

COMPARATIVE FACTOR ANALYSES OF THE PERSONAL ATTRIBUTES QUESTIONNAIRE AND THE BEM SEX-ROLE INVENTORY *

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Interest in the Personal Attributes Questionnaire (PAQ) of Spence, Helmreich, and Stapp, (1975) as a measure of androgyny suggests the need to discover whether it exhibits the same factor structure as other androgyny measures, for example, the Bem Sex-Role Inventory (BSRI; Bem, 1974). Responses from 104 male and 133 female university students were analyzed by the principal components method separately for (1) PAQ items only and for (2) PAQ and BSRI items together. Both analyses yielded independent femininity (Concern for Others) and masculinity (Dominance) factors accounting for the greatest proportion of variance. However, particularly for the PAQ, certain clusters of male-valued and of female-valued items formed subsidiary factors (e.g., Extraversion, Insecurity, Unemotionality, and Independence), raising questions as to the theoretically unitary nature of femininity. That is, masculinity and femininity might each be regarded more profitably as composed of several components.

The concept of psychological androgyny refers to a balance of masculine and feminine traits in the personalities of both males and females (Bem, 1974). In several experiments, androgynous people have exhibited greater flexibility than sex-typed people (masculine males and feminine females) in going beyond sex-role stereotyped behavior. That is, androgynes more readily emit behavior appropriate to the situation, even though it has generally been viewed as an opposite-sex activity (Bem, 1976). In addition, androgynous individuals score in the well-adjusted direction of personality scales more often than sex-typed individuals (Bem, 1977; Hoffman & Fidell, 1979; Spence & Helmreich, 1978; Spence, Helmreich, & Stapp, 1975); but see Jones, Chernovetx, and Hansson, (1978) and Antill and Cunningham (1979, 1980) for a different conclusion).

Two scales which have been developed specifically for the purpose of measuring psychological androgyny are (1) the Bem Sex-Role Inventory (BSRI; Bem, 1974) and (2) the Personal Attributes Questionnaire (PAQ; Spence et al., 1975). Both present a series of adjectives and phrases for self-report ratings on Likert-type scales (BSRI: 7-point unipolar scales; PAQ: 5-point bipolar scales). The BSRI contains 20 masculine, 20 feminine, and 20 neutral (Social Desirability) items. The PAQ consists of 23 male-

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valued, 18 female-valued, 13 sex-specific, and no neutral items.¹ Ten items overlap the two scales, and several more are close synonyms (e.g., “likes children” and “loves children”).

In addition to differing in terms of their components, the two scales differ in their methods of construction and methods of scoring. Bem (1974) presented subjects with 400 adjectives and instructions to rate how desirable each was for a man or for a woman in American society. Those items which were rated by both sexes as significantly more desirable for males than for females were labelled masculine, and those significantly more desirable for females than males were termed feminine. Items which were not seen as differentially desirable for males and females by both sexes were labelled neutral. In contrast, Spence et al. (1975) had some subjects rate each of the 122 items of the Sex-Role Stereotype Questionnaire (SRSQ; Rosenkrantz, Vogel, Bee, Broverman, & Broverman, 1968) in terms of how characteristic (typical) they were of males and females. Other subjects rated the ideal male and female (cf. “desirable” in construction of the BSRI). The PAQ was formed from the 54 items which showed significant differences between the ratings of typical males and females. The 23 items in which both the ideal male and ideal female were rated on the masculine side of the bipolar-scale midpoint were termed male-valued. The 18 items in which both the ideal male and ideal female were rated on the feminine side of the scale midpoint were called female-valued. Finally, the 13 items in which the ideal male was rated toward the masculine pole and the ideal female toward the feminine pole were labelled sex-specific. Thus, the PAQ includes only those items on which typical males and females differed significantly; ratings of typicality were not obtained in the derivation of the BSRI, which is based solely on ratings of desirability.

