

## Sex differences in listening comprehension.

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### **Abstract:**

In order to examine the effect of sex of the speaker on listening comprehension in a public speaking situation, 60 male and 60 female subjects viewed either a male or female speaker presenting a talk on either a masculine (chess), feminine (interior decorating), or neutral (snow skiing) topic. The results supported the hypotheses that when a male speaks he is listened to more carefully than a female speaker, even when she makes the identical presentation. No differences were found when the topic was biased towards one sex; males were still recalled better than females. The above relationships were also true for male and female subjects; both recalled information more accurately from male speakers than from female ones. Rating of informativeness of the presentation showed no difference for sex of the speaker; but effectiveness ratings of the speaker indicated that while both male and female subjects rated male speakers equally effective, the same was not true for the female speakers. Male subjects rated the female speakers significantly more effective than they did male speakers, whereas female subjects rated male and female speakers equally effective.

**Keywords:** listening comprehension | public speaking | gender studies | gender differences

### **Article:**

A prevalent finding in the literature is that men and women are not evaluated equally (Rosenkrantz, Vogel, Bee, Broverman, & Broverman, 1968; Elman, Press, & Rosenkrantz, 1970), even when they produce objectively the same results (Goldberg, 1968; Pheterson, Kiesler, & Goldberg, 1971; Mischel, 1974; Starer & Denmark, 1974). Sex role stereotypes appear quite consistently (Rosenkrantz et al., 1968; Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972; Kaplan & Goldman, 1973; Gordon & Hall, 1974), and these traditional beliefs of appropriate sex role behavior are maintained by both men and women. Typical of the results is that men are often considered to be more intelligent, sincere, and competent than are women (Spence & Helmreich, 1972).

The implications of this differential evaluation are far-reaching, for not only does the tendency to evaluate ability and achievement on the basis of sex remain but female-related activities continue to be viewed negatively. Quite disturbing is the fact that many women also display such differential evaluation (Goldberg, 1968; Pheterson et al., 1971; Mischel, 1974; Starer & Denmark, 1974).

An additional implication of the differential evaluation of men and women concerns the effectiveness of female performance as compared to male performance. For example, although several studies (e.g., Day & Stogdill, 1972; Wexley & Hunt, 1974) have not found real differences in leadership behavior of men and women, differences are perceived to exist. Even the attribution of successful performance appears to be influenced differentially by the sex of the actor (Deaux & Emswiler, 1974; Feldman-Summers, & Kiesler, 1974).

As one basis for this differential evaluation, Berger, Cohen, and Zelditch (1972) and Lockheed and Hall (1976) have suggested that differences in the evaluation of behavior of males and females are directly related to the effect of sex as a status characteristic. Since the male sex is more highly valued (and thus is accorded higher status) assessments of male behavior are also valued more, even when compared to equally effective behavior performed by a female.

A possible consequence of these perceived differences is that if women are perceived as being less competent, this might influence their ability to exert influence and impair their credibility. Men appear to see themselves as more competent, intelligent, assertive, success oriented, interesting, and as a better source of information than women. Perhaps, as Hawley (1971, 1972) suggests, women are influenced by what men think of them and think of themselves in a similar manner, it is well known, for example, that men are considered better problem solvers than women, and this may account for why men are frequently sought for consultation by both men and women. Greenberger and Sorensen (1970), for example, reported that junior high school faculty men and women chose men more frequently for consultation, and faculty men chose other men more often for respect. The results are particularly intriguing when it is noted that women faculty members were not viewed as being less competent in their teaching skills than the men. The differences in preferred sex of consultant suggests a difference in verbal and communicative ability between men and men, men and women, and women and women. Several other studies (Scheidel, 1963; Globig & Touhey, 1971 ; Rossiter, 1972) also suggest such a possibility.

In general, evidence from the literature supports the notion that men and women are not evaluated equally. The research to date further suggests that women, as well as men, hold less favorable views of women; and the effect of this differential evaluation may have counterproductive or even detrimental effects on the perception of women, including their perceived effectiveness as communicators. The sex differences in listening comprehension, as reported by Scheidel (1963) and Globig and Touhey (1971), and the view that women are less competent than men suggest that the perceptions of a speaker and the speech may be influenced

by the sex of the speaker, the sex of the listener, and/or both. The devaluation of women's efforts by other women and the general negative attitudes of men towards the capabilities of women suggest that men would be perceived as better speakers than women.

