THE EFFECTS OF INTENSIVE MEDITATION ON SEX-ROLE IDENTIFICATION

IMPLICATIONS FOR A CONTROL MODEL OF PSYCHOLOGICAL HEALTH

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SUPPLEMENTARY MANUSCRIPT

ABSTRACT

Based on previous efforts to develop a control model of psychological health interfacing Eastern and Western cultural views, and masculine and feminine sex-role stereotypes, it was hypothesized that meditation is a self-control technique which would enhance certain stereotypically feminine qualities (e.g., yielding, compassion), while decreasing certain stereotypically masculine qualities (e.g., analytical). Using the Bem Sex-role Inventory, 20 socially desirable masculine, 20 socially desirable feminine, and 20 filler words to assess individuals prior to and following an intensive 3-month meditation retreat, some support was provided for this hypothesis. Twelve men and 13 women completed the pretest, and 6 men and 9 women completed the posttest. The mean age for the men was 27.3, and for the women 31.6. The results for the group as a whole, from pre to posttest partially confirmed the hypothesis: for the designated masculine words 13 decreased while 6 increased, and for the feminine words 14 increased and 5 decreased. Second, the pretest profile showed interesting cross-sex differences with respect to individuals attracted to the meditation retreat. Specifically, on 9 of the stereotypically masculine words (e.g., aggressive, strong personality, dominant) women had higher scores than the men. The implication of the first finding is discussed in terms of the relationship of meditation and sex-role identification to refining and extending a control model of psychological health. The implication of the second (pretest) finding is discussed in terms of developing a subject profile for matching a particular self-control strategy to a particular person. Finally, guidelines and suggestions for future research are offered.

Previous research on meditation has been hampered by a number of conceptual and methodological problems. Earlier studies (e.g., Benson & Wallace, 1972) used retroactive sampling techniques with all the inherent problems of subject bias, demand characteristics, and poor recall. More recent studies, although employing longitudinal designs, have tended to utilize a short length of intervention (e.g., Goldman, Domitor, & Murray, 1979) even though meditation effects, as true of self-control strategies in general, appear to co-vary with practice and experience (Davidson, Goleman, & Schwartz, 1976; Kasamatsu & Hirai, 1966). Other refinements have included trying to feret out active versus inert components of the technique, including the role of expectation effects and demand characteristics (Smith, 1976, 1978; Malec & Sipprelle, 1977), and developing a subject profile (Beiman, 1982; Smith, 1978), including those attracted to meditation (Stek & Bass, 1973) and those subjects who practice and for whom there are adverse effects (Walsh & Roche, 1979; Otis, 1982).

Meditation has been shown to be effective as a self-control strategy in dealing with addictions, stress, and hypertension (Shapiro, 1980; Shapiro & Giber, 1978). However, more recent studies suggest equivalent efficacy of competing self-regulation techniques (such as biofeedback, hypnosis, progressive relaxation) for those disorders, and efforts to determine a treatment of choice appear to have reached a plateau (Shapiro, 1982a; Blanchard & Silver, 1980; Raskin, 1980; Zuroff, etal. 1978, 1980).

There are a number of important refinements which may help move research beyond the current plateau. One refinement involves realizing (and trying

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to rectify) the fact that little attention has been paid to the positive

vision of psychological health for which these self-control techniques

might be utilized (Walsh & Shapiro, 1982; Seeman, Nidich, & Banta, 1972),

a problem which creates difficulties in comparing techniques and interpreting

data. This is particularly important since the context within which strategies

are used may be critical in determining their purpose, as well as their

outcome. For example, research on the technique of meditation may require

a sensitivity to its philosophical framework and the cultural context within

which it is embedded (Shapiro, 1980; Walsh, 1980; Shapiro & Walsh, 1982),

particularly in comparing meditation to Western strategies (Shapiro &

Zifferblatt, 1976). These concerns have led to the development of a

theoretical model of control emphasizing the traditional positive qualities

of the Eastern disciplines: yielding, nonattachment, acceptance, letting

go; and the positive qualities of a stereotypically Western framework:

assertiveness, goal-orientedness, precise analysis (Shapiro, 1978, 1982b;

Gilgen & Cho, 1979).

Preliminary research (Shapiro,etal. Note 1; Shapiro, Note 2) suggest

that this control model might have considerable overlap with another

independent line of inquiry--the literature on sex-role identification

(Bem, 1974, 1981; Spence, 1979). It appears that many[2] of the qualities

considered stereotypically feminine, e.g., yielding, have direct overlap

with those posited in the Eastern literature, whereas other stereotypically

feminine qualities, like compassion and nurturance, are posited in some

Eastern traditions (Walsh, 1982) but not in others.

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[2] Clearly the relationship does not appear to be one to one, as some Eastern
qualities such as nonattachment and disidentification appear to have little
if any overlap with stereotypically feminine qualities; and certain feminine
qualities (such as gullible) are not found in the Eastern literature.
However, it is just this need for precision which gives impetus to the study.

