
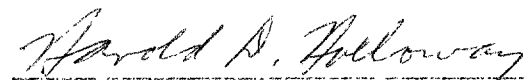


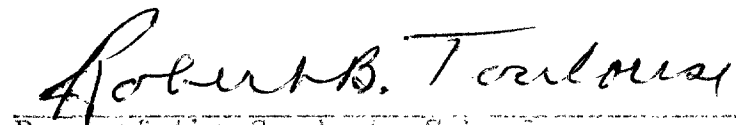
THE SEMANTIC DIFFERENTIAL AS A MEASURE
OF SEXUAL DIFFERENCES

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The purpose of the research study was to determine whether the semantic differential could measure in the college population the variation in meaning of selected masculine and feminine concepts as a function of sex difference. The following two propositions were hypothesized: (1) the semantic differential would show differences in the meanings of various concepts among members of the same sex group and (2) the semantic differential would indicate a difference between sex groups for the same concept.

The subjects were twenty-five male and twenty-five female college students from North Texas State University. The subjects were obtained from freshman and sophomore English classes.

A semantic differential was developed for the concepts "love," "sex," "man," "woman," "ideal male body," "ideal female body," and "my body." For each concept at least three adjective scales represented each of the following factors: evaluation, potency, and activity.

The first design involved a within group comparison which meant comparing the factor differences between concepts for a given group. The factor differences were matched and ranked, and then a test for matched samples (Wilcoxon signed-ranks

test) was used to determine if the differences between concepts were due to chance.

The second design employed a between group comparison which meant comparing the difference between male and female groups over a given concept. The frequency distributions of the factor scores for the two groups were compared over the various concepts. The median test was used to determine whether there was a significant difference in central tendency for the two samples. The chi square test was used as a test of the independence of the male and female frequency distributions.

In relation to the first hypothesis the investigation did find differences between concepts for the same sex group. In the "sex" and "love" comparison the male sample significantly varied its response on the evaluation and potency dimensions; therefore, it was inferred that in the college male population "sex" had a connotative meaning which was more favorable and stronger than "love." Both the male and female groups discriminated significantly between the concepts "male" and "female" on the potency dimension, but only the male group gave a significantly more favorable evaluation to the concept "woman." In the "ideal male body" and "ideal female body" comparison, both groups evaluated the "ideal female body" as more favorable and felt the "ideal male body" to be stronger. The female group discriminated between the concepts "my body" and "ideal female body" on two factors: evaluation and potency.

The sample viewed the "ideal male body" as more favorable than "my body," while they also felt the concept "my body" to be stronger than the concept "ideal female body." Only on the activity dimension did the male sample make a distinction between "ideal male body" and "my body."

The investigation found limited support for the second hypothesis, which involved a between group comparison. A functional relationship was found between sex group and interval distribution on the evaluation dimension of the concepts "love" and "ideal male body" and on the potency dimension of the concepts "man" and "my body." Only on the evaluation factor of the concept "ideal male body" and the potency factor of the concept "my body" was there found to be a significant difference in central tendency. The results indicated that only to a limited degree was the connotative meaning of the concepts a function of difference in sex.

THE SEMANTIC DIFFERENTIAL AS A MEASURE
OF SEXUAL DIFFERENCES

THESIS

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Since the development of the semantic differential (Osgood, 1952, 1962; Osgood and Suci, 1952, 1955; Osgood, Suci, and Tannenbaum, 1957; Osgood, Ware, and Morris, 1961), a number of experimenters have used the semantic differential to investigate the variation in connotative meaning of various terms or concepts as a function of difference in sex. In 1959 Small investigated the age and sex similarities and differences in the semantic structure of children. He employed the semantic differential to find the degree to which the same dimensions underlie children's semantic judgments. Fitzgerald (1966) used the semantic differential to investigate sex differences in developmental patterns of identification. The data supported his hypothesis that girls in grade school identify more with the mother figure than with the stereotype of femininity. The boys in the study followed the trend of identifying more with the father figure than with the stereotype of masculinity, but their response difference did not reach the required level for significance. A somewhat similar study by Schludermann and Schludermann (1969) investigated sex difference in the development of role patterns. It was found that concepts embracing social and occupational roles had significant differences in semantic meaning between males and females.

The investigation by Jorgensen and Howell (1963) found significant differences in "self" and "ideal self" congruence between males and females from the ages of eight to twelve.

It was also found that the "self" and "ideal self" congruence stabilized during the ages thirteen through eighteen for both males and females. In another research study (Mouren, 1967) using the semantic differential, it was revealed that the females had a more favorable attitude toward the concept "infant" and a more unfavorable attitude toward the concept "illness" and "death."

A research study by Kalenius (1966) was conducted with high school students separated into groups according to intelligence, sex, and class placement. The purpose of the study was to use the semantic differential to determine the direction and intensity of feelings expressed by students about twenty concepts. Ten of the concepts involved self-concept; four of the twenty concepts included authority figures such as "father" and "teacher"; and four were concerned with the roles that would be assumed by the students in future years. The data revealed that connotative meaning was the function of intelligence, sex, and class placement in many of the concepts. With regard to the sex factor, the boys rated the concepts as being more potent than did the girls.

The purpose of the present research study was to use the semantic differential to discern whether the connotative meaning of selected masculine and feminine concepts varied as a function of difference in sex. The following two propositions were hypothesized: (1) the semantic differential would show differences in the meanings of various concepts among members

of the same sex group and (2) the semantic differential would indicate a difference between sex groups for the same concept. In the two hypotheses the term sex group referred to the categorization of the subjects as either male or female. The subjects made their responses according to the following concepts: "love," "sex," "man," "woman," "ideal male body" (IMB), "ideal female body" (IFE), and "my body" (MB).

Method

Subjects.--The subjects were twenty-five males and twenty-five female college students from freshman and sophomore English classes at North Texas State University. The age distribution for the subjects is given in Table I.

TABLE I
MALE AND FEMALE AGE DISTRIBUTION OF SUBJECTS

Sex Group	Ages					Total
	18	19	20	21	22	
Female	11	8	5	1	0	25
Male	6	7	5	4	3	25
Total	17	15	10	5	3	50
Per Cent	34%	30%	20%	10%	6%	100%

The distribution followed the trend that as the student age

increased from eighteen, the percentage of students decreased. The subjects were taken from intact groups (English classes), and as such they were not a random sample from the total student body of the university; nevertheless, it was felt that, because of the heterogeneity of freshman and sophomore English classes, the subjects selected were a representative sample of the college population.

Instrument.--A semantic differential was developed for the concepts "love," "sex," "man," "woman," "ideal male body," "ideal female body," and "my body." For each concept at least three adjective scales represented each of the following three factors: evaluation, potency, and activity. The order of the scales for each concept was determined by random selection. The adjective position (right or left) was also determined by random selection. The factor loadings for the adjective scales ranged according to the data in Tables XI, XII, and XIII. (See the Appendix.) The direction sheet for the research followed closely Osgood's recommendations (Osgood et al., 1957, pp. 82-85). The major deviation from Osgood's presentation was the substitution of the numbers 1, 2, 3, 4, 5, 6, and 7 for his blank spaces between the adjectives.

Results

The adjective scales were averaged to obtain factor scores. This procedure produced a 3 (factors) x 7 (concepts) x 50 (subjects) factor score matrix.

The first design involved a within group comparison which meant comparing the factor differences between concepts for a given group. Table II shows the pattern established in the concept to concept comparison. M and F represent the male and female sex groups respectively.

TABLE II
CONCEPT TO CONCEPT COMPARISON IN
REFERENCE TO SEX GROUP

Concept To Be Compared	Concept To Be Compared						
	Love	Sex	Man	Woman	IMB	IFB	MB
Love		MF					
Sex	MF						
Man				MF			
Woman			MF				
IMB						MF	M
IFB					MF		F
MB					M	F	

The within group comparison involved matching each individual's response to concept A with his response to concept B in a given group N. The factor differences were then ranked, and a test for matched samples (Wilcoxon signed-ranks test)

was used to determine the probability of occurrence by chance.

The "love" and "sex" comparison of the female sample distribution revealed that the females had very similar placement of both concepts along all three factors. Table III presents the necessary data for the comparison.

TABLE III
FEMALE SAMPLE'S COMPARISON OF
CONCEPTS "LOVE" AND "SEX"
FOR FACTORS E, P, AND A

Factor	"Love" Median	"Sex" Median	N s-r	T
E	1.33	1.28	11	30.0
P	3.06	3.05	12	33.5
A	2.92	2.69	14	36.0

Both concepts had the same rank order for the three factors with evaluation ranked highest (more toward the first interval) and activity and potency ranked second and third respectively. There was a .05 median difference for the evaluation factor, a .01 median difference for the potency factor, and a .23 median difference for the activity factor.

