

AN EXPERIMENTAL STUDY OF THE EFFECT OF INTEREST IN THE
SPEECH TOPIC ON MALE AND FEMALE
RETENTION AND ATTITUDE CHANGE

by

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TABLE OF CONTENTS

CHAPTER	PAGE
I. BACKGROUND AND RATIONALE - PREVIOUS RESEARCH IN RETENTION.	1
II. BACKGROUND AND RATIONALE - PREVIOUS RESEARCH IN ATTITUDE CHANGE.	9
III. PROCEDURE.	18
IV. RESULTS.	23
V. CONCLUSIONS.	32
A BIBLIOGRAPHY OF WORKS CONSULTED	34
APPENDICES	
A. TEXT OF THE BREAST FEEDING SPEECH.	37
B. TEXT OF THE ROTARY ENGINE SPEECH	40
C. INSTRUCTION SHEET.	43
D. RETENTION TEST - BREAST FEEDING.	44
E. RETENTION TEST - ROTARY ENGINE	45
F. ATTITUDE TEST - BREAST FEEDING	46
G. ATTITUDE TEST - ROTARY ENGINE.	47
H. EMMOS SCALE.	48

LIST OF TABLES

TABLE	PAGE
I. RETENTION (MEAN SCORES)	26
II. ANALYSIS OF VARIANCE - RETENTION	27
III. ANALYSIS OF VARIANCE - WISE...FOOLISH ATTITUDE SCALE	28
IV. ANALYSIS OF VARIANCE - GOOD...BAD ATTITUDE SCALE	29
V. ANALYSIS OF VARIANCE - USEFUL...USELESS ATTITUDE SCALE	30
VI. MEAN SCORES AND T-TEST RESULTS - WISE...FOOLISH ATTITUDE SCALE	31
VII. MEAN SCORES AND T-TEST RESULTS - GOOD...BAD ATTITUDE SCALE	31
VIII. MEAN SCORES AND T-TEST RESULTS - USEFUL...USELESS ATTITUDE SCALE	31

CHAPTER I
BACKGROUND AND RATIONALE
PREVIOUS RESEARCH IN RETENTION

Previous research in the areas of male and female retention and attitude change following an oral communication indicates that female subjects retain significantly less of the content of a speech, yet change their attitudes more than the male subjects. An examination of these studies reveals that interest in the speech topic selected has not been included as an independent variable.

The results of available experimental research dealing with retention following an oral communication suggest that male auditors retain significantly more factual information than female auditors. In "Sex and Persuasibility", Thomas Scheidel supports such an hypothesis. In this study, 242 college students, 104 men and 138 women, listened to an eleven-minute persuasive speech opposing further expansion of federal power in the areas of health and education. They then completed a retention test over the material presented in the speech.

Women were found to retain significantly less of the material tested than did men. The design of the retention test permitted the experimenter to secure, in addition to the total retention scores, subscores of retention in the areas of health and of education. Men and women exhibited no significant difference in retention of material dealing with education.

Scheidel admits in his discussion of the experiment that, "Since most of the female subjects were strongly oriented to education, they probably had greater interest and more knowledge concerning the part of the address dealing with education than they did regarding the other parts of the stimulus speech."¹

In the summary, however, he states that ". . . women, as compared with men, are. . . significantly less retentive. An analysis of the results of the subtests tends to confirm previous findings that subjects tend to retain more when they are well informed on the topic."² Scheidel's precise meaning in this summary is unclear. These statements may convey the impression that, as a general rule, women are less retentive than men; and only in areas in which they are particularly knowledgeable will they elevate their low retention scores. He overlooks the fact that interest in the topic may be affecting both male and female retention scores. The fact that there was no significant difference in male and female retention scores in the area of education indicates that the topic should be included as an independent variable when measuring retention. Interest in the topic chosen, rather than simply prior knowledge of the subject, may be affecting the retention score results.

In "An Experiment Comparing Discussion with Debate", William R. Carmack and Gregg Phifer obtained results similar to those of Scheidel. In this study, 337 women and 207 men listened to a one-hour recorded debate and a one-hour recorded discussion. The subjects then completed an 80-item retention test on both the debate and the discussion. The experimenters found that

men retained significantly more factual information after both the discussion and debate.

The authors themselves note one uncontrolled variable which may have influenced the results obtained: "It is probable that males in the audience listening to the discussion and debate about a fair employment practices law were more interested in factors affecting employment than females. . . . The experimental design did not include a check on this possibility."³

Although both Scheidel's experiment and that of Carmack and Phifer obtained statistically significant results regarding male and female retention scores, neither of the studies attempted to utilize interest in the topic chosen as an independent variable. As Carmack and Phifer realized, this omission may have significantly influenced the retention scores.

A study by Ralph Nichols, "Factors in Listening Comprehension", also indicates that male auditors have higher retention scores than females. A sample of 132 males and 68 females from the University of Minnesota listened to six ten-minute lecture excerpts given by six instructors in six different subject areas. Two presentations were given each day for three days. The general subjects discussed in the lectures were literature, economics, biology, sociology, psychology, and chemistry. After each of the lecture excerpts was given, the participants completed twelve multiple-choice questions based on its content. Analysis of the results from the retention tests indicated "there was evidence to suggest but not establish that. . . , sex of the listener. . . influenced the listening comprehension of

the subjects."⁴

Although Nichols indicates that he chose a cross-section of the enrollment in freshmen communications courses at the University of Minnesota as subjects for this experiment, he had almost twice as many male as female subjects. He does not indicate whether the communications courses were required; the striking imbalance in the number of male and female subjects makes it seem doubtful.

It is evident, also, that Nichols made no attempt in this experiment to ascertain the influence of the topic chosen. It is impossible to determine from the information given whether the specific topics discussed in each of the six lectures were of greater interest to one sex than to the other. While he concludes that "Real interest in the subject discussed"⁵ was a factor influencing listener comprehension, he provides no indication of the degree of interest of each of the sexes in the six topics chosen.