Research suggests that masculine and feminine qualities are generally seen as dualistic or bipolar, and that individuals tend to see a negative relationship between masculinity and femininity (Foushee, etal. 1979), even though it has been posited on a values level that the perpetuation of traditional sex role distinctions is dysfunctional (Spence & Helmreich, 1979). Thus, the concept of androgyny, involving an equal endorsement (Bem, 1974, 1977, 1981) and integration of desirable feminine and desirable masculine characteristics, has been posited as a possible model of positive health. The literature to date suggests that androgynous individuals have higher self-esteem (Spence, Helmreich & Stapp, 1975), higher level of psychological integration (Small, Tegano & Selz, 1979), are more flexible in their social behavior, and can vary this behavior according to situational demands rather than sex role stereotyping (Bem, 1975; Bem & Lerner, 1976). However, there are concerns about whether we need to be careful in asserting that androgynous individuals are necessarily healthier (Spence, etal. 1979) particularly unless these androgynous qualities can be integrated (O'Neal, 1981; Kaplan, 1978). This integration would involve the ability to have a cognitive control, involving flexibility and choice, an attribute praised not only in the sex role literature (Bem, 1981), but in the Western cognitive psychology literature in general (Mischel, 1981; Meichenbaum, 1976; Mahoney, 1974; Beck, 1976) as well as in the Eastern psychological literature (Goleman & Epstein, 1982; Tart, 1975; Deikman, 1982).

For example, the Eastern tradition suggests that this type of cognitive control and flexibility may be obtained through the technique of meditation, in which an individual learns to observe thoughts without being bound or caught by them. Research suggests that by being able to observe thoughts

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equinimitably, one's affective intensity lessens, resulting in greater

centeredness, clarity of perception, and sensitivity to and acceptance of

a wider variety of stimuli (Shapiro & Giber, 1978; Shapiro, 1980). Thus,

at first glance, it appears that meditation, a technique which teaches one

not to be attached to particular contents of thoughts (including cognitions

involving sex-role identification as masculine or feminine) would help teach

an individual more cognitive fluidity in defining oneself, and thereby would

allow for a more equal endorsement of both stereotypically masculine and

stereotypically feminine socially desirable words. Although the Eastern

traditions emphasize balance (Goldstein, 1976; Shapiro, 1982b), the context

of a meditation retreat is one in which nondoing, being, and acceptance

are emphasized, qualities which appear to be similar to the stereotypically

feminine qualities. Therefore, this study, hypothesized that a meditation

retreat would increase individuals' self-perception in a more "stereo-

typically feminine" direction (e.g., more yielding, more compassionate), and

decrease certain stereotypically masculine self-perceptions (e.g., analytical).

The study seeks to go beyond prior studies in several ways: (1) using

a longitudinal pre-/posttest assessment rather than retroactive sampling;

(2) utilizing a long (3-month) intervention in which practice is assured

and in which meditation is practiced intensively up to 16 to 18 hours

per day (rather than some studies which have used interventions as short

as five 20-minute sessions); (3) within an overall control model of

psychological health, trying to bring together sex-role literature and the

stereotypically Eastern and Western cultural views to determine in a

preliminary and more precise and exact way, the nature of the interface; and

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(4) by assessing the pretest profile of individuals attracted to this
meditation retreat to extend the literature on profile of individuals
attracted to different self-control strategies.

METHOD

Subjects and Setting

Subjects were individuals attending a meditation retreat for 3 months
in Barre, Massachusetts at the Insight Meditation Center. The type of
meditation practice was Vipassana, a Buddhist practice which attempts to
maintain a precise yet fluid observation of whatever is predominant in the
field of awareness (see Kornfield, 1979; Goldstein, 1976; Walsh, 1977).
Each day involved trying to maintain this mindfulness for up to 16 hours
a day, in both formal meditation sitting sessions, walking meditation,
and while eating. No eye contact or verbal communication was allowed
between participants. Each participant did meet and discuss his practice
once every two or three days with the teachers. In the midmorning there
was an instructional session on meditation practice and in the evening a
dharma (teaching) lesson (see Goldstein, 1976).

Twelve men and 13 women volunteered to fill out the pretest, about
25% of those attending the retreat. Of this group, 6 men and 9 women
also filled out the posttest, a 60% attrition. Demographic information
(age, education, employment) for both groups is listed in Table 1. The
mean age for the men was the late 20's, and for the women the early 30's.

INSERT TABLE 1 ABOUT HERE

The group was moderately well-educated, with all having finished high
school and the majority with some college. Employment history was

scattered, with a high percentage of unemployed, student, part-time, or miscellaneous kinds of work (e.g., a combined musician/taxpayer). Partly this would be expected for individuals who are able to take 3 months from September to December to attend the retreat.

The Instrument

The Bem Sex-role Inventory is a list of words that have been defined in American culture as socially desirable and stereotypically masculine or socially desirable and stereotypically feminine. Individuals are asked to rate each of these words on a 7-point Likert scale in terms of how well the attributes fit himself (from never or almost never true to always or almost always true). Twenty of the words are stereotypically masculine, 20 of the words are stereotypically feminine (Bem, 1974), and 20 are filler words.