The originally proposed methods of scoring also differ for the two scales. The BSRI, though conceiving of masculinity and femininity as independent dimensions, reconstructs the masculine-feminine continuum by taking the *t*-ratio of the difference between the individual's mean femininity and mean masculinity ratings. Persons are classified into one of five sex-role categories according to the direction and magnitude of their *t*-ratio: feminine ($t \geq 2.025$), near-feminine ($2.025 > t > 1$), androgynous ($1 \geq t \geq -1$), near masculine ($-1 > t > -2.025$) and masculine ($t \leq -2.025$). Clearly, the more closely *t* approaches zero, the more equal the individual's ratings of masculine and feminine items are, and the more androgynous he/she is said to be. On the other hand, the scoring of the PAQ retains the postulated independence of the masculine and feminine dimensions. The median scores on male-valued and female-valued items are determined from a large sample of respondents. These medians are then used to define four sex-role categories: masculine (subjects scoring above the masculine median but below the feminine median), feminine (above the feminine median but below the masculine median), androgynous (above both medians), and undifferentiated (below both medians). This distinction between androgynous and undifferentiated persons is not made by the *t*-ratio method, but Bem (1977) has shown that separate classification of undifferentiated persons brings somewhat greater clarity to her data.

Despite the fact that both are intended to measure sex roles, there are differences between the BSRI and PAQ in subscales, construction, and scoring. Hence, it is important to determine whether they exhibit the same factor structure, that is, whether they are in fact measuring the same things. A number of factor analyses of the BSRI have already appeared (Antill & Russell, 1982; Feather, 1978; Gaudreau, 1977; Moreland Gulanick, Montague, & Harren, 1978; Pedhazur & Tetenbaum, 1979; Whetton & Swindells, 1977). Despite the variety of factor-analytic techniques employed and samples included (e.g., males and females separately or together), there is general consistency in the emergence of separate masculinity and femininity factors. It is of interest to discover whether the PAQ items also yield two relatively independent masculinity and femininity dimensions and whether a somewhat different

¹ A short form of the PAQ comprising 24 items (8 items per scale) is also available (Spence & Helmreich, 1978).

set of items, relevant to masculinity and femininity, load predominantly on these two factors.

METHOD

SUBJECTS

Subjects were 104 male and 133 female undergraduates in introductory psychology and introductory behavioral sciences courses at Macquarie University who participated in partial fulfillment of their course requirements. They ranged in age from 17 to 45 years.

MATERIALS AND PROCEDURE

The 54 items of the PAQ were presented to subjects for self-ratings. Of the 122 items on the SRSQ, Rosenkrantz *et al.* (1968) termed 41 either male-valued or female-valued traits. All 11 of these items which were not on the PAQ were included here (male-valued: objective, logical, worldly, direct, able to separate feelings from ideas, talks freely about sex, thinks men are superior to women; female-valued: interested in own appearance, quiet, does not use harsh language, talkative). Differences between the PAQ and the 41 Rosenkrantz *et al.* (1968) traits are due to the particular samples tested; for present purposes we wished to be inclusive in the items administered to subjects. The BSRI was presented in exactly the same format as in previous studies. For comparability with the BSRI, the unipolar descriptions of PAQ/SRSQ items given by Rosenkrantz *et al.* (1968) and Spence *et al.* (1975) were used, with all items stated so that high ratings indicated endorsement of that trait (e.g., "not easily influenced" became "easily influenced"). Responses on both the BSRI and PAQ were made on 7-point Likert scales, with 1 labeled "never or almost never true" and 7 labeled "always or almost always true"; The labeling of each point on the continuum followed the format of the BSRI. In mixed sex groups of between 10 and 40, subjects were presented with the BSRI and the expanded PAQ in a counterbalanced order.

RESULTS

ANALYSIS

A principal components analysis,² followed by a varimax rotation, was applied to the combined set of 54 PAQ items and the 11 remaining male-valued and female-valued items from the SRSQ (Rosenkrantz *et al.*, 1968). Initially, the analysis was carried out separately for males and females. The factor structures in the two samples were then compared by means of the method developed by Kaiser (1960). This was done using the program Relate (Veldman, 1967), which provides a matrix of cosines between all factors in one analysis and all factors in another. Diagonal elements therefore provide similarity estimates of corresponding factors in separate analyses. As cosines range from -1 to +1, their interpretation is similar to that of correlations.

