

## The Relationship Between Androgyny and Subjective Indicators of Emotional Well-Being

David Lubinski, Auke Tellegen, and James N. Butcher  
University of Minnesota

The objective of this study ( $N = 176$ ) was to evaluate (a) the construct validity of the revised Short Bem Sex-Role Inventory (BSRI) with respect to measures of psychological well-being; (b) the validity of the concept of androgyny conceived as an intrinsically interactive (rather than simply additive) concept, endowed as such with "surplus" meaning; and (c) the validity of the traditional assumption that it is the masculine male and feminine female who typify subjective well-being. The three hypotheses were tested concurrently by employing a hierarchical multiple regression analysis with interaction terms. Results across measures of well-being, stress reaction, and alienation taken from the Differential Personality Questionnaire (DPQ), provided only partial support for Bem's scales as markers of subjective well-being, but no support for androgyny as a concept in its own right with predictive properties distinct from femininity and masculinity. Finally, the results of a factor analysis indicate that the M and F scales of the BSRI occupy quite different locations in the space defined by certain higher-order personality dimensions. Implications for further studies of androgyny and other "fulfillment" or "self-actualization" concepts are also discussed.

The view that masculinity and femininity are opposite poles of a single continuum has been questioned in recent years (e.g., Constantinople, 1973). Thus, Bem (1974) has proposed that masculinity and femininity be treated as distinct and relatively independent dimensions. Proceeding on this basis, she has constructed an inventory (Bem Sex-Role Inventory or BSRI) that classifies individuals into one of four types: androgynous, masculine, feminine, and undifferentiated.

Bem (1974) also rejects the traditional assumption that it is the masculine male and feminine female who typify psychological health. Rather, she believes that androgynous individuals of either sex are the epitome of psychological health.

Bem's theory incorporates a postulate proposed by both Kagan (1964) and Kohlberg (1966)—that sex-typed individuals have an internalized sex role standard and are motivated to maintain consistency between their behavior and this standard. The sex-typed individual accomplishes this by sup-

pressing behaviors that violate the sex role standard. Thus, the feminine sex-typed person would inhibit behaviors that are stereotypically masculine, and the masculine sex-typed person would inhibit behaviors that are stereotypically feminine.

Expanding on this idea, Bem (1974, 1975, 1979a) suggests that individuals free of this internalized motive to maintain a sex-appropriate behavioral repertoire should be more adaptive and psychologically healthier because they are less restricted in the range of behaviors available to them in various situations. These individuals are termed "psychologically androgynous," since their self-concept is supposedly less constraining and therefore allows them to engage more freely in both masculine and feminine behavior.

Bem (1975, 1979a) has formulated the following hypotheses on the basis of these assumptions: (a) In situations that warrant adaptive behavior that is stereotypically masculine, androgynous and masculine sex-typed individuals will adapt (i.e., perform the task) equally well; feminine sex-typed individuals will be less adaptive. (b) In situations warranting behavior that is stereotypically feminine, androgynous and femi-

---

Requests for reprints should be sent to Auke Tellegen, Department of Psychology, University of Minnesota, Elliott Hall, 75 East River Road, Minneapolis, Minnesota 55455.

nine sex-typed individuals will adapt equally well; masculine sex-typed individuals will be less adaptive. (c) Androgynous individuals are psychologically healthier than either masculine or feminine sex-typed individuals (see, also, Bem & Lenney, 1976).

Thus, Bem proposes that androgyny is related to two classes of behaviors: adaptiveness and psychological health. Moreover, Bem (1979a) suggests that in isolation, extreme degrees of masculinity and femininity become negative and even destructive, whereas in combination masculinity and femininity "temper" each other, one canceling out the more negative exaggerations of the other. Bem and some other investigators (e.g., Bem, 1979a; Kaplan & Bean, 1976) have not only adopted Bem's theory of androgyny as a "new model of mental health," but have also suggested that the BSRI be used to classify individuals with respect to psychological health. However, the hypothesis that the masculinity and femininity scales of the BSRI are related to measures of psychological health and that Bem's typology has utility for predicting psychological health has so far not received much empirical support. In fact, some investigators have obtained results incompatible with Bem's theory. For example, Jones, Chernovetz, and Hansson (1978) tested the hypothesis that psychological androgyny permits greater behavioral flexibility and consequently leads to better adjustment. On the basis of their findings, they conclude that, contrary to the hypothesis, for both males and females, flexibility and adjustment tended to be associated with masculinity rather than with androgyny. Also, Ginn (1975), using a measure of self-actualization, the Personal Orientation Inventory, did not find androgynous subjects to be different from either masculine or feminine subjects. In light of these incongruities and recent criticisms of the BSRI and Bem's theory of androgyny (e.g., Locksley & Colten, 1979; Pedhazur & Tetenbaum, 1979), Bem has refined her measure (the Short BSRI; Bem, 1979b).