Data Analysis

Each respondent received both a masculinity and a femininity score, and weighted means were developed for the feminine average and masculine average in terms of the proportion of males and females in each category of respondents. Using the median-split procedure, those who scored above the median on the sex-congruent scale and below the median on the sex-incongruent scale were defined as sex-typed; those with the reverse pattern were designated as cross-sex typed; those who scored above the median on both scales were designated as androgynous; and those who scored below the median on both scales were designated as undifferentiated (Bem, 1974, 1977, 1981).

A comparison of all pretest respondents versus pretest respondents completing the posttest gave no significant differences on demographic information (Table 1), median scores and sex-type classification (Table 2), or on means of masculine and feminine words. Therefore, the pretest profile results reported in this manuscript include all 25 pretest responders.

RESULTS

Pretest Profile

As can be seen from Table 2, for the group as a whole (N = 25), there was a fairly even distribution of classification, including 7 undifferentiated, 6 feminine, 6 masculine, and 6 androgynous individuals. For the men, there were 2 androgynous men, 2 undifferentiated men, 5 sex-typed, and 1 cross-sex typed; and for the women there were 4 androgynous, 5 undifferentiated, 3 same-sex typed, and 1 cross-sex typed.

INSERT TABLE 2 ABOUT HERE

However, even though there is a fairly even distribution of individuals across categories, there are some interesting trends in cross-sex-typed differences. As can be seen from Table 3, females had a higher mean score than males on 9 of the 20 masculine words, with willing to take a stand significant ($P \leq .01$).

For the feminine words, in terms of cross-sexed-type differences, there were 4 out of 20 words in which the men had a higher mean score than the women, with no harsh language significant ($P \leq .05$) and the other 3 words including shy, more soft spoken, and loves children.

INSERT TABLE 3 ABOUT HERE

In terms of expected sex-type differences, for the masculine words, the men perceived themselves as significantly more masculine than the women ($P \leq .01$) and significantly more analytical ($P \leq .05$). On the feminine words, the women perceived themselves as significantly more affectionate ($P \leq .01$), feminine ($P \leq .01$), tender ($P \leq .01$), and gullible ($P \leq .01$).

Pre- to Posttest Change

For the group as a whole, there was an increase in self-perception on feminine words (from 5.12 to 5.26) and a decrease in self-perception on the masculine words (from 4.50 to 4.42) (reflected in Table 5). Although nonsignificant, these trends are in the hypothesized direction. If we look at individual words (Table 4), we see that the group as a whole perceived themselves as significantly less independent ($P \leq .05$) and significantly more sympathetic ($P \leq .05$) at posttest. If we look at general trends in the means of individual words, we note that for the masculine words, 6 increased and 13 decreased, and for the feminine

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INSERT TABLE 4 ABOUT HERE

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words, 5 decreased and 14 increased (corrected chi-square = 5.17, 1 df, $P \leq .02$).[3]

INSERT TABLE 5 ABOUT HERE

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[3] It needs to be recognized that this chi-square test, though significant, involves generalizing to the population of items, rather than people.

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Comparing the difference scores of pre- and posttest masculine for the group as a whole using a Wilcoxon matched-pairs sign test, 8 individuals decreased in masculinity, 5 increased; for the feminine scores, 6 decreased and 8 increased (Table 5).

For males only, comparing pre- and posttest scores, we find a slight though nonsignificant decrease in masculine mean scores from pre (4.54) to post (4.45), as well as a slight though nonsignificant decrease in the feminine mean score from 5.11 to 5.04 (see Table 7). Looking at specific words (Table 6) we find no significant changes, but some of interest. Specific masculine words suggested a possible trend for the men to perceive themselves as less assertive, less analytical, less masculine, less individualistic, as well as more self-sufficient, more forceful, and more ambitious. On the feminine words men perceived themselves as less soft-spoken, less shy, and less loyal, as well as more yielding (Table 6). Overall, for the 6 males, 3 increased and 3 decreased their masculinity scores, and 4 decreased and 2 increased their femininity scores (Table 7).

INSERT TABLES 6 & 7 ABOUT HERE

For women only, mean scores on masculine words showed a slight nonsignificant decrease (from 4.46 to 4.38) from pre- to posttest, and on feminine words increased from 5.23 to 5.48.

On the masculine words, women perceived themselves as significantly less independent (P $\leq$ .05). Words approaching significance in the hypothesized direction include less strong personality, less leadership ability, less willing to take a stand, less active as a leader, less

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ambitious, but also in the nonhypothesized direction, more masculine and more competitive. On the feminine words, women perceived themselves as significantly more sympathetic (P $\leq$ .05), significantly more compassionate (P $\leq$ .05), and approached significance on tender and sensitive to others. Overall, for females, 5 decreased on masculinity scores and 2 increased; and 2 decreased on femininity scores and 6 increased (Table 7).

Finally, we used the median from the pretest (masculine 4.62, feminine 5.15) to use the median-split procedure with weighted averages on the posttest, and then ran a Cochran Q test of proportions to determine the change in proportions of classifications among undifferentiated, feminine, masculine, and androgynous. The nonsignificant results are illustrated in Table 8.

INSERT TABLE 8 ABOUT HERE

DISCUSSION

There are several caveats which we need to consider in interpreting the results of this study. First, there is obviously a marked self-selection bias in terms of individuals who attend a 3-month meditation retreat and we need to be quite cautious in generalizing these findings to other populations. Second, there was a marked attrition from pre- to posttest. This is not an uncommon problem in meditation research particularly given the "nonanalytical" demand characteristics of meditation environments. However, this again makes interpretation of findings difficult.