The purpose of the present study was to examine this possibility. Specifically, the hypothesis that women do not listen to other women as well as they listen to men was tested. It was hypothesized that when men talk, they are listened to more attentively than women, even if both sexes are saying the same thing, in addition, the sex-appropriateness of the content was not expected to influence listening comprehension. It was predicted that although females speaking on a "feminine" topic may be listened to more closely than if the topic were a "masculine" one, male speakers would be listened to more closely regardless of the gender of the topic.

## **METHOD**

### *Subjects*

One hundred and twenty (60 males and 60 females) graduate and undergraduate college students at the University of North Carolina at Greensboro were recruited by the first author and asked to take part in that experimenter's master's thesis experiment.

### *Apparatus and Materials*

Presentations were videotaped in an auditorium using a SONY black-and white studio camera model ACV-4000A and a SONY ECM-16 condenser microphone. Recording was done on a SONY tape recorder-Color Videocorder model AV 8650 with SONY videotape V-32. The talks were presented on a Concord television monitor model MR-20 and a Panasonic Tape-a-vision tape recorder model NU-3020. Topics were generated from a list of 29 skill activities that Schneider (1972) had found to be characteristically identified as being masculine, feminine, or neutral.

In a preliminary investigation, Gruber (1976) employed Schneider's list in order to establish normative data on knowledge of and interest in masculine, feminine, and neutral activities. For the present study, these results were used to identify topics of moderate interest that were generally unfamiliar to students. For each gender category, three two-page presentations were selected from popular sources and edited into script form for presentation (presentation time was five minutes). The topics chosen for presentation were chess (masculine), snow skiing (neutral), and interior decorating (feminine). A panel of six graduate student judges (three males and three females) evaluated the scripts and rated them on clarity, content, and evidence of bias towards or against sex. Selection and editing of the final topic presentations (one presentation per topic) was based on the panel's evaluations.

*Selection of the Speakers.* Two males and two females presented the speeches. The speakers were selected on the basis of their appearance and speaking voices. The speakers selected were

rated by the panel of student judges on their attractiveness as well as on the intonation, clarity, and diction of their speaking voices.

### *Experimental Design*

The design of the study was a  $2 \times 2 \times 3$  factorial design with three variables sex of the subject, sex of the speaker, and sex orientation of topic. Half the subjects saw and heard a male speaker, while half saw and heard a female speaker. Topics for presentation were of either masculine, feminine, or neutral interest (chess, interior decorating, and snow skiing, respectively). In addition, the sex of the listener was varied so that for each speaker half the audience was male and the other half female. In summary, six conditions were generated consisting of either a male speaking on a masculine, feminine, or neutral topic, or a female speaking on a masculine, feminine, or neutral topic. There were 10 males and 10 females in each condition, subjects were run in groups of 1 to 8 individuals until all conditions had at least 5 male and 5 female subjects. In cases of more than 10 (5 males and 5 females), subjects were randomly excluded from the analyses.

### *Procedure*

Subjects were greeted by the experimenter and were allowed to relax and talk with one another before the session began. After the arrival of all subjects in the group to be tested, subjects were requested not to talk and were read the instructions.

After being read the instructions, subjects were asked to rate their knowledge and interest of the topic to be presented on a 7-point scale. Each group was then shown a videotaped presentation of either a male or female speaking on a masculine, feminine, or neutral topic. After the presentation, rating slips were supplied on which subjects were asked to rate the speaker on a scale of 1 to 7 for overall effectiveness. Subjects were also given a 7-point rating scale on which they were asked, "How informative was the presentation?" Subjects were then asked to recall as much of the content of the presentation as they could. As an added test for content recall, subjects were given a checklist of items and asked to check which items were mentioned in the presentation they had just heard.

On a 7-point masculine-feminine scale (1 being associated with masculine), subjects were asked to evaluate the sex-appropriateness of the topic they were presented.

As a check on the perceived attractiveness of the speakers, recent photographs of the speaker and several other individuals (the three other speakers) were shown. Subjects were asked to rate each picture on a 1 to 7 scale of attractiveness, 7 being most attractive.