The purpose of this study is to explore the relationships between the refined BSRI and indicators of psychological health, with a particular emphasis on adequately scrutiniz-

ing and representing the nature of these relationships. Thus, rather than rely on the dichotomous classifications of subjects (as "high" or "low" feminine and masculine, respectively) employed in Bem's typology and lose a great deal of information, we have used the original Femininity and Masculinity scores. Second, we set out to conduct a more cogent evaluation of the distinctive meaning and necessity of a concept such as androgyny by treating it as an interactive concept. The following illustration may be useful in clarifying our approach.

Suppose that both femininity and masculinity are associated with certain positive as well as with certain negative attributes of "interpersonal effectiveness." Suppose also that for both traits the negative attributes combine negatively with positive ones in a quasilinear manner to form a composite that might be reflected as such in, say, observers' ratings of the individual's overall or "net" interpersonal effectiveness. Let us further assume (to simplify matters) that both the positive and negative qualities are different ones for the two traits—in other words, that the two traits are essentially independent.

Now, if femininity and masculinity, in turn, were to combine into an essentially additive (linear) manner, then for any individual combination of femininity and masculinity scores (whether these form an androgynous configuration or not), net interpersonal effectiveness, insofar as it is related to femininity or masculinity, could be adequately estimated by an additive combination of the two scores. Thus, given an additive structure, being androgynous would entail no behaviors that could not be adequately accounted for in terms of the individual femininity and masculinity components. Given this *predictive* redundancy under an additive model, androgyny would also appear to be *conceptually* redundant.

On the other hand, if the simple additive model were empirically shown to be inadequate because of certain interactions involving femininity and masculinity, then an argument could be made in favor of androgyny as a concept in its own right. For example, as we saw earlier, Bem (1979a) has suggested that femininity and masculinity temper each other so that negative manifesta-

tions of one tend to cancel out those of the other. If, in our present example, this means that positive interpersonal correlates of femininity and masculinity continue to combine additively but that negative tendencies associated with the two inhibit each other (rather than summate as under a linear model), then the net interpersonal effectiveness of the androgynous person would be particularly great and would combine the positive attributes of high femininity and high masculinity, but now unimpeded by the negative manifestations present when one has a high standing on only one of these two traits.

One could imagine that in terms rated in Bem's BSRI the "assertiveness" of a merely masculine person might have a self-defeating, abrasive quality, and that the "gentleness" of a purely feminine person might have an element of ineffectual passivity. Both these people might show serious limitations in how they handle a difficult and delicate interpersonal situation. By contrast, again using terms from the BSRI an androgynous individual might deal with the same situation more effectively by virtue of being "forceful" and "assertive," but at the same time being "sensitive to the need of others" and "gentle."

Under these conditions a linear prediction would no longer be adequate. It would *underpredict* the overall effectiveness of androgynous individuals because of a failure to take the interaction of femininity and masculinity into consideration.

These considerations led us to adopt the view that androgyny, if regarded as a concept carrying *surplus meaning* relative to the concepts of femininity and masculinity, requires for its empirical corroboration a demonstration of interactions of the type just described.