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Third, because of the small N, and large estimates of variability (some-
times as much as 30% of the mean), additional caution is needed.

Given the above cautions, there are some interesting findings which
emerged from the study. First, the findings for the pretest profile,
based on 25 persons' scores, suggest interesting information about
individuals attracted to this meditation retreat. If we compare the
pretest means of men and women from this study (Table 7) with the normative
scores of Bem's Stanford and Foothill students (Bem, 1974), we see that
the profiles of the females in this study are slightly less endorsing in
their perceptions of masculine words and slightly more endorsing of feminine
words than Bem's population, suggesting that a more stereotypically feminine
woman was attracted to the retreat (Table 9).

INSERT TABLE 9 ABOUT HERE

Conversely, the pretest profile of the men attracted to this retreat was
considerably masculine and more feminine in their endorsement of sex-
stereotypic words than in Bem's study, suggesting an almost feminine (cross-
sexed) profile of the men attracted to meditation.

Without having assessed subject's expectations prior to the retreat,
it is not possible to determine unequivocally what individuals wanted from
the retreat. However, the demand characteristics of the retreat are clear--
a high value on compassion, being, nondoing, stillness, immovable wisdom.
Therefore, without attempting to overgeneralize, it appears that this pretest
profile provides some indirect support for the view of a certain overlap
between stereotypically feminine characteristics and an Eastern cultural ideal.

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This support comes from clear self-selection which occurred in that the

expectation effects/demand characteristics of a Buddhist (Vipassana)

meditation retreat, couched within an Eastern philosophical value system

appeared to attract individuals (particularly men) who perceived them-

selves as "more feminine" than a normative sample. Clearly however,

the above consideration needs to be seen as only suggestive at this point,

for the comparison sample was a college-age population.

Regarding the second finding on the changes from pre- to posttest (N = 15)

for the group as a whole, there was a trend for masculine words to decrease

and feminine words to increase. Individuals perceived themselves as

significantly less independent (masculine) and more sympathetic (feminine).

Although these changes are not large, the trends are suggestive and in most

cases in the hypothesized direction which, considering the small N and

size of standard deviations, is of interest. Further inspection of the

data suggests that, although both men (N = 6) and women (N = 9) overall

decreased in masculine scores, only the women increased overall in feminine

scores, with the men decreasing slightly. Females, already high in feminine

score, became even higher--with significant increases in endorsement of

the words sympathetic and compassionate. However, some feminine words

did decrease (e.g., gullible). For the females, there was also an overall,

though nonsignificant, decrease in masculine words (including significantly

less independent), although some masculine words such as competitive,

masculine, did increase. For the males, there was a slight overall decrease

in masculine words (less analytical, less assertive), but some masculine

words did increase (more forceful, more self-sufficient). Further, while

there was an overall decrease in endorsement of feminine words (less shy, less soft spoken), again some feminine words did increase (e.g., more yielding).

It is somewhat difficult to know how to interpret these findings for males and females without having assessed expectations prior to the study. The overall changes themselves, though not large, suggest that women become more stereotypically feminine (increase in feminine words, decrease in masculine words), and that the men become somewhat more undifferentiated (decrease in feminine words, decrease in masculine words).

However we need to be careful what interpretation we put on these findings. Previous research has suggested that the more undifferentiated the individual, the lower the self-esteem (Spence, Helmreich, & Stapp, 1975). However, we may run into difficulties in assuming that since the words on the Bem inventory are defined as socially desirable in American culture, they would a priori be socially desirable within the context of a meditation retreat. For example, whereas analytical is considered socially desirable for males on the Bem inventory, there is a demand characteristic at a retreat suggesting that reliance on analysis may hinder meditation. Therefore, for males to decrease in their self-perception of the masculine word "analytical" may in fact be positive. Further, we need to be careful of any pathologizing interpretation of the findings. Even though the 6 men's overall feminine score decreased slightly from the pre- to the posttest, it is still a high "feminine" score compared to Bem's 1974 normative sample. There do not appear to be any difficulties for the men in terms of self-identity of sex-role identification, as the men still perceived themselves as significantly more masculine than the women.

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If we look more carefully at the individual variation in words, we see that the changes in both men and women, although they may follow certain trends, were not exclusively along sex-role stereotyped lines. And that in fact, certain changes appeared to cut across sex-stereotyped lines. For example, men felt more self-sufficient (increase in a masculine word[4]) and more yielding (increase in a feminine word). Men also felt less analytical (decrease in masculine word) and less shy (decrease in a feminine word). However, from the perspective of the meditation retreat, it may be that these changes are all quite desirable, even though the first two reflect an increase in masculine and feminine, the second two reflect a decrease in masculine and feminine words. Women felt more competitive (increase in masculine word) and more sensitive to others (increase in feminine word) at the end of the retreat. Future research should determine how individuals felt about these changes, e.g., how do men feel about being less analytical; how do women feel about perceiving themselves as more competitive. It would be important to determine what individuals who are high on feminine qualities (male or female) are looking for from the meditation retreat and how they feel about what they obtain. This information could help provide further clarification of a "balance" theory of psychological health, i.e., are certain individuals trying to develop the softer, more feminine skills from meditation, and are others trying to develop more a sense of self-sufficiency and self-reliance? Or both? This information could also help us determine whether there may be adverse effects in that individuals who are already quite high on certain qualities, may want to become even more so, and may become frustrated in the task.