On the evaluation factor 14 of the 25 females had the same averaged interval for both concepts, while for the difference (D) value of the Wilcoxon signed-ranks test there were

5 positive and 6 negative values. This data indicated that there was no significant difference in the female sample's evaluation of the concepts "love" and "sex."

In reference to the potency factor 13 of the 25 females had the same averaged interval for both concepts. The Wilcoxon D had 7 positive and 5 negative values. The female sample did not have a significantly different placement of the concepts "love" and "sex" along the potency dimension.

The female sample had the same averaged interval for 11 out of 25 of their matched responses. The Wilcoxon signed-ranks test had a D with 10 positive and 4 negative values. There was found no significant difference between both concepts on the activity dimension.

In the female sample for all three factors, there was found no significant difference between the interval values for the concepts "love" and "sex." Therefore, it was inferred that the college female population did not connotatively differentiate between the concepts "love" and "sex."

In reference to the comparison of the concepts "man" and "woman," the data in Table IV indicate that the female group considered the major difference between the concepts to be expressed in the potency factor. The median differences for the evaluation and the activity factors were .29 and .62 of an interval unit respectively, while the median difference for the potency factor was 2.19 interval units.

TABLE IV
 FEMALE SAMPLE'S COMPARISON OF
 CONCEPTS "MAN" AND "WOMAN"
 FOR FACTORS E, P, AND A

Factor	"Man" Median	"Woman" Median	N _{s-r}	T
E	1.86	1.57	12	27.5
P	2.63	4.82	24	0.0*
A	2.44	3.06	19	84.0

*p < .01

On the evaluation factor 13 of the 25 females had the same averaged interval for both concepts, and the difference (D) values for the Wilcoxon signed-ranks test were 5 positive and 7 negative values. In the activity distribution 6 of the 25 females had the same averaged interval for both concepts, and the D consisted of 9 positive and 10 negative values. On the other hand, on the potency dimension only 1 of the 25 females had the same interval for both concepts. The D for the potency consisted of 24 negative values. The female sample gave the concept "man" a significantly higher degree of potency or strength than the concept "woman." Accordingly, in the sample of female college students, only for the potency factor was there found to be a significant difference ($p < .01$) between the interval values for the concepts "man" and "woman." Consequently, it was concluded that there was

a difference in the connotative meaning of the concepts "man" and "woman" for the population of college females.

In the "ideal male body" and "ideal female body" comparison two factors, evaluation and potency, were significantly different for the female sample. The data for the comparison are presented in Table V.

TABLE V
FEMALE SAMPLE'S COMPARISON OF CONCEPTS
"IDEAL MALE BODY" AND "IDEAL FEMALE BODY"
FOR FACTORS E, P, AND A

Factors	IMB Median	IFB Median	N _{S-P}	T
E	2.11	1.39	17	13*
P	2.44	4.92	21	00*
A	2.18	3.00	16	32.5

*p < .01

The evaluation factor had a .72 median difference with the "ideal female body" tending toward the first interval (more positive evaluation). On the evaluation factor 8 of the 25 females had the same averaged interval for the two concepts, while 15 had positive difference values and 2 had negative difference values. The sample difference between concepts on the evaluation factor was significant at the .01 level, indicating that the female population had a higher evaluation of the concept "ideal female body" than the concept "ideal male body."

The potency factor for both concepts had a median difference of 2.48 interval units with the concept "ideal male body" tending more toward the first interval (greater strength). Four of the 25 females had the same interval average for both concepts, and the difference values consisted of 6 positive values and 21 negative values. The difference between concepts for the female group on the potency factor was significant at the .01 level, again suggesting that in the female population the concept "ideal male body" had greater potency or strength than the concept "ideal female body."

On the activity factor there was found no significant difference between the concepts "ideal male body" and "ideal female body" for the female group. The median difference was .82 of an interval unit with the concept "ideal male body" tending more toward the first interval (more activity). Nine of the 25 females had the same averaged interval for both concepts. The difference values were 3 positive and 13 negative. Two of the 3 positive values were plus 2, which meant a 2 unit difference between averaged intervals in the positive direction.

From the sample data it was discovered that for the college female population there was a connotative difference in meaning for the concepts "ideal male body" and "ideal female body." The difference in meaning involved at least two factors: evaluation and potency.

In the "my body" and "ideal female body" comparison for the female sample, the concepts were found to differ on the evaluation and potency dimensions. The concept medians and the data for the Wilcoxon signed-ranks test are shown in Table VI.

TABLE VI
FEMALE SAMPLE'S COMPARISON OF THE CONCEPTS
"MY BODY" AND "IDEAL FEMALE BODY"
FOR THE FACTORS E, P, AND A

Factor	MB Median	IFB Median	N _{S-r}	T
E	2.75	1.37	21	00**
P	4.44	4.92	15	24*
A	3.19	3.00	9	65

*p < .05.

**p < .01.

On the evaluation factor the tendency of the "ideal female body" distribution was more toward the first interval (more positive evaluation) than the "my body" distribution. The median difference between concepts was 1.36 interval units. Four of the females in the sample had the same averaged interval for each concept, and there were 21 positive difference values and 0 negative difference values. The female sample showed a significant difference ($p < .01$) in its connotative evaluation of the concepts "ideal female body" and "my body."

In reference to the same concepts, the female group also showed a significant difference on the potency factor. The median difference on the potency factor was .48 of an interval unit with the "my body" distribution tending more toward the first interval (more strength). Ten of the 25 females had the same averaged interval for both concepts, and the difference values were 4 positive and 11 negative. The difference between "my body" and "ideal female body" was significant at the .05 level.

The median difference for the activity factor of the "ideal female body" and "my body" comparison was .19 of an interval unit. Six of the 25 females had the same averaged interval for both concepts. In regard to the D values, there were 12 positive differences and 7 negative differences. The data showed no significant difference on the activity factor of the female sample.

In conclusion, the concept "my body" was considered by the female sample as more potent than the concept "ideal female body," while the concept "ideal female body" was evaluated higher than the concept "my body." There was a very slight difference in concepts for the activity factor. It was estimated, therefore, that there was a difference in connotative meaning for the concepts "my body" and "ideal female body" for the population of college females.

In the comparison of the concepts "love" and "sex" by the male sample, the data indicated that the male sample

considered the difference between concepts to be expressed in the evaluation and potency dimensions. Table VII shows the medians of the concept distributions and the data required for the Wilcoxon signed-ranks test.

TABLE VII
MALE SAMPLE'S COMPARISON OF THE CONCEPTS
"LOVE" AND "SEX" FOR THE
FACTORS E, P, AND A

Factor	"Love" Median	"Sex" Median	N _{S-r}	T
E	1.89	1.46	11	7*
P	3.03	2.80	13	15*
A	2.45	2.43	21	30

*p < .05.

There was a .43 median difference for the evaluation factor, a .23 median difference for the potency factor, and a .02 median difference for the activity factor.

The three factors had the same rank order for both concepts. Evaluation was more toward the first interval (more positive evaluation). Activity and potency were second and third respectively.

On the evaluation factor 14 of the 25 males had the same averaged interval for both concepts. For the evaluation factor the difference value (D) of the Wilcoxon signed-ranks test had 2 negative difference values and 9 positive difference

values. The male sample's discrimination of the difference between concepts was significant at the .05 level; therefore, it was estimated that the college male population had a higher evaluation of the concept "sex" than of the concept "love."

In regard to the potency factor, 12 males had equal averaged interval values for both concepts. The Wilcoxon signed-ranks difference values consisted of 10 positive deviations and 3 negative deviations. The male sample had a significantly different placement of the concepts "love" and "sex" along the potency dimension. As a result, it was inferred that the college male population connotatively viewed the concept "sex" as more potent or stronger than the concept "love."

The male sample had 13 averaged intervals which were the same along the activity dimension, while the Wilcoxon D values consisted of 7 positive difference values and 5 negative difference values. The male sample did not show a significant difference between the concepts "love" and "sex" for the activity factor.

Finally it was concluded that in the college male population there was a connotative distinction for the concepts "love" and "sex." For the college males the concept "sex" was higher valued and more potent than the concept "love."

Table VIII presents the male sample's comparison of the concepts "man" and "woman."

TABLE VIII
 MALE SAMPLE'S COMPARISON OF THE CONCEPTS
 "MAN" AND "WOMAN" FOR THE
 FACTORS E, P, AND A

Factor	"Man" Median	"Woman" Median	N _{S-r}	T
E	2.87	2.22	16	28*
P	3.13	4.96	21	4**
A	2.69	2.96	16	36

*p < .05.