For our data analyses we have made use of multiple regression techniques, an approach recently also reconsidered by Bem (1977). In view of the preceding discussion, our regression model differs from the traditional one. The traditional simple linear regression model, when applied to the case of femininity and masculinity as predictors, would specify an equation of the following

form:

$$\hat{Y} = B_1M + B_2F + A, \quad (1)$$

where  $\hat{Y}$  is the predicted value of some criterion variable  $Y$  (for example, a measure of psychological health);  $M$  and  $F$  represent Bem's masculinity and femininity scales, respectively;  $B_1$  and  $B_2$  are their respective regression coefficients; and  $A$  is a constant. But to capture the critical ( $M \times F$ ) interaction, it is necessary to add a third term to Equation 1,  $B_3(M \times F)$ , the product of  $M$  and  $F$  weighted by the regression coefficient  $B_3$ :

$$\hat{Y} = B_1M + B_2F + B_3(M \times F) + A. \quad (2)$$

Furthermore, to obtain a true measure of the  $M \times F$  interaction and also test the validity of the traditional assumption that it is the masculine male and feminine female who typify psychological health, sex of subject will be added as a third main effect and in interaction with femininity and masculinity. Our rationale for these additional terms is as follows.

First, if sex of subject were not added as a third main effect, the  $M \times F$  interaction might absorb some variance due to sex differences that would compromise its interpretability. This difficulty can be avoided by entering in hierarchical fashion masculinity, femininity, and sex of subject first, thus extracting first the variance accounted for by these three predictors and leaving the  $B_4(M \times F)$  interaction term to represent a "pure" measure of its effect.

In addition, two interaction terms involving gender will be computed:  $B_5(M \times S)$  and  $B_6(F \times S)$ . These two terms will allow us to test the validity of the alternative and traditional assumption that it is the masculine male and feminine female who typify psychological health. If this traditional assumption is correct, both  $B_5(M \times S)$  and  $B_6(F \times S)$  should be statistically significant when measures of psychological health are the criterion variables.<sup>1</sup>

<sup>1</sup> That is, if gender were coded: females = 2, males = 1, as it is in this study, we would expect  $F \times$

Hence, our final regression equation will have the following form:

$$\hat{Y} = B_1M + B_2F + B_3S + B_4(M \times F) + B_5(M \times S) + B_6(F \times S) + A. \quad (3)^2$$

Recently, Spence and Helmreich (1979a) have also mentioned Equation 2 during a discussion of the median split method (on which researchers investigating androgyny have relied thus far), for typological classification. Spence and Helmreich (1979a, p. 1035) contend that, with respect to the median split method, it has been their intent to

provide a conceptual heuristic scheme that will reveal, in a simple and easily communicable form, the nature of the conjoint influence of M and F on the criterion variable. Assuming that this method is properly used, more complex analyses, including regression techniques, should provide no new conceptual information.

Spence and Helmreich (1979b), in a thoughtful discussion of a number of different possible relationships between F and M and other variables, go even further, suggesting that to test for all possible interactions by "mechanical" application of a step-wise multiple regression model could produce misleading results.

We do not wholly concur with this assessment. Poorly conceived regression analyses can be misleading. But carefully thought out methods are now available (Cohen & Cohen, 1975). In the present case, as pointed out earlier, the proposed regression analysis is preferable because it utilizes the original Femininity and Masculinity scores and does not involve the loss of information resulting from the use of a typology based on dichotomies. Second, we do not introduce the  $M \times F$ ,  $F \times S$ , and  $M \times S$  interaction terms "mechanically" or just to highlight the formal correspondence between regression analysis and the analysis of variance, but because of the specific theoretical signifi-

cance of each of these interactions in the present context, as explained above. And the particular nature of each significant interaction can be determined by plotting the appropriate regression lines.

## Method

### Subjects

A total of 176 college students (88 males and 88 females), were recruited from introductory psychology classes and a number of other undergraduate classes at the University of Minnesota. Only subjects under 30 years of age were included in the sample.

### Procedure

Students were group-administered a test battery consisting of two personality inventories: The Bem Sex-Role Inventory and five scales taken from the Differential Personality Questionnaire (Tellegen, Note 1). A brief description of the two measures follows:

*The Short BSRI.* The Bem Sex-Role Inventory consists of two 10-item scales—masculinity and femininity—and 10 filler items. The BSRI treats masculinity and femininity as independent dimensions and classifies individuals as *androgynous*, *masculine*, *feminine*, or *undifferentiated*. Individuals scoring above the medians on both scales are classified as androgynous, whereas individuals scoring below the medians on both scales are classified as undifferentiated. Sex-typed individuals are those who score high on one scale and low on the other. Thus, individuals scoring above the median on the masculinity scale but below the median on the femininity scale are typed masculine, whereas individuals scoring above the median on the femininity scale but below the median on the masculinity scale are typed feminine. Bem and Watson (Note 2) have suggested that researchers determine the medians on their specific samples and use these for research purposes. Researchers are encouraged to determine these medians using the total sample (males and females combined).