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4 Perhaps masculine qualities such as self-sufficiency in many ways relate to picking a task such as a meditation retreat for 3 months, sticking to that task, and accomplishing it.

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Another area that future research should investigate is the relation-ship between changes in self-perception, and actual changes in overt behavior. For example, men self-rating of shy. However, if we look at the nature and structure of the retreat, we note that there is no verbal contact allowed at the retreat among participants. Therefore, we don't really know whether the men in fact became less shy or, because eye contact and verbal behavior were not allowed, they were in a sufficiently structured situation so that they did not feel shy. How much this would translate to actual overt behavior following the retreat is an empirical questions which needs to be investigated.

A note also needs to be made about the subjects of this study, and how much we can generalize from this sample to a population at large. It may be quite a unique individual who takes a 3-month meditation retreat. On the one hand, it requires an enormous commitment of time, dedication, and energy. Further, it may take somebody who is in a transitional point in life and who has resources and is able to take the time off for this type of intensive retreat. As can be seen from the demographic information (Table 1), there were a high percentage of unemployed individuals in this study. Finally, there may be an additional source of bias in subject selection in that meditation traditions teach one how not to get caught and bound by words and labels, discrimination, and ordinary awareness (Brown, 1977), and therefore, paper-and-pencil test-taking may have seemed distasteful and anathema to what they had learned in the retreat.

As a summary, to refine the findings of this study, which at this point, must be considered only tentative and suggestive, future studies would need to assess the following: (a) expectations of individuals prior to the

meditation retreat (i.e., what they are hoping to get out of it);

(b) satisfaction at the end of the meditation retreat in order to

determine whether the changes that have occurred are those which the

individuals themselves perceive as desirable; (c) the development and

utilization of another assessment test which would be more congruent

with the value system of the meditation disciplines, including both

undesirable and desirable qualities. This test could draw from the

literature of positive socially desirable qualities for males and females,

as well as undesirable qualities (Holahan & Spence, 1980; Spence, Helmreich,

& Holahan, 1979). (d) There should be follow up to see if the changes which

occurred as a result of the retreat generalize back to the real world

situation; and (e) some type of control group (e.g., individuals who attend

the retreat but do not meditate, such as the staff) to determine how much

of the variance of change is due to the meditation itself, how much to the

setting in which the retreat occurs.

In terms of interpretation of the above findings, we also should be

cautious in drawing conclusions about the pretest profile. Specifically,

it is not possible to know whether this pretest profile is related to prior

meditation practice or self-nature independent of prior practice. Future

studies should correlate length of practice with scores in the profile.

Another study could also utilize a cross-sectional design to determine

how beginning, somewhat experienced, and quite experienced meditators score

on masculine and feminine scores.

17.

NOTES

1. Shapiro, D., Peper, E., Harr, M., and Carrere, S. Toward a four-quadrant model of self-control: Positive and negative aspects of assertiveness and yielding. Under editorial review.

2. Shapiro, D. Reliability of a four-quadrant model of self-control: Ratings by experts in Type A behavior--health psychology; East/West psychology; and sex-role psychology. Under editorial review.

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TABLE 1:   Demographic Information

	Took Pretest Only		Took Pre- and Posttest	
	Men 12	Women 13	Men 6	Women 9
Age Range	21-53 yr.	23-45 yr.	21-39 yr.	24-45 yr.
$\bar{x}$:	29.5	31.3	27.3	31.6
Education	f %	f %	f %	f %
High school				(1)11
Some college			(1)16	(4)44
B.A.	(2)16	(1) 7	(1)16	(2)22
Post B.A.	(2)16	(2)15.4	(2)33	(1)11
No Response	(8)66	(10)76.9	(2)33	(1)11
Employment				
Unemployed	(3)25	(3)15.4	(2)33	(3)33
Student	(3)25	(3)15.4	(2)33	(1)11
Retired		(1) 7.7		(1)11
Clerical/part time		(2)19.5		(2)22
Educator	(1) 8.3	(1) 7.7	(1)16	
Therapist	(1) 8.3	(1) 7.7		(1)11
Artist	(1) 8.3	(2)15.4	(1)16	
Mixed	(3)25			(1)11

TABLE 2:   Sex-typed Classification Based on Pretest Scores

	All Pretest Responders			Pretest Responders Completing Posttest		
	Male	Female	Total	Male	Female	Group
N	12	13	25	6	9	15
Undifferentiated	2	5	7	0	3	3
Feminine	3	3	6	2	3	5
Masculine	5	1	6	3	1	4
Androgynous	2	4	6	1	2	2

Masculine median = 4.55   Masculine median = 4.62
Feminine median = 5.16   Feminine median = 5.15

TABLE 3: Comparison of Males and Females on Masculine and Feminine Words: All Pre Test Responders.