In a study by Stanley F. Paulson⁶, men had, once again, significantly higher mean retention scores than women. A total of 579 men and 399 women listened to a recorded speech favoring lowering of the voting age to eighteen, and completed a 50-item multiple-choice retention test which covered the content of the speech.

Paulson, like Nichols, does not mention whether the Fundamentals of Speech and the Communication courses from which the subjects were selected were required courses. The fact that there were 180 more men than women subjects may have influenced the results obtained. Further, no control group is mentioned,

nor is there any information from which we might ascertain the validity of the retention test. There is no way of knowing whether the men might have done better on the retention test without listening to the intervening speech. Finally, there was once again no control included for possible effects of the particular topic chosen. Because of the gaps Paulson has left in his design, the fact that men had higher retention scores than the women is inconclusive.

Donald Sikkink⁷, in a study similar to that of Paulson, prepared a thirteen-minute recorded speech which also advocated lowering the voting age to eighteen. Sikkink, like Paulson, fails to mention whether the sample was randomly selected from the college population, and makes no attempt to determine what effect interest in the topic has, if any, on the results of the retention test. Further, since he apparently has not utilized a control group, the validity of the 46-item true-false test is questionable.

Not all of the experimental literature pertaining to male and female retention indicates that men have higher retention scores, however. James R. Brandon⁸ conducted an experiment with 72 male and 72 female subjects randomly selected from students in the beginning speech courses at the University of Wisconsin. Each participant viewed a thirty-minute television program which presented information on three topics: the lives and works of Tennessee Williams, Sean O'Casey, and T. S. Eliot. Following the television presentation, each subject completed a combined retention and interest test on three topics. In this experiment, women had significantly higher retention scores.

Brandon does not indicate whether the courses from which the subjects were selected were required, leaving us once again in doubt as to whether the sample is representative of the population being studied. Further, the use of television as the presentation medium may have affected the results obtained.

However, Brandon took two precautions which the previously-mentioned experimenters omitted. First, he equalized the number of male subjects with the number of female subjects. Second, he administered an interest test which indicated that the men and the women participating in the experiment showed no significant difference in their expression of interest in the topic discussed.

Although no pretest was given to determine whether the women had greater pre-experiment knowledge of the subject matter, each of the retention test items used was checked for validity and reliability prior to the administration of the actual experiment. While this study in no way proves that the topic chosen affects the retention scores, it is interesting to note that the only experiment indicating higher female retention also utilized a topic which was apparently of relatively equal interest to both sexes.

Although Brandon's study is the only one indicating females have higher retention scores following an oral communication, three experimenters from Florida State University (Robert Kibler, Larry Barker, Donald Cegala) found that "The major part of the first hypothesis, that males would comprehend (immediate post-test) more information from an oral message than females. . . was not supported."⁹

In this study, 216 college and high school students listened to a tape-recorded speech on the subject of listening, and completed immediate and delayed retention tests containing 34 multiple choice and matching questions. The male and female subjects showed no significant difference in either immediate or delayed retention scores.

The sex of the auditors and the sex of the speaker were the independent variables in this study. There is no way of determining what, if any, effect the topic had on the results, for it is not included as a variable.

An experiment conducted by K. C. Beighley¹⁰, who arbitrarily chose foreign policy as the topic for the speech used in his study, obtained similar results. There was no significant difference between male and female retention scores. Any effort to determine what relationship exists between retention scores and the topic chosen in either of these experiments must remain speculative, though a connection between the two may be logically hypothesized.

It is evident from a review of these studies that more research needs to be done on the subject of male and female retention following an oral communication. Although each of these experimenters provides some insight into this area, well-controlled studies which utilize interest in the topic chosen as an independent variable are needed in order to ascertain the validity of the frequently-made conclusion that males retain more factual information from an oral communication than females.

FOOTNOTES

¹Thomas M. Scheidel, "Sex and Persuasibility," Speech Monographs, XXX (1963), p. 358.

²Scheidel, p. 358.

³William R. Carmack, Jr., and Gregg Phifer, "An Experiment Comparing Discussion with Debate," Southern Speech Journal, XXI (1956), p. 194.

⁴Ralph G. Nichols, "Factors in Listening Comprehension," Speech Monographs, XV (1948), p. 162.

⁵Nichols, p. 162.

⁶Stanley F. Paulson, "The Effects of the Prestige of the Speaker and Acknowledgment of Opposing Arguments on Audience Retention and Shift of Opinion," Speech Monographs, XXI (1954), pp. 267-271.

⁷Donald E. Sikkink, "An Experimental Study of the Effects on the Listener of Anticlimax Order and Authority in an Argumentative Speech," Southern Speech Journal, XXII (1956), pp. 73-78.

⁸James R. Brandon, "An Experimental Television Study: The Relative Effectiveness of Presenting Factual Information by the Lecture, Interview, and Discussion Methods," Speech Monographs, XXIII (1956), pp. 272-283.

⁹Robert J. Kibler, Larry L. Barker, and Donald J. Cezala, "Effect of Sex on Comprehension and Retention," Speech Monographs, LXXVII (1970), p. 291.

¹⁰K. C. Beighley, "An Experimental Study of the Effect of Four Speech Variables on Listener Comprehension," Speech Monographs, XIX (1952), pp. 249-258.

CHAPTER II
BACKGROUND AND RATIONALE
PREVIOUS RESEARCH IN ATTITUDE CHANGE

The majority of the available experimental literature dealing with male and female attitude change following an oral communication indicates that female subjects are more persuasible than males. Although two experimenters found no significant difference between the amount of attitude change of each of the sexes, there are no studies which indicate males are more persuasible than females.

Thomas Scheidel, who concluded that women retain significantly less of the content of a speech, also found that women are significantly more persuasible than men. He administered a 25-statement attitude scale before and after the subjects listened to the speech opposing federal power in health and education. "Women were found to be significantly more persuasible than men."¹

The validity of the results of the attitude test Scheidel used to measure persuasibility is questionable. He administered Form A (the pretest) and Form B (the post test) of a 25-statement attitude scale in one class period. He composed Form B by randomizing the 25 statements in Form A; thus, the subjects took two versions of one test in one class period. Although the estimate of reliability for the test, obtained from a control group, was .95, the procedure of administering two forms of the same test in one class period is disputable. Therefore,

his conclusion that the women subjects were more persuasible is ill-supported.