*The DPQ.* This study employed five scales taken from the Differential Personality Questionnaire or DPQ (Tellegen, Note 1). This inventory has been developed in a series of converging factor analytic studies designed to bring about, in an iterative manner, the clarification

<sup>2</sup> A third term could have been added to Equation 3 that would exhaust all possible interactions that may be derived from the main effects—namely,  $B_7(M \times F \times S)$ . Although this three-way interaction has no apparent theoretical significance in the present context, it was computed for all three dependent measures employed in this study and in each case was not found to be significant. For a detailed discussion and exposition of regression analyses using interaction, the reader is referred to Cohen's work (e.g., Cohen, 1978; Cohen & Cohen, 1975).

S to be positively correlated with measures of psychological health, and  $M \times S$  to be negatively correlated with measures of psychological health *after* their constituents (M, F, and S) have been partialled out. Also, if only this traditional assumption is correct,  $M \times F$  should not display a significant interaction.

of a set of major self-descriptive dimensions. The five scales included in the study can be described as follows: *Well-Being* (high scorers describe themselves as happy, optimistic, leading interesting and exciting lives); *Stress Reaction* (high scorers describe themselves as easily upset, inclined to worry, nervous, and tense); *Alienation* (high scorers describe themselves as taken advantage of, treated unfairly, and victimized); *Aggression* (high scorers express readiness to strike back when wronged, to hurt others for own advantage); *Harm Avoidance* (high scorers indicate they avoid rather than seek physically dangerous forms of excitement). A number of studies have established empirical relationships with various behavioral and clinical criteria (Hall, 1977; Tellegen, Note 1).

The five scales mentioned above were selected in part to represent three "higher-order" factors that have emerged from factor analyses of the DPQ. These higher-order dimensions have been interpreted as very broad, generic self-view parameters and have been given the following labels (with those "marker" scales included in the present study indicated in parentheses): *positive affectivity* (*Well-Being*); *negative affectivity* (*Stress Reaction*, *Alienation*, *Aggression*); *constraint* (*Harm Avoidance*, *Aggression*).

Several studies (Tellegen, Note 1) conducted with the DPQ and other inventories—for example, the EPQ (Eysenck & Eysenck, 1975), CPI (Megargee, 1972), and 16 PF (Cattell, Eber, & Tatsuoka, 1970)—have revealed orderly relationships among representatives of the three higher-order dimensions found in each of these. For example, convergences have been found among Positive Affectivity (DPQ), Extraversion (EPQ), and Exvia (16 PF); among Negative Affectivity (DPQ), Neuroticism (EPQ), and Anxiety (16 PF); and among Constraint (DPQ), Psychoticism (reversed EPQ) and Superego Strength (16 PF). Although the presence of three important higher-order dimensions has been recognized by several authors, their interpretations have differed, sometimes sharply (e.g., Eysenck, 1977; Guilford, 1975, 1977). We believe, however, that the above comparative studies, which have included the DPQ, have clarified the interpretive issue considerably (the matter of interpretation will be taken up again in the discussion of the results).

One important reason, then, for including certain DPQ scales in our study was to help us place the Bem scales somewhere in this three-dimensional space and so understand their meaning better in the context of other self-view measures.

The order of administration of the inventories to subjects was random. Subjects were given as much time as they wanted to complete the questionnaires, and took, on the average, about 45 minutes to complete them.

## Results

Results will be reported in two parts. First, multiple regression analyses will be reported on the three measures of subjective "psychological health" as dependent variables—*Well-Being*, *Stress Reaction*, and *Alienation*. Then the overall structure of the re-

lationships among the five DPQ scales and the BSRI will be evaluated factor analytically.