**p < .01.

The male sample placed the concept "woman" more toward the first interval along the evaluation dimension and placed the concept "man" more toward the first interval on the potency and activity dimensions. There was a .65 median difference for the evaluation factor, a 1.83 median difference for the potency factor, and a .27 median difference for the activity factor.

For the evaluation factor, 9 of the males had the same averaged interval for each concept. The Wilcoxon signed-ranks difference (D) consisted of 12 positive deviations and 4 negative deviations. The male sample showed a significant difference ($p < .01$) in its connotative evaluation of the concepts "man" and "woman."

The male sample also had a significant difference ($p < .01$) in its placement of the concepts "man" and "woman" along the potency dimension. The median difference on the potency factor was 1.83 interval units, with the distribution for the concept "man" tending much more toward the first interval (more strength) than the distribution for the concept "woman." Only 4 of the 25 males had the same averaged interval for each concept, and the D values consisted of 1 positive difference value and 20 negative difference values.

Within the activity dimension, 9 of the 25 males had the same averaged interval for both concepts. The Wilcoxon D values consisted of 7 positive differences and 9 negative differences. The above data showed no significant difference on the activity factor for the male sample.

In conclusion, it was found that the concept "man" was considered by the male college population as more potent than the concept "woman." On the other hand, the college male population had a more positive evaluation of the concept "woman" than of the concept "man."

In the male sample's comparison of the concepts "ideal female body" and "ideal male body," it was found that the differences between the concepts were revealed in the evaluation and in the potency factors. Table IX shows the medians for the concepts and gives the required data for the Wilcoxon signed-ranks test.

TABLE IX

MALE SAMPLE'S COMPARISON OF THE CONCEPTS
 "IDEAL MALE BODY" AND "IDEAL FEMALE BODY"
 FOR THE FACTORS E, P, AND A

Factor	IMB Median	IFB Median	N _{s-r}	T
E	2.87	1.33	20	0*
P	2.56	4.91	23	3*
A	2.27	1.42	14	47

*p < .01.

There was a .46 median difference for the evaluation factor with the concept "ideal female body" tending more toward the first interval (more positive evaluation) than the concept "ideal male body." Five of the 25 males had the same averaged interval for both concepts. The Wilcoxon difference (D) values consisted of 15 positive differences and no negative differences. The male sample's evaluation of the connotative difference between the concepts "ideal male body" and "ideal female body" was significant at the .01 level, indicating that the college male population regarded the concept "ideal female body" more favorably than the concept "ideal male body."

There was a 2.35 median difference for the potency factor with the concept "ideal male body" tending toward the more potent interval. Two males had equal interval values for both concepts. The D values consisted of no positive differences

and 23 negative differences. The male sample had a significantly different placement of the concepts along the potency dimension ($p < .01$). It was inferred that the college male population connotatively regarded the concept "ideal male body" as more potent or stronger than the concept "ideal female body."

In reference to the activity dimension, there was a .85 median difference with the "ideal female body" tending toward the more active interval. Along the activity dimension 11 of the 25 males had the same averaged interval for both concepts. The difference values for the Wilcoxon signed-ranks test had 7 positive differences and 7 negative differences. The male sample did not show a significant difference between the concepts "ideal male body" and "ideal female body" on the activity dimension.

In summary, it was estimated that for the college male population there was a connotative distinction for the concepts "ideal male body" and "ideal female body." The college sample valued the concept "ideal female body" more highly than the concept "ideal male body," but the concept "ideal male body" was regarded as more potent than the concept "ideal female body."

Table X presents the data for the male sample's comparison of the concepts "my body" and "ideal female body."

TABLE X
 MALE SAMPLE'S COMPARISON OF THE CONCEPTS
 "MY BODY" AND "IDEAL MALE BODY"
 FOR THE FACTORS E, P, AND A

Factor	MB Median	IMB Median	N _{s-r}	T
E	3.00	2.87	10	20
P	3.04	2.56	16	42
A	3.00	2.27	16	25*

*p < .05.

The data in Table X indicated that the male sample considered the difference between concepts to be expressed in the activity factor.

There was a .13 median difference for the evaluation factor, a .48 median difference for the potency factor, and a .73 median difference for the activity factor. The concept "ideal male body" was placed more toward the first interval on all three factors.

In the evaluation factor 15 of the 25 males had the same averaged interval for both concepts. Here the difference values (D) of the Wilcoxon signed-ranks test consisted of 6 positive and 4 negative difference values. There was no significant difference in the male sample's evaluation of the concepts "my body" and "ideal male body."

Concerning the potency factor, 9 of the males had the same averaged interval for both concepts. The Wilcoxon D values had 10 positive and 6 negative difference values. The male sample did not have a significantly different placement of the concepts "my body" and "ideal male body."

In reference to the activity factor 9 of the males had the same averaged interval for both concepts. The Wilcoxon D values had 11 positive and 5 negative difference values. The male sample showed a difference between the concepts "my body" and "ideal male body" at the .05 level of significance.

It was inferred that in the college male population there was a connotative distinction for the concepts "my body" and "ideal male body" on the activity dimension with the concept "ideal male body" regarded as more active than the concept "my body."

The second design employed a between group comparison which involved comparing the difference between male and female groups over a given concept. The frequency distributions of the factor scores for the two groups were compared over the concepts "love," "sex," "man," "woman," "ideal male body," "ideal female body," and "my body."

For a given concept both the medians and the median difference were determined from the group frequency distributions. The group frequency distribution was dichotomized into two subgroups, one below the median interval and one above the median interval. If the frequency for the median interval

was an even number it was evenly split between subgroups, but if the frequency for the median interval was an odd number the extra frequency always went to the category below the median. The median test (Spence, Underwood, Duncan, and Cotton, 1968) was used to determine whether there was a significant departure from a 50-50 split within each sample, thereby determining whether the samples came from populations with the same median. The median test requires a 2×2 chi square with $df = 1$.

The group frequency data was also categorized by intervals, producing a 2×7 category system. A chi square test was used as a test of independence (McNemar, 1969), testing whether the frequency distributions for the various concepts were a function of difference in sex. In other words, chi square was used to test the null hypothesis that interval frequency on the concepts' factors was independent of sexual differences. The test of independence involved a $2 \times k$ situation with k equal to the number of intervals with at least one response. The $df = k-1$. It should be remembered that when chi square was used to test the difference between group frequency distributions, its significance was that it reflected a difference either "in location parameters, or in variances," or in shape of the distribution, or in any combination of these (McNemar, 1969, p. 271).

Figure 1 is a line graph of the male and female distributions in regard to the interval placement of the concept "love" on the evaluation dimension.

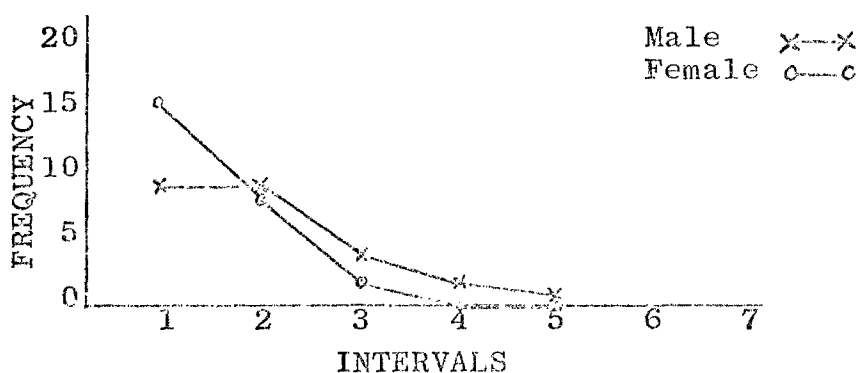


Fig. 1--Male and female frequency distributions on the evaluation dimension of the concept "love."

The medians for the male and female distributions were 1.89 and 1.33 interval units respectively, yielding a total median difference of .56 of an interval unit. The significance of the median difference was probed, using the median chi square test. The resultant chi square of 1.43 was below the .05 level of significance. It was inferred that in the college population there was no significant difference, as regards the central tendency, between the male sample's and the female sample's evaluation of the concept "love."

The independence of the male and female groups as to interval distribution was tested by employing a 2 x 5 chi square. The chi square of 13.23 was significant at the .02 level, indicating that there was a relationship between sex group and interval distribution on the evaluation factor of the concept "love."

Figure 2 is also a line graph of the male and female distributions in reference to the interval placement of the concept "love," as was Figure 1. However, here it is on the potency dimension rather than on the evaluation dimension.