Stanley Paulson also administered the pretest and post test for attitude change in one class period. Woodward Shift-of-Opinion ballots were given to the subjects before the speech to determine if they were in favor of, undecided, or against lowering the voting age to eighteen. Following the speech, they indicated whether or not their attitude toward the topic had changed. "As far as shift of opinion in the total subject group is concerned, it was found that women shifted more (49.37%) than did the men (39.72%)."²

Both Scheidel and Paulson should have allowed a greater time interval between the administration of the pretest and the post test. It is possible that the female subjects were simply more willing than the males to admit that their attitudes had been changed by the speech.

Edgar Willis, who studied "The Relative Effectiveness of Three Forms of Radio Presentation in Influencing Attitudes", also found that "College women tended to shift attitude more readily than men."³ Willis performed three separate experiments in this study: subjects for the first two experiments were high school students, and subjects for the third experiment were college students. Since "The attitudes of high school boys and girls were shifted to approximately the same extent by the programs"⁴, only the third experiment will be discussed here.

Eighty-nine college students chosen as subjects for the study took a pretest composed of three Likert scales on three

different subjects: the German people, treatment of criminals, and freedom of speech and the press. Each class heard three recordings, one on each of the subjects, and then took a post test during the next class meeting. Two weeks later, a delayed post test was administered.

The college students selected for the experimental and control groups were students in beginning speech classes at the University of Wisconsin. Willis does not mention whether the speech classes are required, so once again we cannot be certain the sample was randomly selected. In addition, he provides no information as to the number of male subjects and the number of female subjects in this particular sample. Further, there are no statistics provided which support the conclusion that college women were more persuasible than men: no mean scores for males or females, no standard deviation, nor any results from statistical tests. He merely states that, for the three experiments combined, "Standard statistical methods were employed to analyze the data. A series of correlations was calculated to determine the relationship between attitude shift and age, sex, intelligence, year in school, and pre-score. The latter was the only factor related to any significant degree with the attitude shift."⁵ It is impossible to determine, from the information given, whether his "Minor Conclusion" that "College women tended to shift more readily than men" is supported by the study.

In "A Study of the Shifting Attitudes of High School Students When Subjected to Favorable and Unfavorable Propaganda", Richard Bateman and H. A. Remmers found that high school females shifted

their attitudes more than high school males.

Seventy pupils, 40 boys and 30 girls, were selected from senior social science classes in a high school in Peru, Indiana. A pretest to determine the students' attitudes toward labor unions was administered to each class. A paper filled with negative propaganda was read to the classes and Post Test I was administered. The next day a paper containing positive propaganda was read to the classes and Post Test II administered. Two months later the students completed Post Test III.

There is no way to determine from the discussion whether or not the 70 pupils were a random sample. In addition, there is no control group mentioned in the study to indicate whether any other factors intervened which may have affected the results on any or all of the post tests.

Bateman and Remmers conclude that "A more decided shift is shown for girls in their average attitude following the use of propaganda than is prevalent in the boys' average shift."⁶ The results do not seem to justify the experimenters' conclusion. The difference between the means on Pretest vs. Post Test I for males was 3.22, and the difference for females was 3.56, a difference between males and females of only .34. Pretest vs. Post Test II indicated a difference between means for males of .59 and a difference of 1.97 for females. The results for Pretest vs. Post Test III show a difference of 2.47 for males and 1.43 for females.

While the results of Post Test II indicate that the females' attitude shift was greater than that of the males, Post Test I showed only a slight difference between the sexes. Post Test III

indicates a greater attitude shift for the males than for the females. The females' attitude shift on the three post tests was not significantly greater than the males' attitude shift, and thus the experimenters' assertion that the girls showed a "more decided shift" is unsupported by the data.

Albert Furbay also found that female auditors were more persuasible than the males. He selected 409 students from the basic speech courses at Wayne State University to serve as subjects for the study. The subjects took an attitude pretest, listened to a recorded speech favoring the discontinuance of nuclear testing, and filled out a Woodward Shift-of-Opinion ballot designed to indicate attitude change. Furbay concluded that "women moved more often to an extent significant at the one percent level."⁷

Furbay does not mention whether his sample was randomly selected. Further, he, like Edgar Willis, fails to indicate the number of male and female subjects used in the study. It is impossible to determine whether the number in each was sufficiently balanced to enable the experimenter to make a reliable generalization about "women".

Franklyn Haiman, in "An Experimental Study of the Effects of Ethos in Public Speaking", also fails to mention the number of males and females in his sample. In three separate experiments, a total of 674 college students answered yes, no, or undecided on the subject of a national compulsory health insurance. They listened to a recorded speech favoring the insurance, and marked their post test opinions on a six-point scale.

Haiman "assumed at the outset of this study that the original,

pre-speech opinions of members of the audience on the controversial issue to be discussed might cause different kinds of reactions to the speaker."⁸ In the first experiment, as in the third, he found no significant disparities among the groups of subjects in the distribution of original opinion. However, in the second experiment (N = 363) the four groups differed slightly in both the distribution of sexes and initial opinions. He then "decided to make two statistical analyses of the Shift-of-Opinion ballots - one with the groups as they stood, and one with the groups perfectly matched on sex and original opinion. This second situation was obtained by randomly eliminating a great number of ballots. . . Since these two different methods produced almost identically the same results, only the findings of the latter will be presented here."⁹

Since the two analyses were not identical, and Haiman does not report the results obtained before he "randomly" eliminated a large number of the ballots, the validity of his conclusion that "a significantly higher proportion of females shifted their opinions"¹⁰ is logically questionable. We cannot be certain that results pertinent to male and female attitude change were not randomly eliminated from the original data.