Masc. Words	Men = 12 Mean	S.D.	Women = 13 Mean	S.D.	Males = 12 Mean Rank	Female = 13 Mean Rank	Created for ties X2	P
1. self-reliant	5.83	.94	5.54	.97	14.00	12.08	.493	.483
4. defends beliefs	4.66	1.30	4.31	1.93	13.67	12.38	.201	.654
7.independent	5.67	.89	5.54	1.13	14.07	13.92	.003	.960
10. athletic	4.67	1.72	4.23	1.88	13.92	12.15	.367	.545
13. assertive	4.33	1.07	4.83	1.19	11.13	13.88	.998	.318
16. strong personality	4.83	1.11	5.31	.95	11.92	14.00	.590	.443
19.forceful	3.42	1.08	3.92	1.44	11.50	14.38	1.061	.303
22.analytical	5.83	.94	4.69	1.18	16.54	9.73	5.818	.016*
25. leadership ability	4.58	1.44	4.69	1.25	13.04	12.96	.001	.978
28.willing to risk	5.25	.97	5.15	.80	13.29	12.73	.040	.841
31. decisions easily	3.83	1.64	3.92	1.38	12.88	13.12	.007	.934
34.self-sufficient	5.33	.98	5.00	1.47	13.79	12.27	.292	.589
37.dominant	3.33	1.07	4.08	1.38	10.67	15.15	2.584	.108
40.masculine	5.42	.69	2.54	.97	19.38	7.12	18.167	.000*
43.willing take stand	4.25	.97	5.62	.96	8.88	16.81	8.502	.004**
46.aggressive	2.92	1.16	3.77	.93	10.25	15.54	3.539	.060
49.acts a leader	3.67	1.15	4.08	.95	12.00	13.92	.466	.495
52.individualistic	5.42	.79	5.08	1.12	14.25	11.85	.751	.386
55. competitive	3.50	1.57	3.08	1.50	14.29	11.81	.750	.387
58. ambitious	3.83	1.99	3.38	1.56	14.04	12.04	.477	.490

Fem. Words								
2.yielding	4.42	1.08	5.00	.97	11.67	14.23	.904	.342
5.cheerful	4.91	.94	5.62	.96	9.95	14.65	2.903	.088
8. shy	4.33	.78	3.62	1.12	15.14	12.77	.662	.416
11.affectionate	5.17	.72	6.15	.80	8.75	16.92	8.833	.003*
14.flatterable	3.58	1.16	3.77	1.36	12.04	13.88	.429	.512
17.loyal	5.92	.67	6.15	.99	11.58	14.31	.977	.323
20.feminine	3.17	1.27	5.08	1.50	8.96	16.73	7.385	.007*
23. sympathetic	5.00	.74	5.46	.88	11.00	14.85	1.931	.165
26. sensitive to others	5.33	.78	5.31	1.38	13.17	12.85	.013	.910
29.understanding	5.50	.52	5.92	.95	11.00	14.85	1.969	.161
32.compassionate	5.08	.69	5.46	1.33	11.42	14.46	1.153	.283
35. soothe hurt feeling	5.08	1.24	5.92	1.32	10.50	15.31	2.826	.093
38.soft-spoken	5.25	1.14	4.38	1.45	15.38	10.81	2.521	.112
41. warm	5.33	.79	5.85	.80	10.75	15.08	2.664	.103
44. tender	5.08	.69	5.85	.99	10.08	15.69	4.079	.043*
47. gullible	3.42	1.56	4.69	1.03	9.79	15.96	4.596	.032*
50. childlike	4.17	.83	4.23	1.09	12.63	13.35	.073	.787
53. no harsh language	5.58	.90	3.85	2.08	16.21	10.04	4.598	.032**
56. loves children	5.58	1.24	4.92	1.71	14.38	11.73	.846	.358
59. gentle	5.58	.51	5.93	.76	11.42	14.46	1.315	.252

* = Significant differences in a sex-typed direction

** = Significant differences in a cross-sex typed direction.

TABLE 4: Comparison of Pre and Post Tests for the Group as a Whole.