## **RESULTS**

### *Free Recall and Checklist Recall*

The measures most important to the support of the hypotheses are the free recall and the checklist recall. Since it was hypothesized that both male and female subjects would recall more information from a male speaker than from a female speaker giving the same presentation, the results of these measures are of critical importance to the hypothesis. The free recall score was based on the number of factual items subjects reported that were included in the talk they heard. The topic presentations differed slightly in the number of factual items, so to allow for a comparison of free recall scores across topics, a relative score - the number of facts reported by each subject divided by the total possible number of facts for that topic presentation - was calculated. In addition, an absolute score, which was simply the absolute total number of facts reported by each subject, was also analyzed. (A relative score may be interpreted as a more conservative score because it is based on how much information a subject could have recalled, whereas absolute scores are a bit more liberal and may be considered a measure of how much information a subject actually did recall.) Subjects' protocols were scored by three independent judges. The mean of the judges' ratings (of the amount of information reported) was used in the computation of the free recall scores. The checklist recall measure was a true-false measure of 10 items (5 keyed true and five keyed false) based on information taken directly from the presentations. Mean scores for recall of information are presented in Table I.

**Table 1 is omitted from this formatted document.**

A multivariate analysis of variance for relative recall and checklist recall produced a marginally significant main effect for sex of speaker, approximate  $F(2, 107) = 2.41$ ,  $p < .092$ ; a highly significant main effect for sex of subject, approximate  $F(2, 107) = 5.83$ ,  $p < .004$ ; and a significant main effect for topic, approximate  $F(4,216) = 2.65$ ,  $p < .034$ . No interaction effects were found. The canonical correlations indicated that for the effect of sex of speaker, checklist recall contributed very highly to the effect ( $r = .96$ ) and relative recall somewhat "less ( $r = -.60$ ). For sex of subject, the checklist measure also contributed highly to the effect ( $r = .95$ ), but the contribution of relative recall was negligible ( $r = -.03$ ).

A multivariate analysis of variance for absolute recall and checklist recall yielded main effects for sex of speaker, approximate  $F(2,107) = 3.31$ ,  $p < .039$ , and sex of subject, approximate  $F(2, 107) = 5.26$ ,  $p < .007$ . Examination of the canonical correlations for the effect of sex of speaker showed that both the checklist and absolute recall measures contributed about equally ( $r = .81$  and  $.70$ , respectively) to the effect. In contrast, for the effect of sex of subject, the checklist measure contributed virtually everything to the effect ( $r = .99$ ), while absolute recall was only slightly related ( $r = -.17$ ).

Univariate analyses of variance were also performed to further identify the effects of the variables for each dependent measure. For the relative recall measure, no effect of sex of speaker or sex of subject was found, but a main effect of topic did reach significance,  $F(2,108) = 5.46$ ,  $p < .006$ ,  $U.L = .067$ . A Scheffé post hoc comparison indicated significant differences in recall of information between chess and snow skiing ( $p < .01$ ), and interior decorating and snow skiing ( $p$

< .10). Recall of information was greatest for chess and recall of information was least from the presentations on snow skiing. For absolute recall the effect of sex of speaker approached significance,  $F(1, 108) = 3.26, p < .073, U.L = .018$  ; male speakers were associated with greater recall of information; no other effects were found.

The results of the analysis of variance for the checklist measure indicated that subjects recalled more information (identified more correct items and misidentified fewer incorrect items as correct) when listening to a male speaker than when listening to a female speaker,  $F(1, 108) = 4.44, p < .037, U.L = .026$ . There was no sex of subject  $\times$  sex of speaker interaction; male subjects recalled significantly more information than female subjects,  $F(1, 108) = 10.62, p < .001, U.L = .074$ .

#### *Effectiveness of the Speaker and Informativeness of the Speech*

Overall, male subjects rated the speakers as better speakers (more effective) than did female subjects,  $F(1,108) = 5.31, p < .023, U.L = .033$ . Also, there was a significant interaction for sex of speaker  $\times$  sex of subject,  $F(2, 108) = 5.31, p < .023, U.L = .029$ . Male speakers were rated equally effective ( $M= 3.17$ ) by both male and female subjects. Female speakers were perceived as significantly better than male speakers by male subjects ( $M= 4.07, Scheff\sim, p < .10$ ), but not by female subjects ( $M= 2.93$ ). Female subjects saw no difference in effectiveness between male and female speakers (means = 3.17 and 2.93, respectively). Furthermore, male subjects rated female speakers significantly higher (more effective) than did female subjects ( $Scheff\sim, p < .025$ ). Thus, male speakers were seen as moderately effective by both male and female subjects; male subjects perceived female speakers as more effective than male speakers; and female subjects saw no difference in the effectiveness of male and female speakers.