Franklin Knower, in "Experimental Studies of Changes in Attitudes - I. A Study of the Effect of Oral Argument on Changes of Attitudes", also observed that females changed their attitudes more than males. College students enrolled in courses in public speaking at the University of Minnesota served as subjects for the experiment. The 303 men and 304 women completed an attitude pretest, listened to a speech on prohibition, and later completed

a post test indicating their attitude change.

Knower concludes that "Changes in attitude in women occurred to a greater extent and in greater numbers than occurred in the case of men subjects. About one-third of the women made a statistically significant change of attitude as compared with one-fifth of the men."¹¹ While he has conducted one of the best studies in the area of male and female attitude change, Knower overlooked one important variable: interest in the topic selected for the speech. He himself notes in a later experiment that interest in the topic may affect attitude change: "subjects who reported an interest in prohibition were more inclined to take an extreme position and less inclined to change than were subjects who reported indifference."¹²

Careful analysis of each one of the experiments dealing with male and female attitude change indicates that none of the experiments have utilized interest in the topic as an independent variable. It is possible that the results might have been altered significantly had the experimenters made some effort to determine the interest of each of the sexes in the topics selected for the speeches. It appears that each of the experimenters selected a topic or topics at random; the fact that none of them mentions how they selected the topics indicates that they attached very little, if any, importance to the topic chosen.

Although no studies have found males to be more persuasible than females, no significant difference between male and female attitude change was obtained in two experiments. Ben Cherrington and L. W. Miller found "no significant sex differences"¹³ in the attitude change of college students. Donald Siskink¹⁴, who

found that women had significantly lower immediate retention scores, obtained no significant difference between males and females in the results of either immediate or delayed attitude tests. Once again, neither Cherrington and Miller nor Sikkink considered that the topic chosen for their experiments might have affected their results.

The studies which deal with attitude change, like those which deal with retention, provide us with inconclusive results. While most indicate that females are more persuasible than males, none of them includes interest in the topic as an independent variable. Because of this fact, and because of other difficulties in the designs of nearly all the studies, more research is needed in order to provide insight into male and female attitude change following an oral communication.

FOOTNOTES

¹Scheidel, p. 355.

²Paulson, p. 269.

³Edgar E. Willis, "The Relative Effectiveness of Three Forms of Radio Presentation in Influencing Attitudes," Speech Monographs, VII (1940), p. 45.

⁴Willis, p. 45.

⁵Willis, p. 43.

⁶Richard M. Bateman and H. M. Remmers, "A Study of the Shifting Attitude of High School Students When Subjected to Favorable and Unfavorable Propaganda," Journal of Social Psychology, XIII (1941), p. 403.

⁷Albert L. Furbay, "The Influence of Scattered versus Compact Seating on Audience Response," Speech Monographs, XXII (1965), p. 147.

⁸Franklyn S. Haiman, "An Experimental Study of the Effects of Ethos in Public Speaking," Speech Monographs, XVI (1949), p. 191.

⁹Haiman, p. 195.

¹⁰Haiman, p. 195.

¹¹Franklin H. Kower, "Experimental Studies of Changes in Attitudes: I. A Study of the Effect of Oral Argument on Changes of Attitude," Journal of Social Psychology, VI (1935), p. 343.

¹²Franklin H. Kower, "Experimental Studies of Changes in Attitude: III. Some Incidence of Attitude Change," Journal of Applied Psychology, XX (1936), p. 127.

¹³Ben A. Cherrington and L. W. Miller, "Changes in Attitude as the Result of a Lecture and of Reading Similar Materials," Journal of Social Psychology, IV (1933), p. 484.

¹⁴Sinkink, p. 73-78.

CHAPTER III

PROCEDURE

An analysis of experimental studies in the areas of male and female retention and attitude change indicates a definite need for further research in this area. This study was designed, therefore, to test two hypotheses in the areas of retention and attitude change following an oral communication:

1) Female subjects will retain significantly more factual information from an oral communication than male subjects when the speech topic is oriented to expressed female interests; male subjects will retain significantly more information than the females when the speech topic is oriented to expressed male interests.

2) Female subjects will significantly change their attitudes toward the speech topic oriented to male interests, while male subjects will significantly change their attitudes toward the speech topic oriented to female interests.

In order to select two speech topics for the experiment, subjects in Oral Communications I and IA classes at Kansas State University rated several speech topics on a semantic differential type scale. The subjects were instructed to rate each of eight speech topics on four scales - three of these scales were used for blinding purposes; the fourth, interesting-uninteresting, was the only scale used for experimental purposes.

The interesting-uninteresting scale for "The Advantages of Breast Feeding a New-Born Baby" indicated that the females'

interest in the topic was significantly greater than that of the males. The mean for the 23 female subjects was 5.26, and the mean for the 16 male subjects was 4.06. The results of the t-test were significant at the .05 level of probability.

Conversely, the interesting-uninteresting scale for the topic, "The Advantages of the Rotary Engine" indicated the male subjects' expressed interest in the topic was significantly greater than that of the females. The mean for the 16 male subjects was 5.75, and the mean for the 22 females was 4.09. In this case, the results of the t-test were significant at the .001 level of probability. The results of the t-tests for the other six topics were not significant.

A 637-word persuasive speech on the subject of breast feeding¹, and a 642-word persuasive speech on the subject of the rotary engine² were composed. In addition, a test designed to measure retention of the content of each speech was constructed. Both of these ten-question retention tests were then administered to a group of 12 females and 19 males, who had not heard either of the speeches, to determine the validity of the test questions. If more than 11 subjects answered a question correctly, the question was either changed or thrown out entirely.

The revised version of each retention test was then administered to a group of 26 males and 22 females, who also had not been exposed to the speeches. If more than 12 subjects responded correctly to a particular question, it was considered invalid and omitted from the retention test to be used in the study. The number 12 for this revision, and the number 11 for the first revision were arbitrary cut-off points for acceptance

or rejection of a question. It was fairly obvious from looking at the total number of correct and incorrect responses to each question which questions would not provide an accurate measurement of retention.