The mean similarity value between the 10 most similar factors in the male and female samples was 0.73, the values ranging from 0.97 to 0.49. The number of factors extracted – that is, the number of factors with eigenvalues greater than 1 – was 18 for males, accounting for 74.4% of the total variance, and 17 for females, accounting for 71.1% of the variance. It is clear that, in terms of the number of factors extracted, the variance they account for, and the cosine similarity values, the factor structures in the male and female samples are very similar. It was therefore decided to combine the two

²BMD P4M series, Academic Computing Center, University of Wisconsin, Madison.

samples and to present the results of an analysis based on the total 237 subjects in addition to the results for the two separate samples.³

TOTAL-SAMPLE FACTOR STRUCTURE FOR PAQ/SRSO

The first factor concerns femininity (or more specifically, Concern for Others), as 13 of 18 PAQ female-valued items load (≥ 0.25) on it in the total sample (helpful to others, kind, considerate, warm to others, devotes self to others, understanding, aware of others' feelings, gentle, grateful, expresses tender feelings, likes children, strong conscience, tactful – in order of their loadings) together with two sex-specific feminine (religious, home-oriented) and two masculine items (active, direct). Indeed, the loadings of the female-valued items all exceed 0.40. The second factor is clearly a masculinity factor (or more specifically, Dominance), with 17 of 23 PAQ male-valued items loading on it (acts as a leader, makes decisions easily, self-confident, skilled in business, feels superior, competitive, knows ways of world, ambitious, outspoken, forward, independent, takes a stand, not timid, active, does not give up easily, intellectual, stands up under pressure - in order of their loadings) together with four sex-specific masculine (sees self running show, dominant, aggressive, mechanical aptitude) and two SRSQ masculine items (worldly, logical). The third factor appears to be related to *Extraversion*, with major loadings from: outspoken, outgoing, forward, not timid, talkative, and loud, as well as quiet (negative loading). The fourth factor concerns Insecurity, with major loadings from the feminine sex-specific items: needs approval, feelings easily hurt, need for security. Unemotionality is the province of the fifth factor, with substantial negative loadings from: emotional, cries easily, and excitable in a major crisis, plus not excitable in a minor crisis loading positively. Finally, the sixth factor concerns Independence, with large loadings from: independent, not easily influenced, stands up under pressure, and able to separate feelings from ideas.

SIMILARITY OF PAQ/SRSQ FACTOR IN MALE AND FEMALE SAMPLES⁴

(a) *Concern for Others*. This factor is extremely similar in the two samples (Relate coefficient = 0.97). Indeed, all 13 of the PAQ female-valued items loading on this factor in the total sample do so in the male and female samples. Nevertheless, an additional 13 items have a loading (≥ 0.25) on the factor in only one of the samples. While these loadings are all small (≤ 0.35), most of them (9 of the 13) load in the male but not in the female sample.

(b) *Dominance*. This factor represents the main source of difference between the male and female factor structures (Relate coefficient = 0.66). Only 4 of the 17 PAQ male-valued characteristics loading in the total sample do so in both male and female samples as well (active, acts as a leader, self-confident, and takes a stand). This generally is the case because there is no loading in the male sample. This larger number of loadings on Dominance in the female sample is compensated for by a larger

³ A table presenting the factor loadings of the first six factors for the total male and female sample and the corresponding factors for the separate male and female samples can be obtained from the authors. Inspection of the items loading on the various factors indicated that only the first six factors were theoretically meaningful. Also listed is the variance accounted for by each factor and the Relate coefficients between the factors of the male and female samples. In the analysis involving both males and females, the variable sex (scored dichotomously as 1 = male, 2 = female) is included with the 65 other PAQ/ SRSQ items. Here, 16 factors were extracted, accounting for 66.3% of the total variance. Finally, the table includes the factor loadings of an analysis based on the total (male and female) sample using the BSRI items in addition to the PAQ/SRSQ items.