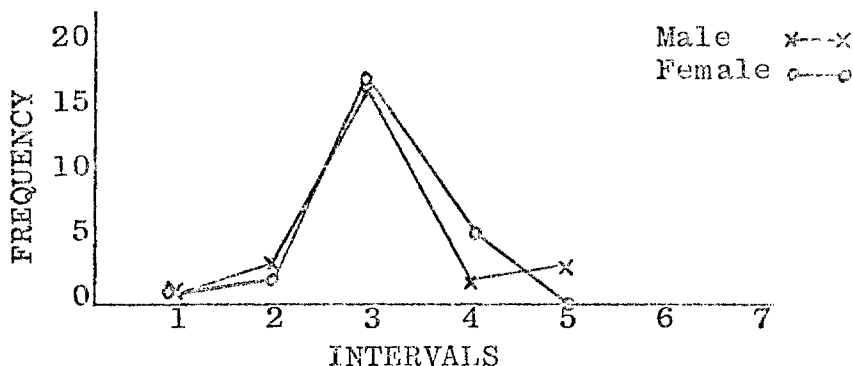


Fig. 2--Male and female frequency distributions on the potency dimension of the concept "love."

The median for the male distribution was 3.03 interval units, while the median for the female distribution was 3.06 interval units. The median difference was a mere .03 of an interval unit. The degree of significance of the median difference was determined using the median chi square test. The chi square obtained was .08, a value that was far below the .05 level of significance. Since there was no apparent significance, it was estimated that the male and female samples came from the same population with respect to the median value of their distributions along the potency dimension of the concept "love."

As a means of testing the independence of the interval distribution in relation to sex group, a 2 x 5 chi square again was employed, as in the first example. The chi square of 4.52 did not, however, reach the level required for significance; consequently, it was concluded that in the given college population the interval distribution on the potency factor of the concept "love" was independent of sexual classification.

The line graph in Figure 3 pictures the male and female distributions as to the interval position of the concept "love" on still a third dimension: the activity dimension.

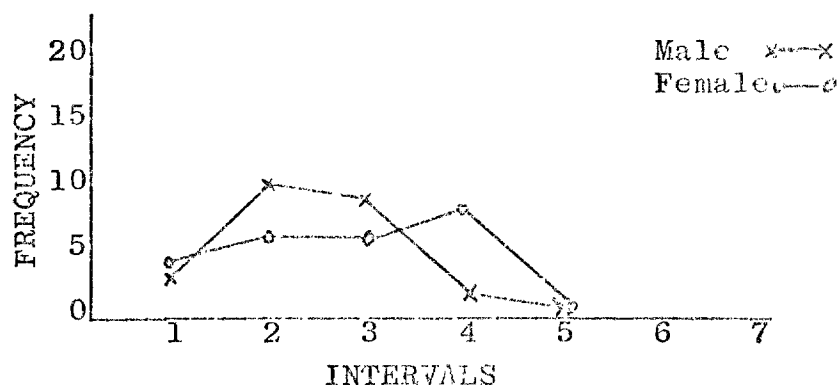


Fig. 3--Male and female frequency distributions on the activity dimension of the concept "love."

The medians for the male and female distributions were 2.45 and 2.92 interval units respectively. This meant that the median difference for the two groups was .47 of an interval unit. The median chi square test was used to test the significance of the median difference. The value obtained for the median chi square was 1.36. This resultant value indicated

that the median difference of the distributions was probably due to chance.

A 2 x 5 chi square was employed to test whether the interval frequency on the activity dimension of the concept "love" was irrespective of difference in sex. The chi square of 6.94 did not reach the .05 level of significance, indicating as in Figure 2 that there was no association or relation between the sex of the individuals tested and the interval distribution of their responses on the activity dimension of the concept "love."

Figure 4 is a line graph of the distributions of the male and female interval placements on the evaluation dimension of the concept "sex."

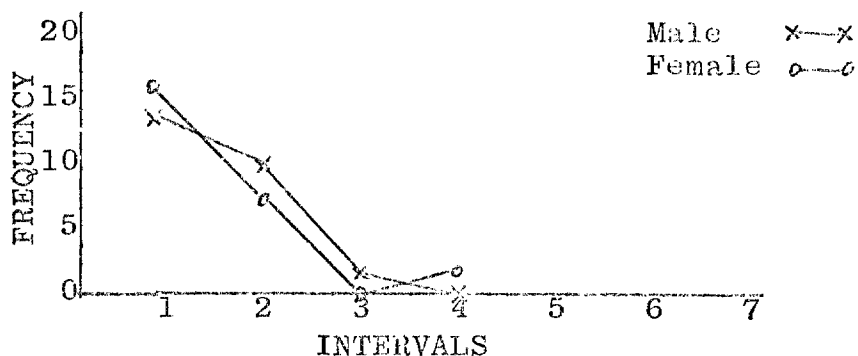


Fig. 4--Male and female frequency distributions on the evaluation dimension of the concept "sex."

The median for the male distribution was 1.46 interval units; the median for the female distribution was 1.28 interval units. The difference, then, between the two distributions was .18 of an interval unit. Here again, the next procedure was to

ascertain the significance of the median difference, using the median chi square test. The obtained median chi square was .00. Consequently, there was hardly reason to expect that the samples' median difference represented a true median difference in the male and female college populations.

A 2 x 4 chi square was thereafter used to test the independence of the male and female groups as to their respective interval distributions. The chi square of 4.84 was below the level required for significance. It was therefore perceived that for the college population the frequency distribution on the evaluation dimension of the concept "sex" was independent of difference in sex.

Below, in Figure 5, is depicted a line graph of the male and female distributions with respect to the interval placement of the concept "sex" on the potency dimension.

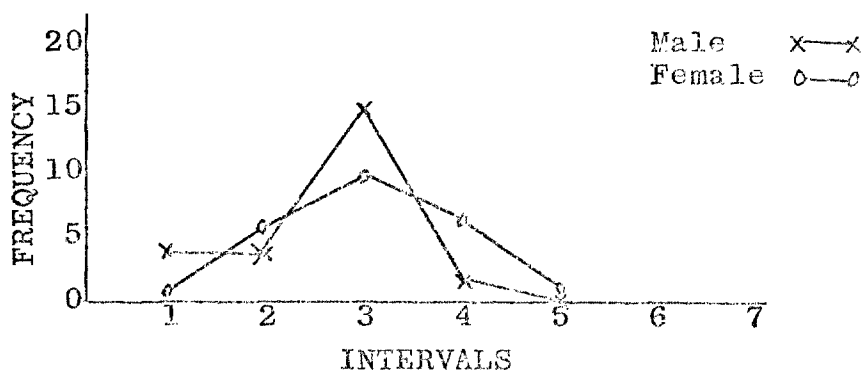


Fig. 5--Male and female frequency distributions on the potency factor of the concept "sex."

The median for the male distribution was 2.80 interval units.

while the median for the female distribution was 3.05 interval units. To define the significance of the median difference, which was .25 of an interval unit, a median chi square test was employed. The median chi square of 1.30 was not significant at the .05 level. From this fact the conclusion was drawn that the median difference of the male and female distributions was due to chance variation and that the samples came from populations with the same median.

The independence of the male and female groups relative to interval distribution was statistically tested by using a 2 x 5 chi square. There was obtained a chi square of 6.98. Since this value was not significant at the .05 level, one could conclude that for the college population there was no association between sexual difference and frequency distribution on the potency dimension of the concept "sex."

The male distribution and the female distribution in regard to the interval placement on the activity dimension of the concept "sex" are represented by the line graph in Figure 6.

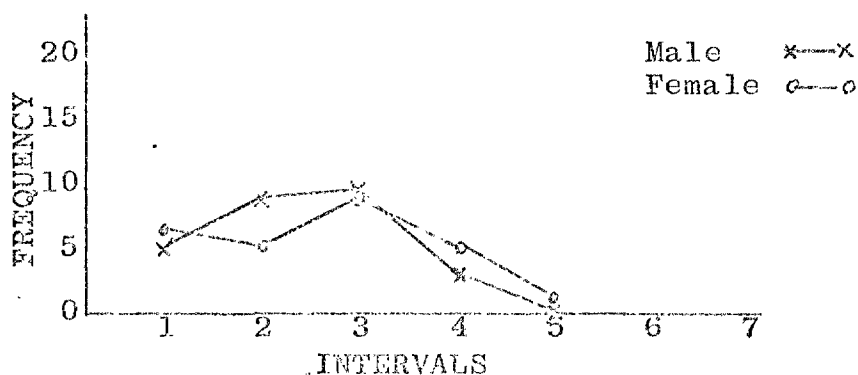


Fig. 6--Male and female frequency distributions on the activity dimension of the concept "sex."