The six remaining questions on each topic, to which there are a total of eight correct responses for each test, were considered valid instruments for measuring male and female retention.³

A semantic differential was chosen to measure male and female attitude change. The scales for each of the topics were selected from a list of possible scales provided by Osgood, Suci, and Tannenbaum.⁴ Since each scale would be considered individually, and a factor analysis was not to be used in the data, it was possible to include on the attitude test only those scales considered applicable.

The speeches on the rotary engine and breast feeding were then recorded by both a male and a female speaker. The male speaker was a graduate student in Speech at Kansas State and the female speaker was an instructor in the Speech Department at Kansas State.

One hundred fourteen students, 49 males and 65 females, in the required Oral Communications I and IA classes at Kansas State University served as subjects for the study. They first completed two attitude scales, one on the subject of breast feeding⁵ and one on the rotary engine⁶. The written instructions attached to the scales⁷ did not divulge the nature of the experiment; rather, the subjects were told they were rating topics which might be used for speeches in Oral Communications courses.

Two weeks later the subjects listened to one of the recorded speeches. Fifty-four subjects listened to the speech on breast feeding; 28 of these heard the female speaker deliver the speech, and 26 listened to the male speaker. Sixty subjects listened to the speech on the rotary engine; 32 of these heard the female speaker, and 28 heard the male speaker.

Immediately following the speech, each subject indicated his attitude toward the speech topic, completed the retention test over the speech content, and rated the speaker's ethos. The order in which the subjects completed each of these measurement scales was varied randomly to control for order effect.

A semantic differential was selected to measure the ethos of the speaker⁸. The scales utilized were previously selected by Berlo, Lemert, and Mertz⁹ as reliable measurements of a speaker's ethos.

Twenty-six subjects were also selected from the Oral Communications I and IA courses to serve as a control group. These subjects completed the attitude tests for both topics at approximately the same time the experimental group completed them. Two weeks later, they once again indicated their attitudes toward both topics, and completed both retention tests without having heard either of the speeches. In this way, intervening factors which might influence the results obtained from the experimental groups could be detected in the test results of the control group.

FOOTNOTES

¹See Appendix A.

²See Appendix B.

³See Appendices D and E.

⁴Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum, The Measurement of Meaning (Urbana: University of Illinois Press, 1965), pp. 53-55.

⁵See Appendix F.

⁶See Appendix G.

⁷See Appendix C.

⁸See Appendix H.

⁹D. K. Berlo, J. B. Lemert, and R. J. Mertz, "Dimensions for Evaluating the Acceptability of Message Sources," Public Opinion Quarterly, XXXIII (1956), p. 575.

CHAPTER IV

RESULTS

Retention scores revealed an interaction significant at the .05 level between the topic of the speech and the sex of the auditor. Males retained more on the male-oriented topic than on the female-oriented topic. Females retained more on the female-oriented topic than the male-oriented topic.

The mean score of the males was significantly higher than the mean score of the females on the rotary engine retention test. The females' mean score was slightly, though not significantly, higher than that of the males on the breast feeding retention test. (See Table I)

Male subjects scored significantly higher on their total retention scores than female subjects. The particular topics chosen for the experiment may have contributed to the higher retention scores of the males. The interesting...uninteresting scale, which provided the basis for selection of the speech topics, indicated female interest in the topic of breast feeding was significantly greater than male interest at the .05 level. The same scale for the rotary engine indicated male interest was greater than female interest, significant at the .001 level. The rotary engine seems to be more oriented to male interest than breast feeding is oriented to female interest. Perhaps if the males had found the subject of breast feeding as uninteresting as the females found the subject of the rotary engine, the males' retention scores would not have been higher than the females'

scores.

The mean retention score of the control group on the topic of breast feeding was 1.88, and on the topic of the rotary engine, the mean was 2.44. The difference between the mean scores of the experimental and control groups for both the rotary engine ($T = 7.33$) and breast feeding ($T = 7.43$) are significant well beyond the .005 level. Thus, the tests are valid instruments for measuring retention of the material in the two speeches.

The female speaker produced significantly more retention than the male speaker for both male and female auditors. The analysis of the results of the ethos scale indicated no significant difference between the ethos of the male and female speakers. There is no explanation, then, to account for the fact that the female speaker produced more retention than the male speaker.

In addition to the significant topic-auditor interaction observed in the retention results, three of the five scales utilized to measure attitude change (good...bad, useful...useless, foolish...wise) also indicated a topic-auditor interaction significant at the .05 level. (See Tables II-V) Female subjects changed their attitudes more toward the male-oriented topic than toward the female-oriented topic. Male subjects changed their attitudes more toward the female-oriented topic than toward the male-oriented topic.

A one-tailed T -test was applied to the male and female scores for each topic on each of these three scales. Five out of six of these T -tests indicated a significant difference.

(See Tables VI - VIII) Female subjects changed their attitudes significantly more than male subjects on the male-oriented topic. In addition, contrary to the results of previous research, male subjects changed their attitudes significantly more than females on two of the scales. The third scale (good...bad) indicates greater, though not significantly greater, attitude change for male subjects than for female subjects on the female-oriented topic.

On two of the five scales (important...unimportant, meaningful...meaningless) there were no significant differences observed between male and female attitude change.

The results of the control group indicated no significant changes in attitude by either sex on any of the five attitude scales. The attitude change of each experimental group was clearly the result of the intervening persuasive speech.