⁴ The order in which the factors were extracted in the total sample differed from the orders of factor extraction in the separate male and female samples.

number of loadings on Independence (another male-oriented factor) in the male sample. The trend for females to see masculine characteristics as one group and for males to differentiate separate groupings has been noted in the context of a BSRI factor analysis (Antill & Russell, 1982).

A point of similarity between the male and female loadings on Dominance is that 3 of the 4 sex-specific masculine items loading in the total sample do so in both sexes (aggressive, dominant, sees self running the show).

(c) *Extraversion*. Generally, this factor is very similar in the male and female samples (Relate coefficient = 0.82). There are 9 PAQ male-valued items loading on the factor in the total sample, and 6 of them do so in both sexes (outspoken, outgoing, not timid, forward, acts as a leader, takes a stand). In addition, one sex-specific male item (loud) and two SRSQ female-valued items (quiet, talkative) load highly and consistently in the total sample and both sexes.

Despite the similarity, there are 11 items which load in only one of the sexes. However, in only two instances does this loading exceed 0.40.

(d) *Insecurity*. Once again, a high degree of similarity between the male and female samples is apparent (Relate coefficient = 0.85). Three sex-specific feminine items load highly and consistently in the total and two subsamples (need for security, needs approval, feelings easily hurt), with one PAQ female-valued characteristic loading weakly but consistently (strong conscience). In addition, two PAQ female-valued items load consistently across the sexes, albeit weakly and negatively (adventurous, not easily influenced).

Some dissimilarity between males and females is also present, with nine items loading in only one of the samples. However, only two of these load in excess of 0.40. It is worth noting that the majority of these loadings are in the female sample, a finding which contrasts with the Concern for Others factor, where a slightly different pattern of loadings between the sexes was brought about by more loadings in the male sample. In parallel with what was said in connection with the Dominance factor, it may be that males tend to differentiate feminine characteristics less than females do.

(e) *Unemotionality*. This factor is predominantly defined by two very similar items (excitable in a major crisis, not excitable in a minor crisis), which have high and consistent loadings in the total sample and both sexes. The other points of similarity in the male and female samples are consistent but only moderately negative loadings from emotional and home-oriented. Altogether, there are 15 items loading in only one sex or the other, and the relate coefficient (0.73) in this case reflects the fact that a number of these are fairly substantial.

(f) *Independence*. Although this factor is reasonably similar in the male and female samples (Relate coefficient = 0.81), 10 characteristics load only in the male sample, none load only in the female sample, and 6 load in both sexes and in the total sample. The latter 6 items comprise 3 PAQ male-valued items (independent, not easily influenced, and stands up under pressure) and 3 SRSQ male-valued characteristics (objective, able to separate feelings from ideas, and talks freely about sex). Of the 10 characteristics loading only in the male sample, 5 are masculine and 5 are feminine - only one of which has a negative loading.

A COMPARISON WITH THE BSRI

The present result resembles BSRI factor analyses in that two independent masculine and feminine factors emerge. In addition, the Independence factor in the present analysis looks very similar to the corresponding factor which results from BSRI analyses (see Antill & Russell, 1982, Factor IV). However, some factors do not appear to correspond in the two instruments. In order to take a close look at the similarities and differences between the BSRI and the PAQ, a principal components analysis based on the total sample ($n = 237$) was carried out on the 65 PAQ/SRSQ items together with those items from the BSRI masculine and feminine scales which were not already included (i.e., all but independent, competitive, makes decisions easily, acts as a leader, ambitious, aggressive, dominant, gentle, and understanding,

which were duplicated in the two sets of items)⁵. Twenty-three factors were extracted, accounting for 69.7% of the total variance. In addition, a canonical correlation analysis⁶ was conducted with the 40 BSRI items representing one set of variables and the 65 PAQ/SRSQ items, the other.