The multiple regression analyses were done, in keeping with the earlier discussion, to evaluate relationships between the BSRI and specific dependent variables. The results in Table 1 were obtained by entering (as indicated earlier) the three main effects (masculinity, femininity, and sex of subject) first (in a stepwise incremental fashion), and then entering the three interaction terms ( $M \times F$ ,  $M \times S$ ,  $F \times S$ ), using the same procedure.

### *Well-Being*

Masculinity accounts for 8% of the variance, and when femininity is added the amount of variance accounted for increases to 10% ( $R = .32$ ). None of the remaining variables, including the interaction terms, increases  $R^2$  significantly.

### *Stress Reaction*

Here again, masculinity is entered first, accounting for 4% of the variance ( $R = .21$ ). None of the remaining variables increases the  $R^2$  significantly.

### *Alienation*

None of the variables accounted for a significant amount of variance.

These same data can be evaluated by means of the typological classification, using three-factorial (Masculinity  $\times$  Femininity  $\times$  Gender) analyses of variance. Such analyses were conducted and, of course, parallel closely the regression analyses reported earlier. The results also agree with the latter in all important respects: a number of main effects but no interactions vindicating androgyny. Therefore, no detailed presentation is given.

Finally, to clarify the overall structure of our correlational data, especially in reference to the higher-order dimensions discussed earlier, the correlations among the DPQ scales and BSRI were factor-analyzed. The analyses were done on the total sample as well as on the separate female and male subsamples. Since these three analyses pro-

Table 1  
*Regressions of Masculinity, Femininity, Gender, and All Possible Pairwise Interactions on Well-Being, Stress Reaction, and Alienation*

Step	Variable	Well-Being			Stress Reaction			Alienation				
		r	R	R <sup>2</sup> change	Variable	r	R	R <sup>2</sup> change	Variable	r	R	R <sup>2</sup> change
1	M	.28***	.28***	.08***	M	-.21**	.21**	.04**	M	.11	.11	.01
2	F	.18**	.32***	.02*	F	.07	.23**	.01	F	-.07	.14	.01
3	S	-.01	.32***	.00	S	.11	.24*	.00	S	-.06	.14	.00
4	M × F	—	.34***	.01	F × S	—	.25*	.00	M × S	—	.19	.02
5	M × S	—	.34**	.00	M × F	—	.25*	.00	M × F	—	.23	.01
6	F × S	—	.34**	.00	M × S	—	.25	.00	F × S	—	.25	.01

Note. M = masculinity, F = femininity, S = gender. These data were obtained by entering the three main effects M, F, and S, first, in a stepwise incremental fashion, and then entering the three interaction terms using the same procedure.  $N = 176$ .  
 \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

duced essentially identical results, only one (the analysis on the total sample) will be reported.

First, principal components were extracted and inspected. Three components had eigenvalues greater than or equal to 1.00, and the slope of the eigenvalues suggested the same number of factors. Since this was also the expected number of broad dimensions in the light of the earlier discussion, a three-factor Varimax rotation was carried out using iteratively estimated communalities starting out with squared multiple correlations.

The result, presented in Table 2, shows that the first factor is primarily associated with the BSRI-M scale, with Well-Being, and negatively and only secondarily with Stress Reaction. In reference to the higher-order dimensions discussed earlier, this factor is easily recognized as most similar to the positive affectivity (or extraversion) dimension. To clarify this dimension somewhat further, it should be mentioned that measures of "social potency" or dominance, although not included in the present study, are among its strongest markers. In other words, a view of the self as interpersonally effective tends to be associated with reports of positive affective states (just as the absence of such self-attributions is associated with a lack of positive affect).

Inspection of Bem's M scale discloses that a substantial portion of its items are descriptors of dominant characteristics (e.g., *assertive, forceful, dominant*). Some association with the Well-Being scale (emphasizing positive affect), is therefore expected from its item content on the basis of the known composition of the positive affectivity dimension.

The second factor in Table 2 clearly represents the negative affectivity (neuroticism) dimensions. Neither the BSRI-M nor BSRI-F is significantly involved in this factor. The experience of negative affects (anxiety, anger, disgust) is apparently not associated with one's standing on Bem's new femininity-masculinity measures.