TABLE I

		<u>RETENTION</u>	
		AUDIENCE	
		males	females
TOPIC	female	$\bar{x} = 4.47$	$\bar{x} = 4.50$
	male	$\bar{x} = 5.10$	$\bar{x} = 3.73$

TABLE II

ANALYSIS OF VARIANCE
RETENTION

SOURCE	D.F.	MEAN SQUARES	F-RATIO
Speaker	1	12.06192493	4.800*
Topic	1	0.12708861	0.051
Subject	1	12.25454617	4.876*
Subject * Topic	1	2.62241459	1.044
Speaker * Subject	1	7.64508533	3.042
Topic * Subject	1	13.30310249	5.294*
Speaker * Topic * Subject	1	0.26139253	0.104
Residual	106	2.51304531	
Total	113		

*Significant at the .05 level

TABLE III

ANALYSIS OF VARIANCE
WISE...FOOLISH ATTITUDE SCALE

SOURCE	D.F.	MEAN SQUARES	F-RATIO
Speaker	1	7.27161217	3.404
Topic	1	4.31181526	2.019
Subject	1	0.14016789	0.066
Speaker * Topic	1	1.26112270	0.590
Speaker * Subject	1	3.76097393	1.761
Topic * Subject	1	10.58134460	4.954*
Speaker * Topic * Subject	1	0.58644885	0.275
Residual	106	2.13592529	
Total	113		

*Significant at the .05 level

TABLE IV

ANALYSIS OF VARIANCE
GOOD...BAD ATTITUDE SCALE

SOURCE	D.F.	MEAN SQUARES	F-RATIO
Speaker	1	3.92838383	1.599
Topic	1	2.91944599	1.188
Subject	1	3.31617451	1.350
Speaker * Topic	1	1.23616505	0.503
Speaker * Subject	1	1.96270561	0.799
Topic * Subject	1	15.42983246	6.281*
Speaker * Topic * Subject	1	0.50058675	0.204
Residual	106	2.45673847	
Total	113		

*Significant at the .05 level

TABLE V

ANALYSIS OF VARIANCE
USEFUL...USELESS ATTITUDE SCALE

SOURCE	D.F.	MEAN SQUARES	F-RATIO
Speaker	1	2.93657875	1.182
Topic	1	0.03404214	0.014
Subject	1	0.61013407	0.246
Speaker * Topic	1	0.14442611	0.058
Speaker * Subject	1	0.82006431	0.330
Topic * Subject	1	21.98152161	8.851*
Speaker * Topic * Subject	1	1.46965981	0.592
Residual	106	2.48357296	
Total	113		

*Significant at the .05 level

ATTITUDE CHANGE

TABLE VI (Wise...Foolish)

T-Test Results

		AUDIENCE		
		males	females	
TOPIC	female	$\bar{x} = 7.20$	$\bar{x} = 6.50$	$T = 1.69^*$
	male	$\bar{x} = 6.17$	$\bar{x} = 6.73$	$T = 1.34^*$

TABLE VII (Good...Bad)

		AUDIENCE		
		males	females	
TOPIC	female	$\bar{x} = 7.10$	$\bar{x} = 6.69$	$T = .916$
	male	$\bar{x} = 6.01$	$\bar{x} = 7.12$	$T = 2.50^*$

TABLE VIII (Useful...Useless)

		AUDIENCE		
		males	females	
TOPIC	female	$\bar{x} = 6.91$	$\bar{x} = 6.15$	$T = 1.68^*$
	male	$\bar{x} = 5.97$	$\bar{x} = 7.02$	$T = 2.36^*$

*Significant at the .05 level

CHAPTER V

CONCLUSIONS

The results of this study indicate that the content of a speech, whether oriented to male or female interests, affects the amount of male and female retention and attitude change.

A significant interaction between the topic of the speech and the sex of the auditor occurred for both retention and attitude change. Males retained more information and were persuaded less following the persuasive speech oriented to male interests than following the speech oriented to female interests. Similarly, the females retained more and were persuaded less following the speech oriented to female interests than following the speech oriented to male interests.

As hypothesized, male auditors retained significantly more information than the female auditors from the male-oriented speech. Females retained slightly more information than the males from the female-oriented speech.

In addition, on three of the five attitude scales, females changed their attitudes significantly more than the males on the male-oriented topic. Males changed their attitudes more than the females on the three scales; the results of two of these scales reached the .05 level of significance.

The majority of the experiments in the areas of male and female retention and attitude change conducted prior to this study failed to determine the interest each of the sexes had in the speech topic. The frequently-made conclusions that

females change their attitudes more and retain less information than males following an oral communication are not supported by the results of this study. Females seem to be more persuasible and retain less information when the topic is male-oriented, but not when it is female-oriented. This study, in fact, is one of the first to show a significantly greater degree of male attitude change, and slightly lower retention scores than females when the topic is female-oriented. This is consistent with the original hypotheses.

The implication for future research is obvious. In order to construct a valid experimental design to measure male and female retention, attitude change, or both, one must take into account the interest of each of the sexes in the topic or topics selected for use in the study.

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APPENDICES

APPENDIX A

TEXT OF THE BREAST FEEDING SPEECH

Most of us have at one time looked forward to marrying and starting a family of our own. We anticipate such decisions as how many children we would like to have, or approximately how far apart in age we think they should be. However, there is another important decision which you will have to make, and one which you should consider carefully: the decision to bottle feed or breast feed your baby. To ensure good health and well-being for both the baby and its mother, breast feeding is by far the wisest choice to make.

Breast feeding is a natural culmination to the cycle of pregnancy and birth. The newborn suckles at its mother's breast, causing the release of the hormone oxytocin into the blood. This, in turn, causes the milk sacs in the breast to contract and release milk. The more the infant sucks, the more milk is produced.

There are several reasons to choose breast feeding over bottle feeding. Many new mothers feel the best reason to nurse a child is a personal one - a desire on the part of the mother to nourish the infant from her own body. Evelyn Kanter, in an article written for Parent's Magazine, describes her personal experience with breast feeding her child. She found nursing a very rewarding experience emotionally. The fulfillment of sharing her body with her baby was to her, as to many mothers, the best reason to choose to breast feed.

The mother's personal fulfillment is only one of the

**THIS BOOK
CONTAINS
NUMEROUS PAGES
WITH MULTIPLE
PENCIL AND/OR
PEN MARKS
THROUGHOUT THE
TEXT.**

**THIS IS THE BEST
IMAGE AVAILABLE.**

benefits of breast feeding, however. Studies indicate that there is also an improvement in the mother's physiological well-being. Women who nurse are less likely to develop breast cancer later in life. Further, suckling causes the uterus to contract, hastening its return to pre-pregnant size, and lessening the chances of uterine hemorrhaging. The mother, then, benefits both psychologically and physiologically in choosing to breast feed her child.