The medians for the preceding distributions were 2.43 and 2.69 interval units respectively. The median difference for the two sample distributions was .26 of an interval unit. The significance of this difference was measured using the median chi square test. The obtained median chi square of .36 was below the .05 level of significance. It was discovered that the male and female samples came from populations with the same median and that the college population did not differ in central tendency on the activity factor of the concept "sex."

To test the possibility of a relationship between sex group and interval distribution on the activity factor of the concept "sex," a 2 x 5 chi square test was employed. The chi square value of 2.35 did not reach a sufficiently high level to indicate significance. It was concluded that for the college population the frequency distribution on the activity dimension was independent of sex distinction.

Figure 7 is a line graph of the male and female distributions in reference to the evaluation of the concept "man."

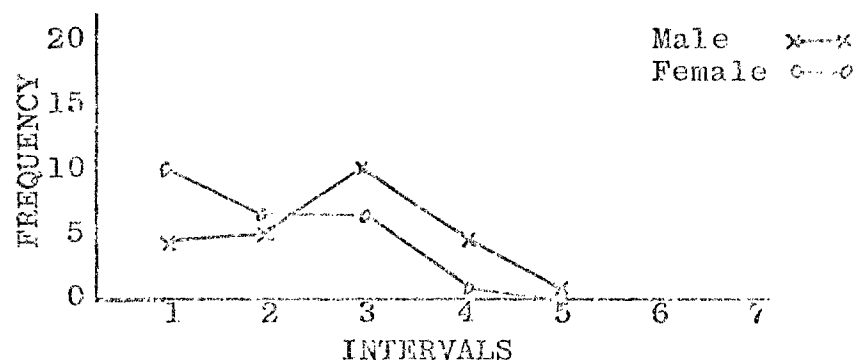


Fig. 7-- Male and female frequency distributions on the evaluation dimension of the concept "man."

The medians for the preceding distributions were 2.85 and 1.85 interval units respectively. To judge the significance of the median difference, which was .99 of an interval unit, a median chi square was used. The median chi square of 2.96 was not significant at the .05 level. This fact indicated that the median difference of the male and female distributions was due to chance and that the samples did indeed come from a common population with a common central tendency.

To examine the possibility of a relationship between sex group and interval distribution on the evaluation factor of the concept "man," a 2 x 5 chi square was calculated. The chi square value of 7.11 did not attain the level required for significance. It was, therefore, inferred that for the college population the frequency distribution on the evaluation dimension was independent of sexual classification.

The line graph designated Figure 8 shows the male and female distributions with respect to the interval placement of the concept "man" on the potency dimension.

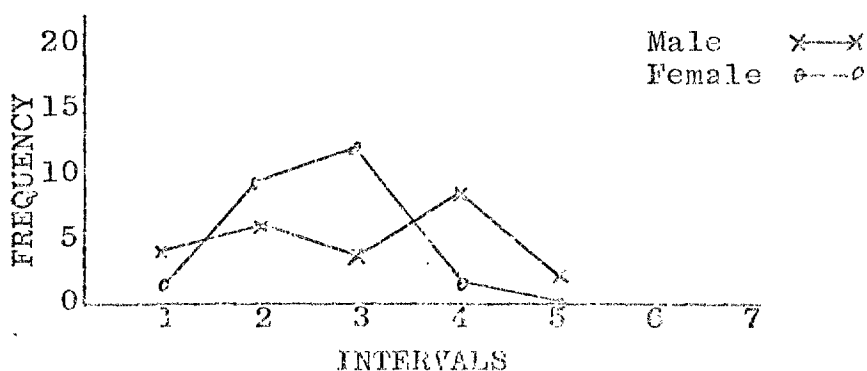


Fig. 8--Male and female frequency distributions on the potency dimension of the concept "man."

The male distribution had a median of 3.13 interval units, and the female distribution had a median of 2.63 interval units. The medians of the preceding specified distributions differed by .5 of an interval unit. The significance of the median difference was tested using the median chi square test. The median chi square obtained was 2.05, a figure that did not reach the .05 level of significance. It was judged that the sample medians were really from the same population. In addition, it was concluded that the degree to which the male and female college populations differed in medians within this comparison was of little consequence.

The independence of the male and female groups in relation to interval distribution was tested by using a 2 x 5 chi square. Because the chi square of 11.87 was significant at the .02 level, it was estimated that, as in only one other male and female comparison to this point (Figure 1), there was an association between sex group and frequency distribution. In the comparison pictured in Figure 1, the significant association occurred on the evaluation factor of the concept "love." Here it is on the potency factor of the concept "man."

Figure 9 is a line graph of the male and female distributions in reference to the interval placement of the concept "man" on the activity dimension.

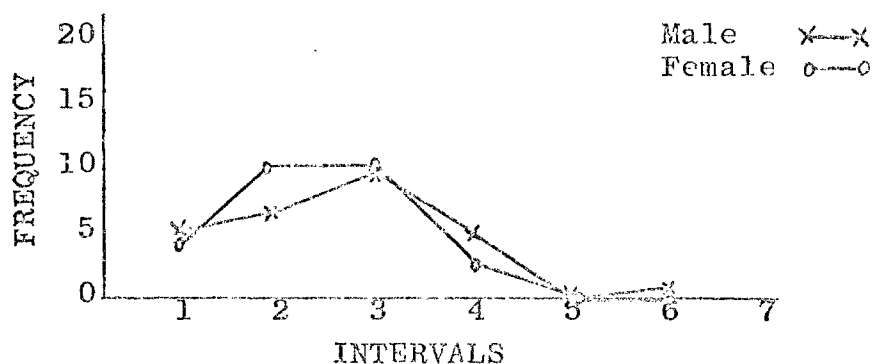


Fig. 9--Male and female frequency distributions on the activity dimension of the concept "man."

The median for the male distribution was 2.69 interval units, and the median for the female distribution was 2.44 interval units, a difference of .25 of an interval unit. The significance of this difference was statistically tested using a median chi square. The median chi square of .35 was considerably below the .05 level of significance. This fact was interpreted to mean that in the college population there was no significant median difference between the male and female distributions on the activity factor of the concept "man."

A 2 x 6 chi square was used to test the independence of the male and female groups with respect to interval distribution. The chi square of 2.27 was well below the level required for significance. Therefore, it was estimated that for the college population there was no relationship between sexual difference and frequency distribution on the activity dimension of the concept "man."

Figure 10 depicts the male and female interval distributions pertinent to the position of the concept "woman" on the evaluation dimension.

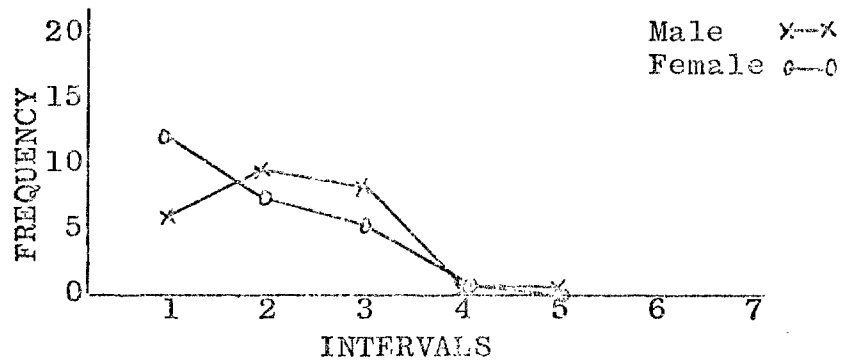


Fig. 10--Male and female frequency distributions on the evaluation dimension of the concept "woman."

The male distribution had a median of 2.22 interval units, while the female distribution had a median of 1.57 interval units. As a means of determining the significance of the median difference, a 2 x 2 median chi square was calculated. Since its value of 2.01 did not achieve the level of significance, it was inferred that the medians of the two distributions were not significantly different.

A 2 x 5 chi square of 3.94 with 4 degrees of freedom did not reach the level of significance. It was, therefore, interpreted that there was no association between sexual difference and frequency distribution on the evaluation factor of the concept "woman."

The following line graph (See Figure 11.), representative of the male and female distributions, refers to the interval placement of the concept "woman" on the potency dimension.