Finally, the third factor shows a salient loading for BSRI-F scale and is most closely related to the higher-order constraint dimension in view of the additional moderate but discriminant loadings of Harm Avoid-

Table 2  
*Varimax Factor Matrix Based on Correlations Among Seven Personality and M-F Measures*

Scale	Factor		
	1	2	3
BSRI-M	.62	.11	-.06
Well-Being	.52	-.36	.06
Stress Reaction	-.43	.78	.22
Alienation	.06	.64	-.07
Aggression	.15	.52	-.49
BSRI-F	.23	-.01	.79
Harm Avoidance	-.12	.02	.38
Factor contribution	.93	1.43	1.07

Note. M = Masculinity; F = Femininity. Decimals are omitted from the factor loadings. Loadings larger than .35 are italicized.  $N = 176$ .

ance and Aggression. The label *constraint* has been chosen for this broad factor because in earlier studies its marker variables, although quite varied in content and including measures of authoritarianism, conformity, harm avoidance, and self-control, appeared to emphasize some form of acceptance versus rejection of various constraints on the self. The special brand of constraint found in several of the BSRI-F items seems to involve a nurturant and accommodating warmth (e.g., *eager to sooth hurt feelings, sympathetic, warm, understanding*). It may be noted that Bem's F scale also has a small, secondary loading on the positive affectivity dimension. This pattern of F, showing loadings on both constraint and positive affectivity, has been replicated in two subsequent unpublished studies.

It appears, then, that at least a portion of the variance of the two Bem scales can be understood in terms of general self-view dimensions and that they belong, with respect to that portion, in quite different regions of the space defined by these dimensions.

### Discussion

The purpose of this study was to collect and evaluate evidence that would test concurrently the predictive utility of androgyny interpreted as an interactive concept, the traditional assumption that the masculine male and feminine female typify psychological well-being, and the construct validity of the

masculinity and femininity scales of the Short BSRI with respect to indicators of well-being.

Little evidence supporting either of the first two sets of predicted relationships was obtained, inasmuch as none of the interaction terms (i.e.,  $M \times F$ ,  $F \times S$ , or  $M \times S$ ) reached significance for the measures of Well-Being, Stress Reaction, or Alienation. In addition, the present data support only to a limited extent the validity of the BSRI scales as positive indicators of psychological well-being. The BSRI-M scale does fairly well, displaying significant correlations with Well-Being and Stress Reaction (in the predicted direction). BSRI-F, however, is correlated only with Well-Being.

These findings and those obtained, using the original BSRI, by Jones et al. (1978) and Ginn (1975) lead one to question the utility and thus the conceptual tenability of expanding masculinity and femininity into a four-fold typology, and the construct validity of the BSRI-F scale as an indicator of psychological well-being. Moreover, in light of the nonsignificance of the  $M \times S$  and  $F \times S$  interaction terms, we conclude that, with respect to psychological health, neither Bem's notions nor traditional assumptions regarding sex role identifications are supported.

Our factor analyses indicate that the BSRI-M scale emerges as a marker of the "extraverted" positive affectivity dimension, whereas the BSRI-F scale shows affinity to the constraint factor.

This result is congruent with other studies examining relationships between the BSRI (old version) and general personality dimensions. Wiggins and Holzmuller (1978) correlated femininity and masculinity measures similar to Bem's scales with eight markers representing an "interpersonal circumplex." They found that masculinity was more highly correlated with the *dominant-ambitious* marker and femininity with the *warm-agreeable* marker. Bernard (1980) analyzed the regression of Bem's scales on Cattell's Sixteen Personality Factor Questionnaire (16 PF). He concluded that the BSRI Masculinity score is substantially related to 16 PF variables measuring dominance, adventurousness, boldness, and leadership. Relationships with the Femininity scale were

weaker and less clear-cut. Jointly, these analyses help clarify the approximate place of the BSRI in the broader context of general self-view dimensions.

With respect to clinical applications, the evidence casts doubt on both the appropriateness of developing "psychotherapeutic" techniques that attempt to change both masculine and feminine sex-types to a more androgynous orientation (Kaplan & Bean, 1976) and the acceptability of adopting Bem's typology as a new model for mental health (Bem, 1979a).