No sex differences were found for the ratings of informativeness of the presentations.

#### *Prior Knowledge and Interest*

Because differences in recall of the content of the presentations may have been influenced by prior knowledge and interest, these measures were also examined as potential factors accounting for the results. The analysis of Variance revealed that for the knowledge measure, across all topics, male subjects reported significantly more prior knowledge than did female subjects  $F(t, 108) = 9.32, p < .003, U.L = .058$ , including knowledge for the feminine topic of interior decorating. Subjects were most knowledgeable about chess and least knowledgeable about snow skiing; this difference was significant ( $p < .05$ ) using Scheff $\sim$ 's post hoc comparison. No other comparison of knowledge for topic was significant.

For the interest measure a significant sex of subject  $\times$  topic interaction was found  $F(2, 108) = 3.92, p < .022, U.L = .049$ . Male subjects were more interested in chess and snow skiing than female subjects, who were more interested in interior decorating. To check the effect of prior knowledge and interest, a multivariate analysis of covariance on the measures of information

recall was performed. Results revealed that information presented by male speakers was recalled better than information presented by female speakers regardless of subjects' prior knowledge and interest in the topic presented. In addition, when knowledge and interest were controlled, male subjects outperformed female subjects on the information recognition (checklist recall) measure; however, the free recall measures did not show this relationship.

### *Masculinity-Femininity, Identification with Sex of the Speaker*

An analysis of variance on the masculinity-femininity ratings of the topics was performed to examine the possibility of a sex bias or identification of the gender of the topic by sex of the speaker.

Highly significant main effects were found for both sex of the speaker,  $F(1, 108) = 17.84, p < .0001, U./ = .095$ , and topic,  $F(2, 108) = 20.32, p < .001, U./ = .225$ . A significant sex of speaker  $\times$  topic interaction was also found,  $F(2,108) = 2.95, p < .055, UI. = .029$ .

To determine the simple interaction effects, Scheffé's post hoc comparison tests with Cicchetti's correction (1972) were performed to identify the simple interaction effects. The results of this analysis showed that ratings of the masculine topic (chess) were significantly different for sex of speaker, so that chess was perceived as a more masculine activity when presented by a male than when presented by a female speaker. No sex bias of topic by speaker was found for the feminine or neutral topic (interior decorating or snow skiing), although there was a tendency to rate interior decorating as a more feminine activity when it was presented by a female speaker.

In addition, further support of a sex of speaker bias on the identification of the gender of the topics was provided by the fact that the ratings for chess (the masculine topic) were rated significantly different (in the masculine direction) than either interior decorating or snow skiing, when presented by a male speaker. Interior decorating (the feminine topic) and snow skiing (the neutral topic) were not perceived as significantly different.

When presented by female speakers, interior decorating was rated significantly different from chess and snow skiing. No differences in ratings were found between chess and snow skiing. Thus the results provide some support for a sex biasing of topics, as suggested by the gender identification of the topic with sex of the speaker. When the male speaker presented the masculine topic, it was perceived as more masculine than when presented by a female speaker. The same kind of effect occurred for the female speakers and the feminine topic. When presented by the female speakers, interior decorating was rated significantly different (in the feminine direction) from either chess or snow skiing. For both male and female speakers, snow skiing was not perceived differently from the topic associated with the opposite sex.

## **DISCUSSION**

The results of the present study confirm the prediction that when a male and female say the same thing, more attention will be paid to what the male says than to what the female says. More information was recalled from presentations given by male speakers than from identical presentations given by female speakers, by both male and female subjects. Subjects watching presentations made by a male speaker recalled (free recall) significantly more information and identified more information as correct (checklist recall) than subjects who heard the same presentations by a female speaker. The sex-appropriateness of the topics had no effect on a speaker's effectiveness in conveying information. Regardless of the topic, male speakers were more effective; subjects watching a male present recalled more information and identified more information correctly than did subjects who viewed presentations by a female speaker.