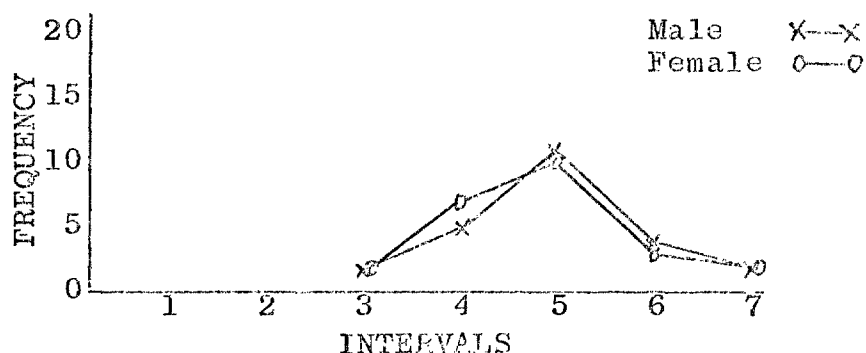


Fig. 11--Male and female frequency distributions on the potency dimension of the concept "woman."

The median for the male distribution was 4.96 interval units, and the median for the female distribution was a similar 4.82 interval units. A median chi square was calculated to ascertain the significance of the slight difference between the group medians. Because the median chi square of .32 was well below the .05 level of significance, it was judged that the central tendency values of the two sex groups probably came from the same population.

A 2 x 5 chi square was used to test the independence of sex group with respect to interval distribution. The chi square value of 3.53 was well below the level required for significance. This suggested that in the college population the interval placement of the concept "woman" on the potency dimension was independent of difference in sex.

The line graph in Figure 12 represents the male and female distributions in reference to the interval placement of the concept "woman" on the activity dimension.

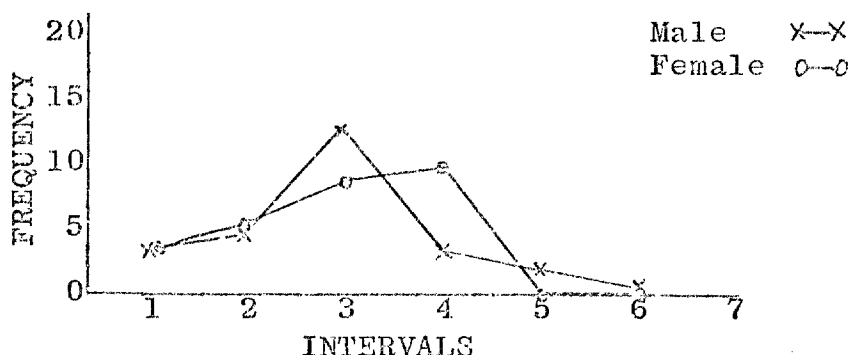


Fig. 12--Male and female frequency distributions on the activity dimension of the concept "woman."

The median for the male distribution is 2.96 interval units, while the median for the female distribution is 3.06 interval units, a median difference of .10 of an interval unit. The median chi square obtained was .08 of an interval unit, a score considerably below the .05 level of significance. It was interpreted that in the college population there was no meaningful difference in central tendency between the males and females on the activity dimension of the concept "woman."

A 2 x 5 chi square was used to test the independence of male and female groups relative to interval distribution. The chi square of 6.91, well below the required value for significance, denoted an independence of sex difference for the college population with respect to their interval placement of the concept "woman" on the activity dimension.

Male and female distributions as to the interval placement of the concept "ideal male body" on the activity dimension are shown in the line graph entitled Figure 13.

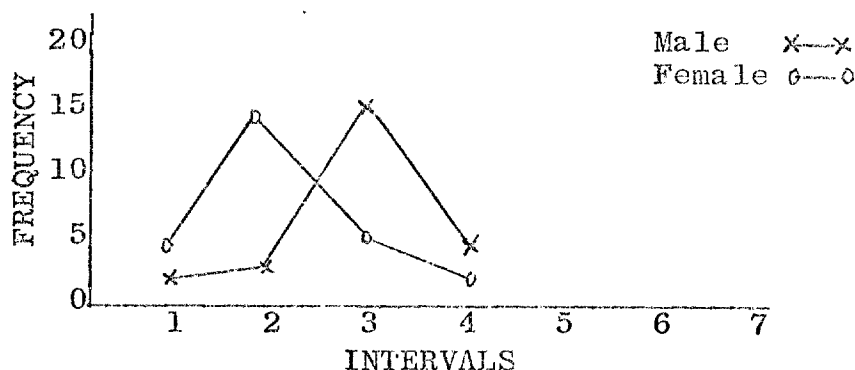


Fig. 13---Male and female frequency distributions on the evaluation dimension of the concept "ideal male body."

In Figure 13 the median for the male distribution was shown to be 2.87 interval units; the median for the female distribution was 2.11 interval units. It was noted, therefore, that the females tended to have a greater distribution toward the first interval, or a more positive evaluation. There was obtained a 2 x 2 median chi square of 4.50, which was significant at the .05 level, suggesting that in the college population there was a significant difference in the males' and the females' evaluation of the concept "ideal male body." The female group tended toward a more positive evaluation of the concept.

Also a 2 x 4 chi square of 14.07 with 3 degrees of freedom was significant at the .01 level for the third time in the series of male and female comparisons. The significant

chi square indicated that there was an association between sex group and interval distribution on the evaluation factor of the concept "ideal male body."

In the line graph labelled Figure 14, the male and female distributions with respect to the interval placement of the concept "ideal male body" are again depicted, as in Figure 13. Here, however, the concept lies on the potency dimension.

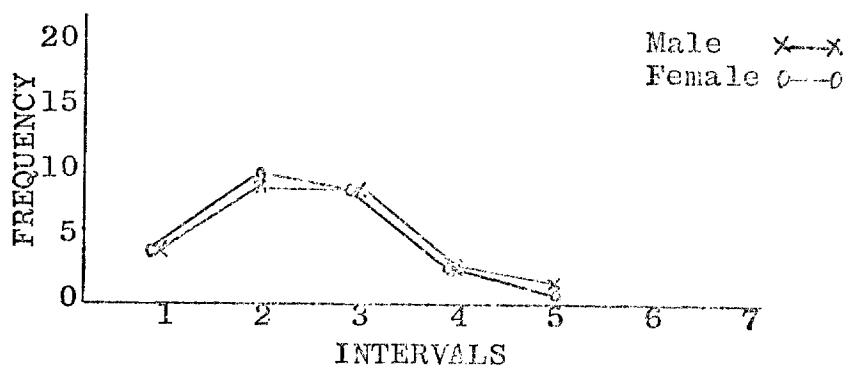


Fig. 14--Male and female frequency distributions on the potency dimension of the concept "ideal male body."

The median for the male distribution was 2.56 interval units, and the median for the female distribution was 2.44 interval units. The difference in the median values amounted to .12 of an interval unit. To determine the significance of the difference between the median values, a median chi square was calculated. Its value of .08 was well below the level required for significance, which indicated that the college male and female populations did not significantly vary, in reference to central tendency, in their placement of the concept "ideal male body" on the potency dimension.

There was employed a 2 x 5 chi square to measure whether sex group affected interval distribution. This chi square of .39 was also quite far below the level required for significance; therefore, it was estimated that in the college population the placement of the concept "ideal male body" on the potency dimension was independent of the difference in sex.

The line graph in Figure 15 pictures the male and female interval distributions regarding the placement of the concept "ideal male body" on the activity dimension.

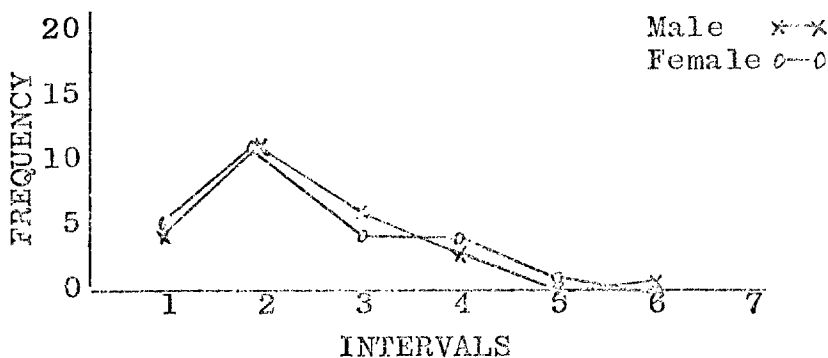


Fig. 15--Male and female frequency distributions on the activity dimension of the concept "ideal male body."

The median was 3.27 interval units for the male distribution and 2.18 interval units for the female distribution. The difference between the medians, only .09 of an interval unit, was compared using a median chi square. The resultant value of .03 was well below the .05 level of significance. It was estimated that the college male population and female population did not differ as to central tendency in their placement of the concept "ideal male body" on the activity dimension.