Furthermore, we believe that our findings may be generalized to other measures of masculinity and femininity, such as the Personal Attributes Questionnaire (PAQ; Spence, Helmreich, & Strapp, 1975), the PRF ANDRO scale (Berzins, Welling, & Wetter, 1978), and the Extended Personal Attributes Questionnaire (EPAQ; Spence, Helmreich, & Holahan, 1979). For example, Antill and Cunningham (1979) have shown that the masculinity scales of the PAQ and PRF ANDRO share much variance with markers of what we have called positive affectivity; whereas the femininity scales of the inventories do not. Similarly, Spence et al. (1979) have shown that the EPAQ scale M<sup>+</sup>, which has been developed to measure positively valued masculinity, is highly correlated with a measure of self-esteem and (negatively) with a measure of neuroticism, whereas the correlations between these measures and F<sup>+</sup>, developed to measure positively valued femininity, were low or negligible.

It should be emphasized, however, that this generalization is not put forth as a definitive conclusion, but rather in the context of discovery—to motivate researchers to consider the following suggestions when investigating the psychometric properties of the above masculinity and femininity scales.

First, we suggest that researchers use the multiple regression procedure adopted in this study, rather than a typological approach or the traditional simple linear predictive model, for examining the relevance of the predictive and theoretical issues considered in this article.<sup>3</sup> Thus, in the present instance our regression analysis permitted an empirical evaluation, with negative re-

sults in this case, of the need for an interactive concept of androgyny over and above masculinity and femininity.

Second, we suggest that researchers include marker scales of the three higher-order factors discussed in this article in their investigations. This will enable researchers, through factor-analytic techniques, to determine to what extent other measures of masculinity and femininity can be placed in the three-dimensional space of positive affectivity, negative affectivity, and constraint, and hence understand their meaning better (convergently and discriminantly) in the context of self-view measures marking these higher-order factors.

Finally, we suggest that androgyny be viewed as only one example of a broader class of "fulfillment" or "self-actualization" concepts. All such concepts appear to imply the idea that a "fully functioning" person integrates various and contrasting attributes in a synergistic manner, such that the whole is more than the sum of the parts. In the case of androgyny, we have shown that this idea can be interpreted as an interaction among the attributes in question and can be captured by an appropriate regression model. We now suggest that this model can be put to use in the evaluation of any other fulfillment concept.

<sup>3</sup> For all four of the preceding inventories cited to have predictive utility, M × F must display a significant interaction in the prediction of relevant psychological criteria. If not, it will be enough to interpret findings as correlates of M and F without recourse to such interactive concepts as *androgynous* and *undifferentiated*.

### Reference Notes

1. Tellegen, A. *Differential Personality Questionnaire*. Unpublished Materials, University of Minnesota, 1979.
2. Bem, S. L., & Watson, C. *Scoring packet: Bem Sex-Role Inventory*. Unpublished manuscript, 1976. (Available from Sandra Bem, Department of Psychology, Cornell University).

### References

- Antill, J. K., & Cunningham, J. D. Self-esteem as a function of masculinity in both sexes. *Journal of Consulting and Clinical Psychology*, 1979, 47, 783-785.
- Bem, S. L. The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology*, 1974, 42, 155-162.