In the present experiment, male speakers were evaluated equally effective by both male and female subjects. Female subjects also rated the female speakers as equal in effectiveness to the male speakers, but male subjects did not. Instead, male subjects perceived the female speakers as significantly more effective than their male counterparts. Considered alone, this finding suggests that males felt the female speakers were more effective in presenting the topics than were the male speakers, whereas female subjects saw both sex speakers as equally competent. However, when the results of information recall for sex of the speaker are also considered, a somewhat paradoxical situation results. Although male subjects rated the female speakers as more 'effective' than the male speakers, they recalled significantly less information from their presentations. To account for this seemingly paradoxical phenomenon, two explanations can be offered. One is that the male subjects were attracted to the female speakers and paid more attention to their physical appearance than to what they were saying. This explanation, though plausible is unlikely for two reasons. First, the presentations were videotaped and only the speakers' shoulders, neck, and head were visible, thus eliminating other body parts that may have been distracting to the audience. Physical appearance was limited to speakers' heads. Although female speakers were rated somewhat more attractive than male speakers, attractiveness ratings of male and female subjects for each of the speakers were almost identical. Secondly, had they paid more attention to the female speakers' physical appearance, male subjects' recall of information should have been a great deal less because of the distraction. However, these males recalled only about one item less than males who watched male speakers. The average difference on the item recognition task was less than one-half of an item, hardly enough to support the argument that males were distracted by female speakers' physical appearance.

Some recent findings suggest another explanation. Until recently, the results of studies dealing with sex bias and the evaluation of performance consistently showed that identical performances by a male and female were not evaluated equally (Goldberg, 1968; Pheterson et al., 1971; Starer & Denmark, 1974). When compared to the same performance by a male, female performance was rated as inferior. From these studies and others (i.e., Deaux & Emswiller, 1974), it would be predicted that males would be perceived to do at least moderately well in most of what they attempted to do. Also, performance by a female would be expected to receive a lower evaluation



than the same performance by a male. However, other studies (i.e., Chobot, Goldberg, Abramson, & Abramson, 1974; Mischel, 1974; Levenson, Burford, Bonno, & Davis, 1975) have reported a reversal to this trend of negative evaluation of performance by women. Because of consciousness raising and acceptance of work performed by women other women may now be more apt to identify a female's performance as being on a par with a man's. Men, too, may also be aware of the increased attention given to the quality of an activity performed by a woman. However, their awareness may only extend to the identification and approval of performance by women and not to any real appraisal or appreciation of it. Rather than evaluate the actual performance, males may compare their impression of the performance to what they expected the performance to be. Thus, when called to evaluate a female's performance when she has done well, males might tend to overevaluate her performance, rating her behavior superior to that of a male, even if in actuality the performance of the activity was the same. Male subjects, then, may have overrated the female speakers' effectiveness because they did not expect them to do so well in a relatively informative presentation.

The fact that males did better on the information recall tasks and indicated more prior knowledge about a wide variety of topics is an interesting point. It has already been demonstrated that there is a general bias against competent when (Hagen & Kahn, 1975; Piacente, Penner, Hawkins, and Cohen, 1974; Seyfried & Hendricks, 1973), and the cause of this bias has typically been related to expected sex-role behavior and sex-role stereotyping. Stated simply, the notion of sex-role stereotyping implies that women are not supposed to be as competent as men, particularly in skills and activities that men typically engage in. This line of thought might be extended to include knowledge of activities and skills that are generally considered to be performed by men. Although women may also take part in these activities, their "secondary" association with these activities may limit their degree of knowledge, so that they are likely to have only superficial information in comparison to men. Thus, it hardly seems surprising that male speakers would be listened to more closely than female speakers, and that this would be the case for a wide range of topics. It might also be expected that only topics strongly identified with being female would receive more attention if presented by a female than by a male.

Finally, one additional result of interest was that the rating of the masculine topic, chess, and the feminine topic, interior decorating, was apparently influenced by whether the speaker was male or female. Subjects rated the masculine topic as less masculine when presented by a female and the feminine topic as less feminine when presented by a male than when the presentations were made by a male or female speaker, respectively. This finding suggests that one way to reduce the sex bias of certain activities is to get more individuals of the sex not typically associated with that activity to increase their participation in that activity. While this is an interesting prospect and has already received notice and action (i.e., with domestic duties), it should not be concluded that a mere change of association of an activity from being characteristic of one sex to being characteristic of both sexes necessarily changes the activity. Some research (e.g., Touhey, 1974) has suggested that a change in the number of females entering professions traditionally

considered masculine will reduce the status and prestige of these professions. Why people feel this way can only relate to the stereotypes perpetuated in our culture. These stereotypes have not and will not disappear by a process of association with both sexes. The role of future research should be to identify what causes these stereotypes to be developed and maintained and to find acceptable means to eliminate the practices that tend to perpetuate them.

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### Notes

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