A 2 x 6 chi square was used to test the independence of the interval distribution in reference to sex group. The chi square of 2.66 was well below the required level of significance and consequently indicated that in the college population the placement of the concept "ideal male body" on the potency dimension was independent of sex difference.

Figure 16 is a line graph of the male and female distributions in reference to the evaluation of the concept "ideal female body."

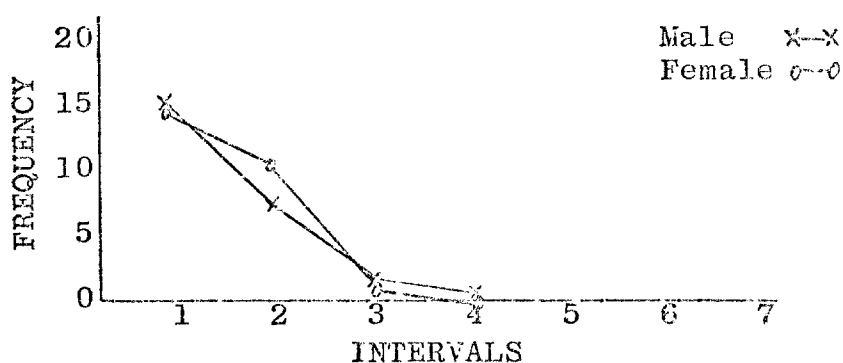


Fig. 16--Male and female frequency distributions on the evaluation dimension of the concept "ideal female body."

The median for the male distribution was 1.33 interval units; the median for the female distribution was 1.39 interval units. There was a very small median difference of .06 of an interval unit. The median chi square test was used to find the level of significance of the median difference between the male and female samples. The median chi square was discovered to be 0.0, which of course was far below the required value for significance. There was every reason to believe that the male and female samples came from the same population.

To test the independence of the male and female groups in relation to the interval distribution, a 2 x 4 chi square was calculated. The resultant chi square of 1.90 was again well below the required value for significance. Therefore, for the college population no association was perceived between sexual classification and interval distribution for the evaluation dimension of the concept "ideal female body."

The male and female distributions relative to the interval placement on the potency dimension of the concept "ideal female body" are seen on the line graph marked Figure 17.

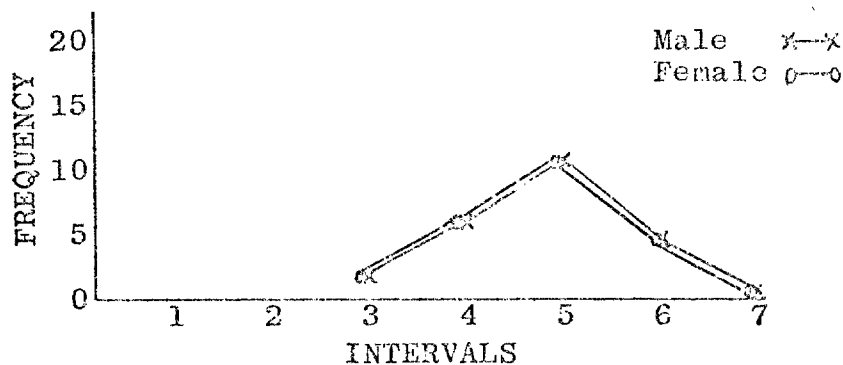


Fig. 17--Male and female frequency distributions on the potency dimension of the concept "ideal female body."

The median for both the male distribution and the female distribution was 4.91. Since there was no median difference, there was no reason to assume that the samples came from different populations. Accordingly, since the male and female samples had identical interval frequency distributions, there was evidence to indicate that the college population's

interval placement on the potency dimension of the concept "ideal female body" was in no way associated with difference in sex.

The line graph in Figure 18 depicts the male and female distributions as to their respective interval placements on the activity dimension of the concept "ideal female body."

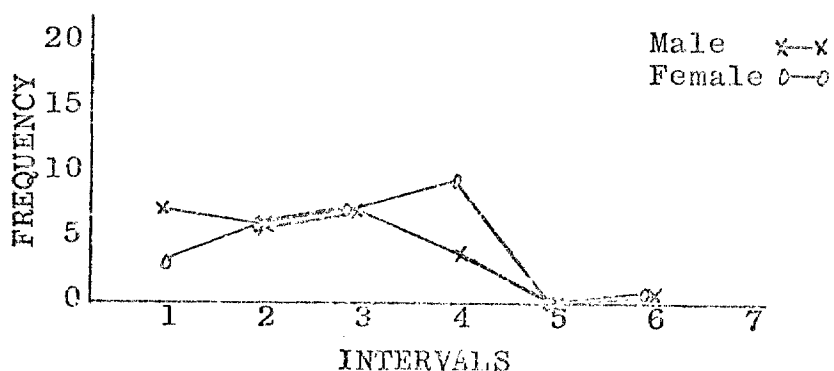


Fig. 18--Male and female frequency distributions on the activity dimension of the concept "ideal female body."

The medians for the male and female distributions were 2.42 and 3.00 interval units respectively. To test the significance of the median difference, which was .58 of an interval unit, a median chi square test was employed. The median chi square of 1.33 did not reach the .05 level of significance. It was therefore estimated that the median difference for the male and female distributions was due to chance variation and that in the college population there was no significant difference in central tendency for the males and females on the activity dimension of the concept "ideal male body."

The independence of the male and female groups in relation to interval distribution was determined by means of a 2 x 6 chi square test. Because the chi square of 4.52 was well below the required value for significance, it was concluded that for the college population there was no relationship between the sex of the individual and the interval distribution on the activity factor of the concept "ideal female body."

Figure 19 is a line graph of the male and female distributions in reference to the interval placement on the evaluation dimension of the concept "my body."

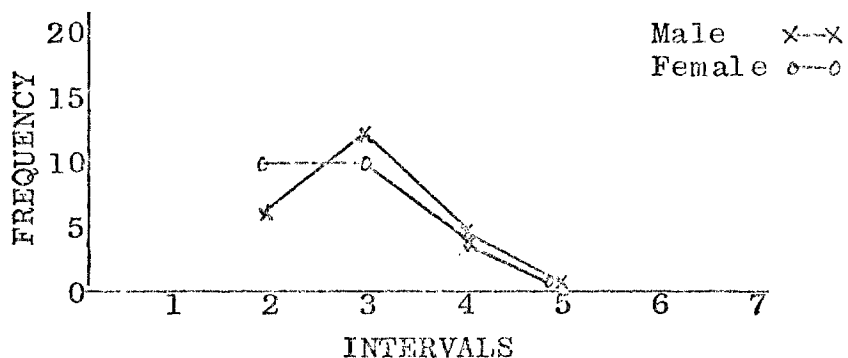


Fig. 19--Male and female frequency distributions on the evaluation dimension of the concept "my body."

Concerning the measurement of the central tendency for the male and female distributions, the medians were 3.00 and 2.75 interval units respectively. The median difference of .25 of an interval unit was tested for statistical significance by using the median chi square test. The median chi square of .32 was well below the value required for significance.

As a result, there was determined to be no significant difference with regard to central tendency in the males' and females' evaluations of the concept "my body."

A 2 x 4 chi square was employed at this point to test the independence of the male and female groups in relation to the interval distribution. The chi square was found to have a value of 1.51, a value well below the .05 level of significance; consequently, for the college population there was estimated to be no association between sex distinction and interval distribution on the evaluation factor of the concept "my body."

A line graph was constructed showing the male and female distributions with respect to the interval placement of the concept "my body" on the potency dimension. This graph is pictured in Figure 20.

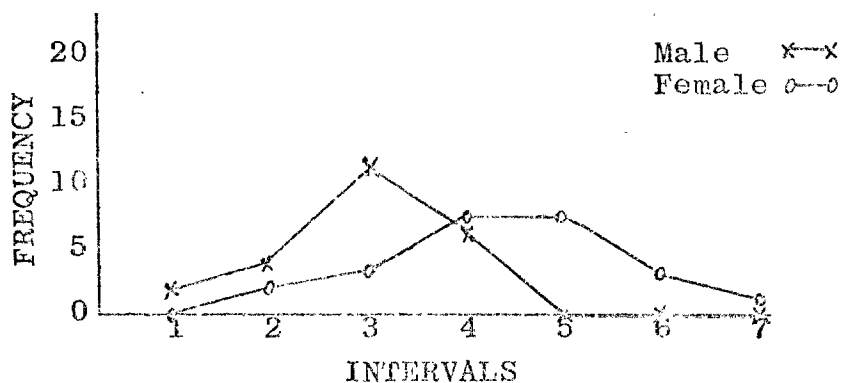


Fig. 20--Male and female frequency distributions on the potency dimension of the concept "my body."