Masc. Words	Pre Test Mean	S. D.	Post Test Mean	S. D.	- rank	mean	+ rank	mean	Z	2-tailed P
1. self-reliant	5.53	.99	5.47	.99	3	2.83	2	3.25	- .270	.787
4. defends beliefs	4.47	1.92	4.60	1.80	4	5.00	5	5.00	- .296	.767
7. independent	5.67	.90	5.27	1.22	5	3.00	0	.00	-2.023	.043 *
10. athletic	4.40	1.68	4.13	1.68	7	5.21	3	6.17	- .917	.359
13. assertive	4.67	1.35	4.60	1.30	2	2.00	1	2.00	- .535	.593
16. strong personality	5.13	1.25	4.87	1.41	6	5.00	3	5.00	- .889	.374
19. forceful	3.73	1.33	3.93	1.16	3	5.50	6	4.75	- .711	.477
22. analytical	5.20	1.32	5.07	1.03	4	3.25	2	4.00	- .524	.600
25. leadership ability	4.87	1.36	4.60	1.35	5	3.50	1	3.50	-1.468	.142
28. willing to risk	5.27	.88	4.87	.83	6	5.50	3	4.00	-1.244	.214
31. decisions easily	4.07	1.49	3.93	1.28	5	3.50	2	5.25	- .592	.554
34. self-sufficient	4.87	1.36	5.20	1.42	3	4.00	5	4.80	- .840	.401
37. dominant	3.80	1.37	3.80	1.08	4	4.50	4	4.50	.000	1.000
40. masculine	3.80	1.57	4.00	1.20	3	4.00	5	4.80	- .840	.401
43. willing take stand	5.13	1.06	4.87	1.25	6	6.00	4	4.75	- .866	.386
46. aggressive	3.40	.91	3.47	.99	4	5.13	5	4.90	- .237	.813
49. acts a leader	4.13	1.19	3.93	1.28	5	4.00	2	4.00	-1.014	.310
52. individualistic	5.13	1.06	4.93	1.28	6	5.83	4	5.00	- .764	.445
55. competitive	3.27	1.44	3.53	1.64	3	3.83	5	4.90	- .910	.363
58. ambitious	3.40	1.50	3.20	1.26	4	4.38	3	3.50	- .592	.554
Fem. Words										
2. yielding	4.60	1.12	4.73	.96	2	3.50	4	3.50	- .734	.463
5. cheerful	5.36	.93	5.27	1.10	3	3.50	3	3.50	.000	1.000
8. shy	3.73	1.09	3.67	1.18	5	5.00	4	5.00	- .296	.767
11. affectionate	5.67	.90	5.93	1.22	2	4.50	6	4.50	-1.260	.208
14. flatterable	3.73	1.22	4.33	1.54	4	5.00	8	7.25	-1.490	.136
17. loyal	5.93	.88	5.80	1.08	4	3.25	2	4.00	- .524	.600
20. feminine	4.20	1.26	4.26	1.44	4	5.00	5	5.00	- .296	.767
23. sympathetic	5.20	.94	5.73	.88	1	4.50	8	5.06	-2.132	.033*
26. sensitive to others	5.40	1.18	5.60	.99	1	3.00	4	3.00	-1.214	.255
29. understanding	5.73	.96	5.73	.80	3	3.50	3	3.50	.000	1.000
32. compassionate	5.06	1.16	5.47	1.06	2	4.50	7	5.14	-1.599	.110
35. soothe hurt feeling	5.67	1.50	5.80	1.15	4	4.50	5	5.40	- .533	.594
38. soft spoken	4.67	1.50	4.47	1.60	5	4.00	2	4.00	-1.014	.310
41. warm	5.53	.92	5.73	1.16	3	5.00	6	5.00	- .889	.374
44. tender	5.53	.99	5.87	.92	1	4.00	6	4.00	-1.690	.091
47. gullible	3.93	1.49	3.60	1.45	4	5.13	3	2.50	-1.099	.272
50. childlike	4.13	1.13	4.47	.92	2	6.50	6	3.83	- .700	.484
53. no harsh language	4.53	1.96	4.87	1.85	3	3.00	4	4.75	- .845	.398
56. loves children	5.13	1.68	5.20	1.52	2	3.00	3	3.00	- .405	.686
59. gentle	5.73	.70	6.00	.93	2	6.75	7	4.50	-1.066	.286

N = 15

* = P < .05

TABLE 5 :   Comparison of Masculine and Feminine Words for Group
              From Pre to Post

	Masculine Words		Feminine Words	
	Pretest	Posttest	Pretest	Posttest
Group (N = 15) $\underline{M}$ =	4.50	4.42	5.12	5.26
S.D.	.76	.73	.42	.47

No. Words showing decrease in mean from pre to posttest	13	5
No. Words showing increase in mean from pre to posttest	6	14

corrected $X2 = 5.17$, df = 1; P = .02

Rank Comparison Change Scores on Masculine and Feminine Dimensions from Pre to Post
Group.

	- ranks	mean	+ ranks	mean	Z	2-tailed P
Masc. words	8	7.13	5	6.80	- .804	.4
Fem. words	6	5.92	8	8.69	-1.067	.2

