.48) and Ascendant (−.32).

In an unfamiliar, mildly stressful social situation, it is likely that men who described themselves in such negative terms experienced a greater degree of emotional disturbance and engaged in more self-monitoring and cognitive blocking than other men.

A similar correlational pattern was not found for female subjects. No woman emitted a very large number of filled pauses, and no strong correlations involving the filled pause variables were found.

Male subjects may have experienced more normative pressure to assert themselves by speaking in fairly lengthy utterances than did female subjects. One function which has been proposed for filled pauses is that of retaining the speaker's speaking turn in a conversation while he is searching for words (Maclay & Osgood, 1959). A man who is having trouble finding words because of anxiety and self-monitoring may emit many filled pauses in order to hold the floor in the conversation. A woman might be more likely simply to end her speaking turn when words do not flow freely.

Smiling and Laughing

Female subjects tended to smile and laugh more than male subjects. Scores on all 7 variables in this category varied significantly with sex of subject. The magnitude of the sex difference decreased between the first and second conversations for the three variables on which the sex of subject × conversation number interaction showed a significant effect, but the direction of the difference was not reversed.

Striking sex differences appeared in the correlational data involving smiling and laughing variables. The male subjects who laughed and smiled most tended to describe themselves as more sociable, friendly, and affiliative than men who engaged in less smiling and laughing. For men, total number of smiles correlated with the Thorndike variable Sociable (.51), with the FIRO variables Inclusion Wanted (.43) and Inclusion Expressed (.41), and with the Adjective Check List variables Affiliation (.39) and Nurturance (.34). Total number of laughs correlated with the Thorndike variable Sociable (.39) and with the FIRO variable Inclusion Wanted (.35).

In contrast, the female subjects who laughed and smiled most tended to describe themselves as more uncomfortable in the experimental situation and as generally more retiring and deferent than women who laughed and smiled less. For women, total number of smiles correlated with the postconversation questionnaire variable Comfort with Camera (−.32), with the Adjective Check List variables Deference (.37) and Abasement (.34) and with the Thorndike variable Tough-minded (−.39). Total number of laughs correlated with the postconversation questionnaire variable Comfort with Camera (−.33) and with the Thorndike variable Ascendant (−.39).

Since the traditional feminine role calls for affiliative, sociable behavior, women may tend to engage in smiling and laughing more to meet social expectations than to express genuine friendliness and warmth. Bugental, Love, & Gianetto (1971) used a similar hypothesis to account for their finding that fathers' smiles tended to be accompanied by friendly, approving statements

to their children, whereas mothers' smiles were not related to positive verbalizations.

Female subjects who felt uncomfortable in the experimental situation or who saw themselves in deferent, self-abasing terms may have perceived smiling and laughing as safe, acceptable behaviors which would help them win favor in a threatening environment. The finding that women's scores on several smiling and laughing measures tended to be lower for second conversations than for first fits this interpretation. Presumably, subjects were more familiar with the experimental situation and more comfortable during the second conversation, so that they could relax and exhibit fewer socially ingratiating behaviors.

Men are not expected to behave in as friendly and affiliative a fashion as women. Indeed, too much affiliative behavior may run counter to masculine role prescriptions. Men's scores on several smiling and laughing measures tended to be higher for second conversations, when subjects may have been less worried about meeting social expectations. The male subjects who engaged in much smiling and laughing did not do so in order to appear properly masculine, but in order to express genuinely affiliative tendencies.

Gazing at Partner

Sex differences in the use of gazing were first noted by Exline (1963) and have been confirmed by a number of subsequent studies (Argyle & Dean, 1965; Exline, Gray, & Schuette, 1965; Exline & Winters, 1965; Libby, 1970). This research corroborates all previous findings that women spend more time gazing at their conversational partners than do men.

People generally spend much more time gazing at their partners while listening to them than while speaking (Exline & Winters, 1965; Kendon, 1965). Somewhat different functions have been suggested for gazing while listening (Argyle & Kendon, 1967) and gazing while speaking (Efran & Broughton, 1966; Exline & Messick, 1967; Kendon, 1967). In the correlational data generated by this research, there was no overlap between the personality variables which correlated with gazing while listening and those which correlated with gazing while speaking. Clear sex differences appeared in the former set of correlations, but not in the latter.

For male subjects, but not for female subjects, the proportion of time spent gazing while listening correlated positively with personality variables indicating friendliness and sociability. For men, proportion of time gazing at partner while listening correlated with the Thorndike variables Sociable (.35) and Cheerful (.30) and with the FIRO variable Inclusion Expressed (.34). For women, proportion of time gazing while listening did not correlate with any variable related to affiliativeness.

Other research suggests that gazing while listening indicates attentiveness to what is being said and makes the speaker feel powerful and valued (Argyle & Kendon, 1967). Perhaps, like smiling and laughing, gazing at one's partner while listening is an affiliative behavior which, as such, is required by the feminine role. Women may, therefore, gaze at their partners to meet social expectations rather than to express genuine interest in the other.

For both men and women, the proportion of time spent gazing at partner while speaking correlated positively with personality variables indicating high self-control and low spontaneity. For men, proportion of time gazing at partner while speaking correlated with the Thorndike variable Placid (.37) and with the Adjective Check List variable Order (.34). For women, scores on this behavioral variable were correlated with scores on the Thorndike variable Responsible (.39) and the Adjective Check List variable Exhibition (−.31).