The median for the male distribution was 3.04 interval units, while the median for the female distribution was 4.44 interval

units. The data suggested that, of the two sample distributions, the males tended to have a greater frequency concentration toward the interval of greater strength or potency. The median difference between the two distributions was 1.4 interval units. There was calculated a median chi square in order to determine if the median difference was statistically significant. The median chi square of 4.50 was significant at the .05 level. It is well to note that the chi square employed to test significance of the median difference yielded a value significant only in one other male and female comparison, that represented in Figure 13. It was estimated that in the college population there was a meaningful difference in the males' and females' interval placement of the concept "my body" along the potency dimension and that the males tended to view, connotatively, the concept "my body" as more potent.

As a means of testing the independence of the interval distributions as to sex group, a 2×7 chi square was calculated. The chi square of 20.13 was significant at the .01 level. Therefore, it was concluded that in the college population the placement of the concept "my body" on the potency dimension was related to or associated with sex difference. Here it should be noted that dependency of interval distribution upon sex occurred in Figure 13 and earlier in Figures 1 and 8.

Figure 21 is a line graph of the male and female distributions in regard to the interval placement of the concept "my body" on the activity dimension.

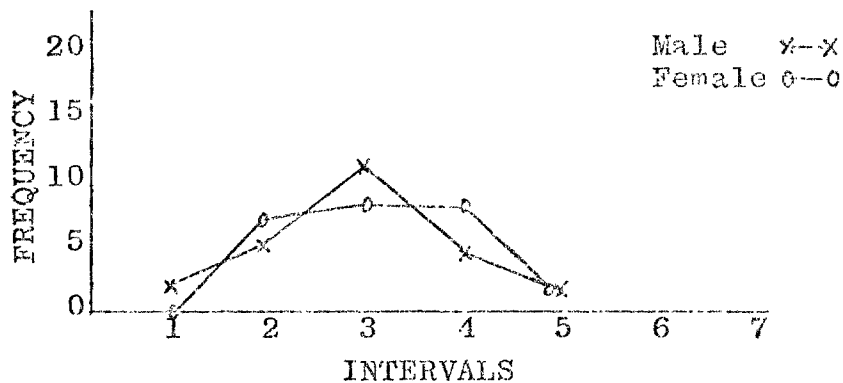


Fig. 21--Male and female frequency distributions on the activity dimension of the concept "my body."

The medians for the male and female distributions were 3.00 and 3.19 interval units respectively. There was a median difference of .19 of an interval unit. The significance of this difference was explored using the median chi square test. The median chi square of .32 was far below the .05 level of significance. Therefore, it was determined that the male and female samples came from the same population in reference to the median value of their distributions along the activity dimension of the concept "my body."

In order to test the independence of the interval distribution in relation to sex group, a 2 x 5 chi square was employed. Once again the chi square of 1.50 did not reach the level required for significance. This was interpreted to mean that there was no significant association between sex group and

interval distribution on the activity factor of the concept "my body."

Discussion

In considering the "sex" and "love" comparison, the most striking feature was the the male sample significantly differentiated between the concepts on the evaluation and potency dimension, while the female sample did not discern a significant difference between the concepts in any of the three factors. The college males seemed to feel connotatively that "sex" was more valuable and more potent than "love."

In the male and female comparison, the sample distributions did not denote a significant difference in the central tendency of the two groups for the concepts "sex" and "love." In the test of independence there was a significant difference between the distributions on the evaluation factor of the concept "love," indicating that the interval frequency distribution on the evaluation factor was a function of sexual difference.

In regard to the "man" and "woman" comparison, both samples considered the concept "man" as the more potent. The male sample again differentiated significantly, giving a more favorable evaluation to the concept "woman," while the female sample did not significantly discriminate on the evaluation dimension. It appeared, therefore, that college men connotatively favored the concept "woman" over the concept "man." The central tendency of the two samples on all factors of

the concepts "man" and "woman" did not significantly vary. There was a significant relationship between sex group and frequency distribution on the potency dimension of the concept "man." In short, the connotative placement of the concept "man" on the potency dimension was a function of sexual difference.

In the "ideal male body" and "ideal female body" comparison, both the male and female samples significantly discriminated between concepts on the evaluation and potency dimensions. Both samples evaluated the "ideal female body" as more favorable but felt that the concept "ideal male body" was more potent. There was a significant sample difference in central tendency on the evaluation factor of the concept "ideal male body." It would seem that college women evaluated the concept "ideal male body" more favorably than did college men.

In the "my body" and "ideal female body" comparison the female sample discriminated on two factors: evaluation and potency. It would seem that college women connotatively considered the concept "ideal female body" to be more favorable than the concept "my body" but felt the concept "my body" to be more potent or stronger than the concept "ideal female body." The male sample did not discriminate for the evaluation and potency dimensions but did connotatively consider "ideal male body" as more active than "my body."

The placement of the concept "my body" on the potency dimension was a function of difference in sex. The male sample considered the concept "my body" to be more potent than did the female sample.

Conclusion

In regard to the first hypothesis, which involved a within group comparison, the investigation did find differences between concepts for the same sex group. For the male sample there were significant differences between the concepts "love" and "sex," "man" and "woman," "ideal male body" and "ideal female body," and "my body" and "ideal male body." For the female sample there were significant differences between the concepts "man" and "woman," "ideal male body" and "ideal female body," and "my body" and "ideal female body." The sex groups did show a high degree of differentiation in the connotative meaning of the masculine and feminine concepts.

In reference to the second hypothesis, which involved a between group comparison, the investigation did find a significant difference between sex groups for certain concepts. A functional relationship was found to exist between sex group and interval distribution on the evaluation dimension of the concepts "love" and "ideal male body" and on the potency dimension of the concepts "man" and "my body." Only on the evaluation dimension of the concept "ideal male body" and the potency dimension of the concept "my body" was there found to

be a significant difference in central tendency. The results indicated that only to a limited degree was the connotative meaning of the concepts a function of difference in sex.

APPENDIX

TABLE XI

FACTOR LOADINGS FOR CONCEPTS "LOVE" AND "SEX"

Scales	Factor	Analysis I	Analysis II	Thesaurus Study
Beautiful-ugly	E	.86	2.40	.52
Pleasant-unpleasant	E	.82	2.38	. .
Valuable-worthless	E	.79	1.87	. .
Strong-weak	P	.62	1.81	.40
Deep-shallow	P	.46	1.46	(.48)
Hard-soft	P	.55	1.06	.97
Hot-cold	A	.46	.65	.26
Active-passive	A	.59	1.39	.98
Fast-slow	A	.70	1.50	.35

*The factor loadings from Analysis I, Analysis II, and the Thesaurus Study were first presented in The Measurement of Meaning (Osgood, Suci, and Tannenbaum, Tables 1, 2, and 5 respectively).

TABLE XII
 FACTOR LOADINGS FOR CONCEPTS "MAN" AND "WOMAN"

Scales	Factor	Analysis I	Analysis II	Thesaurus Study
Pleasant-unpleasant	E	.82	2.38	. .
Good-bad	E	.88	2.29	1.00
Valuable-worthless	E	.79	1.87	. .
Strong-weak	P	.62	1.81	.40
Large-small	P	.62	1.76	.21
Hard-soft	P	.55	1.06	.97
Active-passive	A	.59	1.39	.98
Sharp-dull	A	.52	1.88	. .
Fast-slow	A	.70	1.50	.35

*The factor loadings from Analysis I, Analysis II, and the Thesaurus Study were first presented in The Measurement of Meaning (Osgood, Suci, and Tannenbaum, Tables 1, 2, and 5 respectively).

TABLE XIII

FACTOR LOADINGS FOR CONCEPTS "IDEAL MALE BODY,"
"IDEAL FEMALE BODY," AND "MY BODY"

Scales	Factor	Analysis I	Analysis II	Thesaurus Study
Beautiful-ugly	E	.86	2.40	.52
Nice-awful	E	.87	2.39	. .
Valuable-worthless	E	.79	1.87	. .
Clean-dirty	E	.82	2.38	.45
Strong-weak	P	.62	1.81	.40
Hard-soft	P	.55	1.06	.97
Large-small	P	.62	1.76	.21
Active-passive	A	.59	1.39	.98
Fast-slow	A	.70	1.50	.35
Sharp-dull	A	.52	1.88	. .

*The factor loadings from Analysis I, Analysis II, and the Thesaurus Study were first presented in The Measurement of Meaning (Osgood, Suci, and Tannenbaum, Tables 1, 2, and 5 respectively).

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