The newborn also benefits. According to "Facts About Breast Feeding", a pamphlet published by Mead Johnson and Company which is distributed to new or prospective parents by pediatricians across the country, breast feeding assures the baby excellent nutrition. Nature prepares her formula to fit the child's needs. Cow's milk, in comparison, has smaller amounts of the essential vitamins A, C, and E than breast milk. An infant who is not breast fed will require vitamin supplements very soon after birth to ensure adequate nutrition.

As the infant grows, the supply of milk produced by its mother increases and adjusts to his demands. Breast milk, unlike cow's milk, is naturally at the proper temperature, and almost no preparation error or contamination is possible.

Not only does breast feeding ensure a nutritional diet which is well-prepared, but breast-fed infants are also less likely to develop such digestive upsets as diarrhea, colic, and constipation. Babies digest mother's milk much more easily than they digest cow's milk. Cow's milk, which is dense and hard to digest, is one of the principal causes of digestive upsets in the very young. Human milk has special physical

properties which allow it to form a soft and easily-digestible curd in the infant's alimentary tract. In addition, breast milk contains antibodies to help the newborn resist allergies, infections, and viruses that cause colds and measles.

The milk produced in its mother's breast is the best nourishment a baby can receive. Not only is it more nutritional than cow's milk, it prevents many digestive upsets and minor illnesses common to newborns. The mother benefits both emotionally and physiologically, and both mother and father are assured that their child is receiving milk which is well-prepared and free from contamination.

When you as future parents begin your families, you must choose to breast feed or bottle feed your children. For happier, healthier, child and mother, choose breast feeding. You'll never regret your decision.

APPENDIX B

TEXT OF THE ROTARY ENGINE SPEECH

The years remaining in this decade may be the most remarkable in the history of the automobile. Changes in emission and safety standards will make future vehicles very different from the cars we are now driving. The rotary engine, with its smoothness and high-speed acceleration, is the engine you should demand in your next car.

The rotary engine was first proposed by James Watt in the 1750's, and since that time several prototypes have been designed and built. Felix Wankel, a self-taught engineer, assembled these ideas, combined them with his own, and developed in 1958 what we now know as the rotary engine. Others became interested in his work until now, virtually every car builder in the world has a license to build rotary engines, or is negotiating one. Mazda currently is the only car in the United States which uses a rotary engine. General Motors is presently working on a rotary-powered Vega, which they hope to present to the public next year. Other American car manufacturers will undoubtedly follow suit in a very short time.

To understand the advantages of the rotary engine over the conventional engine, you must first understand the basic structure of the rotary engine. The heart of the engine is an enclosed chamber containing a triangular rotor whose sides allow three phases of the combustion process to occur simultaneously. On one side the fuel-air mixture is drawn into the engine and compressed. On the second side, ignition and gas expansion

takes place, and on the third burned gasses are exhausted.

In the rotary engine, then, the rotor replaces the piston. It spins in one direction and useful power is generated directly. What advantages are offered by the rotary engine, or Wankel engine, as it is often called?

First, the engine is small in size. It can be as much as one-half the size of the conventional engine. This reduction in mass means room for safety systems, less weight, and an opportunity for production of substantially smaller automobiles, which would still provide comfort and ample leg room.

In addition to its small size, it is economical. There are fewer pieces to the rotary engine, 600 as compared to over 1,000 in a V-8, and there are only two moving parts. A simpler engine, containing fewer moving parts, will obviously require less money spent on repairs.

The rotor seal, the part most likely to wear, is now rated for 6,000 miles of use. Road Test Magazine took a Mazda rotary engine apart after 50,000 miles and reported the seal wear was so low it projected 150,000 miles of use. When the seals need to be replaced, it only costs about \$200 to \$350, the cost of a valve job on a V-8 engine.

The engine also cuts down on pollution. Mazda successfully demonstrated its ability to meet E.P.A.'s rigorous emissions standards for 1975. After 50,000 miles the Mazda was putting out only one-half the maximum level of hydrocarbons and only one-third the maximum amount of oxides of nitrogen. Mazda's rotary engine has twin spark plugs for better combustion, resulting in fewer unburned hydrocarbons which are major con-

tributors to our air pollution problem.

The rotary engine is small, economical to use, and cuts down on pollution. In addition, it produces as much or more power than the conventional engine, and is smooth-running. Mazda RX2 and Mazda RX3, which account for most of Mazda sales in the United States, can accelerate from 0 to 7,000 rpm without a hint of effort or stress. You needn't sacrifice comfort and power for a more compact, economical engine.

On the road the rotary engine means less fuel consumption, less congestion, less smog, and easier parking. The American car manufacturers will very soon be offering you a choice between the rotary engine and the reciprocating engine. Save money and the environment - choose a rotary engine.

APPENDIX C
INSTRUCTION SHEET

Name _____

INSTRUCTIONS

The purpose of this questionnaire is to evaluate possible speech topics for use in Oral Communications courses. On the following pages you will find topics to be rated, and beneath each a set of scales. Use the various spaces on the scale as follows: An (x) at one end of the scale means "extremely". For example, if you believe that the thing being rated is extremely large, mark the scale in this manner:

large: X : _____ : _____ : _____ : _____ : _____ : _____ : small

An (x) in the second position from the end means "quite". An (x) in the third position from either end means "slightly". An (x) in the middle position means "undecided", "neutral", or that the scale does not apply to the thing being rated.

Please place all (x)'s in the middle of the spaces, not on the dividers. Only one (x) should be marked for each scale. Please answer every scale.

Thank you for your help.