While formulating their speech, persons with high self-control and low spontaneity may be more inclined to seek visual feedback from their partner than a more spontaneous person would. The finding that women did more gazing while speaking than men may indicate that women's speech productions tend to be guided more by partners' responses and less by their own impulses than are men's speech productions.

Postural Shifts

Male subjects made significantly more seat position shifts and leg position shifts during the experimental sessions than did female subjects. In addition, sex of subject interacted with conversation number to produce a significant effect on number of seat position shifts.

To interpret these findings in a fully satisfactory manner is difficult. Very little research on postural shifts has been done, and the correlational data generated in this study fell into no clear patterns.

Two hypotheses are suggested to account for the sex differences found. The first is that postural shifting during a conversation signals restlessness, whereas remaining motionless is a sign of attentiveness. Women exhibit fewer postural shifts than men because the feminine role calls for more other-oriented behavior.

The second hypothesis relates sex differences in frequency of postural shifts to sex differences in dress. The number of positions which a person wearing a skirt can assume with propriety is probably much smaller than the number of positions a person wearing pants can assume. Maintaining propriety while shifting from one position to another may also be more difficult for the skirt-clad individual. Thus, for women, training in propriety may mean training in immobility.

Hand Movement

Only one of the 14 variables in this category showed any significant relation to subject sex. This variable was duration of the longest gesture exhibited by a subject. Duration of the longest gesture tended to decrease between first and second conversations for male subjects, while it tended to increase for female subjects. Factors which may account for this finding are considered in the following discussion of a similar finding for several foot movement variables.

Foot Movement

Scores on three of the four foot movement variables showed a significant sex of subject × conversation number interaction effect. These variables were time spent moving feet, average duration of foot movements, and duration of longest foot movement. Mean scores decreased between first and second conversations for male subjects, while they increased for female subjects.

The same changes between first and second conversations were found on two other body movement variables – number of seat position shifts and duration of longest gesture. Perhaps being in the strange experimental situation in front of a videotape camera for the first time tended to increase the overall level of body activity of male subjects, while it inhibited that of female subjects. Bodily activity may have been a socially appropriate way for men to express nervousness and tension. Women, however, may have felt a greater need to maintain proper ladylike immobility when they felt themselves on display in an unfamiliar situation.

Both male and female subjects probably felt somewhat more comfortable and relaxed during the second conversation. For men, greater comfort may have been straightforwardly reflected in reduced body activity. When women became more comfortable, in contrast, they may have felt freer to deviate from the standard of ladylike behavior and, therefore, to discharge accrued nervous energy through body activity.

SUMMARY AND CONCLUSIONS

The design of the study permitted analysis of the effects of both subject sex and partner sex upon the mean use of a relatively large number of nonverbal variables. The results indicate that (a) men and women significantly differ in their use of certain nonverbal modalities and (b) men and women do not significantly vary the extent to which they use most of these nonverbal behaviors between same-sex and cross-sex interactions.

Two major limitations on the generalizability of these findings must be kept in mind. The first arises from the rather atypical population from which

the subjects were drawn (graduate professional school students), and the second arises from the unusual nature of the experimental situation (conversations in the presence of videotape cameras). The second limitation is especially important when one evaluates the negative finding regarding effect of partner's sex. The presence of unusual situational factors may have had such an impact upon nonverbal behavior that other situational factors such as partner's sex became less salient than usual.

In addition to sex differences in nonverbal behavior itself, sex differences were found in the patterns of correlation between scores on behavioral measures and scores on written measures. These differences were used to generate hypotheses linking specific behavioral differences between the sexes to more general differences between the masculine and feminine roles.

Some of the behavioral differences found between male and female subjects could be interpreted as sex differences in the display of affiliative and sociable behaviors. Female subjects did more smiling and laughing and paid more visual attention to their partners than did male subjects. Sex differences in patterns of correlation between scores on these behavioral measures and scores on self-descriptive measures suggest that female subjects engaged in large amounts of smiling, laughing, and gazing at their partners in order to fulfill traditional feminine role prescriptions. In contrast, male subjects who engaged in large amounts of these behaviors seem to have done so in order to express individual tendencies toward affiliative behavior.

Another set of behavioral differences seem related to sex differences in assertive behaviors. Both correlational data from this study and the findings of other research suggest that claiming long blocks of conversation time is a way of asserting oneself as a potent force in an interaction. During the experimental conversations, male subjects tended to take longer talking turns, on the average, than female subjects and also to use more filled pauses, perhaps to hold their turns while searching for words.

Other behavioral differences found between male and female subjects seem to relate to sex differences in permissible activity levels. Men tended to receive higher scores on a number of body movement variables during the first conversation than during the second one, whereas the reverse was true for women. Bodily activity may be a socially appropriate way for men to express their nervousness in unfamiliar situations. Women, on the other hand, may tend to maintain ladylike immobility when they feel most uncomfortable and to exhibit more bodily activity later when they feel more relaxed.

This study's findings indicate clearly that researchers in the field of nonverbal communication cannot afford to ignore subject sex as a variable. Some of the sex differences found in this research, such as those involving amount of time spent gazing at partner, have already been widely reported. In many areas, however, the effect of subject sex has not been investigated. Although a great deal of research has been done on filled pauses, for example, reports of this work do not indicate that any previous investigators checked for sex differences.

In the present research, sex of partner did not have a significant effect on most of the nonverbal behavior displayed in dyadic interactions. It is probably unwise to generalize this conclusion beyond the variables studied or beyond the particular experimental situation utilized. In other situations, or with other behavioral variables, partner's sex might become a very salient factor, which the researcher could not safely ignore.

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