TABLE 6: Comparison of Pre and Post Scores

	Men N = 6							Women N = 9					
Masc. Words	- Rank	Mean	+ Rank	Mean	Z	2-tailed P		- Rank	Mean	+ Rank	Mean	Z	2-tailed P
1. self-reliant	0	.00	0	.00	.000	1.000		3	2.83	2	3.25	- .270	.787
4. defends beliefs	1	1.00	0	.00	-1.000	.317		3	4.00	5	4.80	- .840	.401
7. independent	0	.00	0	.00	.000	1.000		5	3.00	0	.00	-2.023	.043*
10. athletic	4	3.00	1	3.00	-1.214	.225		3	2.83	2	3.25	- .270	.787
13. assertive	2	1.50	0	.00	-1.342	.180		0	.00	1	1.00	-1.000	.317
16. strong personality	2	2.00	2	3.00	- .365	.715		4	3.25	1	2.00	-1.483	.138
19. forceful	1	2.00	3	2.67	-1.095	.273		2	3.75	3	2.50	.000	1.000
22. analytical	3	2.00	0	.00	-1.604	.109		1	1.50	2	2.25	- .802	.423
25. leadership ability	2	2.00	1	2.00	- .535	.593		3	2.00	0	.00	-1.604	.109
28. willing to risk	3	2.67	1	2.00	-1.095	.273		3	3.33	2	2.50	- .674	.500
31. decisions easily	2	1.50	0	.00	-1.342	.180		3	2.50	2	3.75	.000	1.000
34. self-sufficient	0	.00	2	1.50	-1.342	.180		3	3.00	3	4.00	- .314	.753
37. dominant	1	2.00	2	2.00	- .535	.593		3	3.00	2	3.00	- .405	.686
40. masculine	2	1.50	0	.00	-1.342	.180		1	3.00	5	3.60	-1.572	.116
43. willing take stand	1	3.50	3	2.17	- .548	.584		5	3.70	1	2.50	-1.677	.093
46. aggressive	1	2.00	2	2.00	- .535	.593		3	3.50	3	3.50	.000	1.000
49. acts a leader	1	1.50	1	1.50	.000	1.000		4	3.00	1	3.00	-1.214	.225
52. individualistic	5	3.50	1	3.50	-1.468	.142		1	4.00	3	2.00	- .365	.715
55. competitive	2	1.50	1	3.00	.000	1.000		1	4.00	4	2.75	- .944	.345
58. ambitious	0	.00	2	1.50	-1.342	.180		4	3.13	1	2.50	-1.348	.178

Fem. Words													
2. yielding	1	2.50	3	2.50	- .913	.361		1	1.50	1	1.50	.000	1.000
5. cheerful	1	1.00	0	.00	-1.000	.317		2	3.00	3	3.00	- .405	.686
8. shy	3	2.00	0	.00	-1.604	.109		2	3.50	4	3.50	- .734	.463
11. affectionate	1	2.00	2	2.00	- .535	.593		1	3.00	4	3.00	-1.214	.225
14. flatterable	2	1.50	2	3.50	- .730	.465		2	4.00	6	4.67	-1.400	.161
17. loyal	3	2.00	0	.00	-1.604	.109		1	2.50	2	1.75	- .267	.789
20. feminine	1	2.00	2	2.00	- .535	.593		3	3.50	3	3.50	.000	1.000
23. sympathetic	1	1.50	2	2.25	- .802	.423		0	.00	6	3.50	-2.201	.028 *
26. sensitive to others	1	1.00	0	.00	-1.000	.317		0	.00	4	2.50	-1.826	.068
29. understanding	1	2.00	2	2.00	- .535	.593		2	2.00	1	2.00	- .535	.593
32. compassionate	2	2.00	1	2.00	- .535	.593		0	.00	6	3.50	-2.201	.028 *
35. soothe hurt feelings	1	2.50	3	2.50	- .913	.361		3	2.50	2	3.75	.000	1.000
38. soft-spoken	2	1.50	0	.00	-1.342	.180		3	3.00	2	3.00	- .405	.686
41. warm	1	1.50	1	1.50	.000	1.000		2	4.00	5	4.00	-1.014	.310
44. tender	1	2.00	2	2.00	- .535	.593		0	.00	4	2.50	-1.826	.068
47. gullible	0	.00	1	1.00	-1.000	.317		4	4.25	2	2.00	-1.363	.173
50. childlike	1	4.00	3	2.00	- .365	.715		1	3.00	3	2.33	- .730	.465
53. no harsh language	1	1.50	1	1.50	.000	1.000		2	2.00	3	3.67	- .944	.345
56. loves children	1	1.00	0	.00	-1.000	.317		1	2.50	3	2.50	- .913	.361
59. gentle	1	2.00	2	2.00	- .535	.593		1	6.00	5	3.00	- .943	.345

* = P < .05

TABLE 7:   Mean Masculine and Feminine Scores (Pre and Post) for Males and Females.

	Masc.		Fem.	
	Pre	Post	Pre	Post
Males N = 6	$\bar{x}$ = 4.55	4.45	5.11	5.04
	SD = .88	.75	.26	.27
Females N = 9	$\bar{x}$ = 4.46	4.38	5.23	5.48
	SD = .66	.75	.53	.53

	− rank	mean	+ rank	mean	Z	2-tailed P
Male Masc.	3	5	3	2	− .943	.345
Fem.	4	3.13	2	3.25	− .839	.402
Fem. Masc.	5	3.50	2	5.25	− .592	.554
Fem.	2	4.00	6	4.67	−1.400	.161

TABLE 8: Classifications of Subjects, Pre- and Posttest on Dimensions of
Undifferentiated, Feminine, Masculine, and Androgynous.

	Males		Females		Group	
	Pre	Post	Pre	Post	Pre	Post
Undifferentiated	0	1	3	1	3	2
Feminine	2	2	3	5	5	7
Masculine	3	2	1	1	4	3
Androgynous	1	1	2	2	3	3

TABLE 9:   Means of Males and Females from this Study Compared to
            Bem's 1974 Sample.

		This Study	Stanford (Bem, 1974)	Foothill
Males	Masculine Words	4.54	4.97	4.96
	Feminine Words	5.11	4.44	4.62
Females	Masculine Words	4.46	4.57	4.55
	Feminine Words	5.23	5.01	5.08