APPENDIX D

RETENTION TEST - BREAST FEEDING

Name _____

Instructions: Circle the correct answer or answers for each of the following questions. There may be more than one correct answer for each question. Be sure to circle all correct answers, omitting any that are incorrect. Points will be subtracted for each incorrect answer circled.

1. Breast-fed infants, in comparison to bottle-fed infants, are less likely to develop: (a) allergies, (b) measles, (c) diarrhea.
2. When a newborn suckles at its mother's breast, the hormone released into the bloodstream is: (a) estrogen, (b) progesterone, (c) oxytocin.
3. Ms. Evelyn Kanter: (a) wrote an article for Parents Magazine, (b) wrote a pamphlet entitled "Facts About Breast Feeding", (c) describes the negative aspects of bottle feeding.
4. Uterine hemorrhaging: (a) is increased by the suckling of an infant, (b) is decreased by the suckling of an infant, (c) is unaffected by the suckling of an infant.
5. The pamphlet entitled "Facts About Breast Feeding" asserts that: (a) breast feeding assures the infant adequate nutrition, (b) breast feeding benefits the mother emotionally, (c) bottle feeding is always inferior to breast feeding.
6. The release of hormones into the blood causes: (a) relaxation of the milk sacs, (b) contraction of the milk sacs, (c) no particular effect on the milk sacs.

Answers:

1. A,B,C 2. C 3. A 4. B 5. A 6. B

APPENDIX E

RETENTION TEST - ROTARY ENGINE

Name _____

Instructions: Circle the correct answer or answers for each of the following questions. There may be more than one correct answer for each question. Be sure to circle all correct answers, omitting any that are incorrect. Points will be subtracted for each incorrect answer circled.

1. The rotary engine was first proposed by: (a) Felix Wankel, (b) James Watt, (c) General Motors.
2. The rotary engine, as compared to the conventional engine, can be as much as: (a) 1/4 its size, (b) 1/3 its size, (c) 1/2 its size.
3. The rotary engine has: (a) 2 moving parts, (b) 3 moving parts, (c) 4 moving parts.
4. The rotary engine provides better combustion than the conventional engine, resulting in: (a) fewer oxides of nitrogen, (b) fewer unburned hydrocarbons, (c) fewer burned hydrocarbons.
5. There are 1,000 pieces in a conventional engine, while a rotary engine has only: (a) 400, (b) 500, (c) 600.
6. Which of the following automobiles contains a rotary engine? (a) Mazda RX3, (b) Mazda RX6, (c) Mazda RX2.

Answers:

1. B 2. C 3. A 4. A,B 5. C 6. A,C

APPENDIX F

ATTITUDE TEST - BREAST FEEDING

Instructions: Please rate the following speech topic on the basis of the attitude you hold toward it.

BREAST FEEDING

good: _____: _____: _____: _____: _____: _____: _____: bad

useful: _____: _____: _____: _____: _____: _____: _____: useless

meaningless: _____: _____: _____: _____: _____: _____: _____: meaningful

foolish: _____: _____: _____: _____: _____: _____: _____: wise

important: _____: _____: _____: _____: _____: _____: _____: unimportant

APPENDIX G

ATTITUDE TEST - ROTARY ENGINE

Instructions: Please rate the following speech topic on the basis of the attitude you hold toward it.

THE ROTARY ENGINE

good: _____: _____: _____: _____: _____: _____: _____: bad

useful: _____: _____: _____: _____: _____: _____: _____: useless

meaningless: _____: _____: _____: _____: _____: _____: _____: meaningful

foolish: _____: _____: _____: _____: _____: _____: _____: wise

important: _____: _____: _____: _____: _____: _____: _____: unimportant

APPENDIX H

ETHOS SCALE

Instructions: Please rate the speaker to whom you have just listened on each of the characteristics listed below:

safe: _____:_____:_____:_____:_____:_____:_____:unsafe

just: _____:_____:_____:_____:_____:_____:_____:unjust

kind: _____:_____:_____:_____:_____:_____:_____:unkind

friendly: _____:_____:_____:_____:_____:_____:_____:unfriendly

honest: _____:_____:_____:_____:_____:_____:_____:dishonest

trained: _____:_____:_____:_____:_____:_____:_____:untrained

experienced: _____:_____:_____:_____:_____:_____:_____:inexperienced

skilled: _____:_____:_____:_____:_____:_____:_____:unskilled

qualified: _____:_____:_____:_____:_____:_____:_____:unqualified

informed: _____:_____:_____:_____:_____:_____:_____:uninformed

aggressive: _____:_____:_____:_____:_____:_____:_____:meek

empathic: _____:_____:_____:_____:_____:_____:_____:hesitant

bold: _____:_____:_____:_____:_____:_____:_____:timid

active: _____:_____:_____:_____:_____:_____:_____:passive

energetic: _____:_____:_____:_____:_____:_____:_____:tired

AN EXPERIMENTAL STUDY OF THE EFFECT OF INTEREST IN THE
SPEECH TOPIC ON MALE AND FEMALE
RETENTION AND ATTITUDE CHANGE

by

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B.A., Kansas State University, 1973

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Previous research in the areas of male and female retention and attitude change following an oral communication indicates that female subjects retain significantly less of the content of a speech, yet change their attitudes more than the male subjects. An examination of these studies reveals that interest in the speech topic selected has not been included as an independent variable.

It was hypothesized, therefore, that the interest of each of the sexes in the speech topic would influence the amount of retention and attitude change produced. Female subjects would retain more material and change their attitudes less than males on a topic oriented to female interests, and male subjects would retain more material and change their attitudes less than females on a male-oriented topic.

Two speech topics were selected for use in the experiment: one oriented to expressed male interests, and one to expressed female interests. Both a male and a female speaker recorded each of the two speeches. Students in the Oral Communications courses at Kansas State University served as subjects for the study. They indicated their attitudes toward each of the topics, and, two weeks later, completed an attitude scale and a retention test immediately after listening to one of the recorded speeches.

The results of the experiment confirm the original hypotheses. An interaction significant at the .05 level of probability was observed between the topic of the speech and the sex of the auditor for both retention and attitude change.