- Bem, S. L. Sex role adaptability: One consequence of psychological androgyny. *Journal of Personality and Social Psychology*, 1975, *31*, 634-643.
- Bem, S. L. On the utility of alternative procedures for assessing psychological androgyny. *Journal of Consulting and Clinical Psychology*, 1977, *45*, 196-205.
- Bem, S. L. Beyond androgyny: Some presumptuous prescriptions for a liberated sexual identity. In J. Sherman & F. Denmark (Eds.), *Psychology of women: Issues in psychology*. New York: Psychological Dimensions, 1979. (a)
- Bem, S. L. Theory and measurement of androgyny: A reply to the Pedhazur-Tetenbaum and Locksley-Colten critiques. *Journal of Personality and Social Psychology*, 1979, *37*, 1047-1054. (b)
- Bem, S. L. & Lenney, E. Sex-typing and the avoidance of cross-sex behavior. *Journal of Personality and Social Psychology*, 1976, *33*, 48-54.
- Bernard, L. C. Multivariate analysis of new sex role formulations and personality. *Journal of Personality and Social Psychology*, 1980, *38*, 323-336.
- Berzins, J. I., Welling, M. A., & Wetter, R. E. *The PRF Andro Scale user's manual*, University of Kentucky, 1978.
- Cattell, R. B., Eber, H. V., & Tatsuoka, M. A. *Handbook for the Sixteen Personality Factor Questionnaire*. Champaign, Ill.: Institute for Personality & Ability Testing, 1970.
- Cohen, J. Partialled products are interactions; Partialled powers are curve components. *Psychological Bulletin*, 1978, *85*, 858-866.
- Cohen, J., & Cohen, P. *Applied multivariate regression/correlational analysis for the behavioral sciences*. Hillsdale, N.J.: Erlbaum, 1975.
- Constantinople, A. Masculinity-femininity: An exception to a famous dictum? *Psychological Bulletin*, 1973, *80*, 389-407.
- Eysenck, H. J. Personality and factor analysis: A reply to Guilford. *Psychological Bulletin*, 1977, *84*, 405-411.
- Eysenck, H. J., & Eysenck, S. B. G. *Manual, Eysenck Personality Questionnaire (Junior and Adult)*. Educational and Industrial Testing Service, 1975.
- Ginn, R. Psychological androgyny and self-actualization. *Psychological Reports*, 1975, *37*, 886.
- Guilford, J. P. Factors and factors of personality. *Psychological Bulletin*, 1975, *82*, 802-814.
- Guilford, J. P. Will the real factor of extraversion-introversion please stand up? A reply to Eysenck. *Psychological Bulletin*, 1977, *84*, 412-416.
- Hall, C. A. *Differential relationships of pleasure and distress with depression and anxiety over a past, present, and future framework*. Unpublished doctoral dissertation, University of Minnesota, 1977.
- Jones, W. H., Chernovetz, M. E., & Hansson, R. O. The enigma of androgyny: Differential implications for males and females? *Journal of Consulting and Clinical Psychology*, 1978, *46*, 298-313.
- Kagan, J. Acquisition and significance of sex-typing and sex-role identity. In M. L. Hoffman & L. W. Hoffman (Eds.), *Review of child development research* (Volume 1). New York: Russell Sage Foundation, 1964.
- Kaplan, A. G. & Bean, J. P. (Eds.), *Beyond sex-role stereotypes: Readings toward a psychology of androgyny*. Boston: Little, Brown, 1976.
- Kohlberg, L. A cognitive developmental analysis of children's sex-role concepts and attitudes. In E. E. Maccoby (Ed.), *The development of sex differences*. Stanford, Calif.: Stanford University Press, 1966.
- Locksley, A., & Colten, M. E. Psychological androgyny: A case of mistaken identity? *Journal of Personality and Social Psychology*, 1979, *37*, 1017-1031.
- Megargee, E. I. *The California Psychological Inventory handbook*. San Francisco: Jossey-Bass, 1972.
- Pedhazur, E. J., & Tetenbaum, T. J. Bem Sex Role Inventory: A theoretical and methodological critique. *Journal of Personality and Social Psychology*, 1979, *37*, 996-1016.
- Spence, J. T., & Helmreich, R. The many faces of androgyny: A reply to Locksley and Colten. *Journal of Personality and Social Psychology*, 1979, *37*, 1032-1046. (a)
- Spence, J. T., & Helmreich, R. On assessing "androgyny." *Sex Roles*, 1979, *5*, 721-738. (b)
- Spence, J. T., Helmreich, R., & Holahan, C. K. Negative and positive components of psychological masculinity and femininity and their relationships to neurotic and acting out behaviors. *Journal of Personality and Social Psychology*, 1979, *37*, 1673-1682.
- Spence, J. T., Helmreich, R., & Strapp, J. Ratings of self and peers on sex role attributes and their relation to self-esteem and conceptions of masculinity and femininity. *Journal of Personality and Social Psychology*, 1975, *32*, 29-39.
- Wiggins, J. S., & Holzmueller, A. Psychological androgyny and interpersonal behavior. *Journal of Consulting and Clinical Psychology*, 1978, *46*, 40-52.

Received April 23, 1980 ■