THE FACTOR STRUCTURE OF THE BSRI AND PAQ/SRSQ COMBINED

The first factor in the combined (BSRI and PAQ/SRSQ) analysis is essentially the same as the Concern for Others factor in the original (PAQ/SRSQ total sample) analysis. The factor loadings are almost identical in the two analyses. In addition, the 12 feminine BSRI items which load on the factor in the combined analysis are the same items which load on the BSRI Femininity factor in the study by Antill and Russell (1982), which was based on 1547 BSRI respondents. The Concern for Others factor, therefore, appears to be extremely similar in the two different sets of items (BSRI and PAQ/SRSQ).

The second factor in the combined analysis is clearly a masculinity factor, resembling closely the Dominance factor in the original (PAQ/SRAQ total sample) analysis. The loadings on this factor in the two analyses are extremely similar. In addition, 17 BSRI masculinity items load on the factor. While there are some variations between this set and the 16 which load in the Antill and Russell study (1982), they appear to be relatively minor. Thus, as with Concern for Others, the Dominance factor also appears to be very similar in the two different sets of items (BSRI and PAQ/SRSQ).

The third factor in the combined analysis is far less easy to identify in the individual PAQ/SRSQ or BSRI analyses. It appears to be a general Negativity factor, aligned perhaps most closely with the inverse of the Unemotionality factor in the original PAQ/SRSQ analysis. In this respect, emotional, excitable in a major crisis, and cries easily load on it to a moderate extent, as do, not excitable in a minor crisis, objective, and logical (negative loadings). However, there are also moderate loadings from a number of variables which load on the Insecurity factor in the original (PAQ/SRSQ) analysis, that is, needs approval, feelings easily hurt, and need for security, and from the Independence factor in the original analysis, that is, not easily influenced, stands up under pressure, and able to separate feelings from ideas (all loading negatively here). Support for the notion that this factor represents general Negativity is gained from BSRI item loadings which include, most prominently, three negatively oriented feminine items (flatterable, gullible, childlike), all of which have moderate loadings on the fifth or Negativity factor in the Antill and Russell study.

The fourth factor in the combined analysis quite clearly duplicates the third factor (Extraversion) in the original PAQ/SRSQ analysis. The loadings are extremely similar in the two analyses. This interpretation is also supported by the BSRI loadings on the factor - strong personality and dominant load positively, while negative loadings result from both shy and soft-spoken.

Turning to the fifth factor, one can see a fairly close correspondence between this and the sixth factor (Independence) in the original PAQ/SRSQ analysis. The BSRI items with high loadings on this factor, namely, self-reliant, self-sufficient, independent, and individualistic, all load on Factor IV (Independence) in the Antill and Russell study (1982) and indeed serve to define that factor. It would appear, then, that the Independence factors from the PAQ/SRSQ analysis and the BSRI are very similar.

The sixth factor in the combined analysis represents the subject's sex. With high loadings from sex, masculine (negative), and feminine, it directly corresponds to Factor III (Sex) in the BSRI analysis (Antill & Russell, 1982). Other items with moderate loadings include: interested in own appearance, tender, and cries easily; mechanical aptitude and analytical load negatively.

⁵ A tenth item, tactful, is neutral on the BSRI but female-valued on the PAQ.

⁶BMD P6M series, Academic Computing Center, University of Wisconsin, Madison.

In the combined analysis the seventh factor corresponds reasonably closely to the fourth factor (Insecurity) in the original PAQ/SRSQ analysis. However, there appears to be no correspondence between this factor and any cluster of items in the BSRI.

CANONICAL CORRELATION ANALYSIS

The canonical correlation analysis provides additional support for some of the conclusions from the combined-instrument factor analysis. The first two canonical variables correspond quite clearly to the Dominance and Concern for Others factors. The first canonical variable, which can be identified as Dominance, has 17 BSRI loadings ≥ 0.40 (16 masculine, 1 feminine) and 15 PAQ/SRSQ loadings ≥ 0.40 (14 masculine, 1 feminine). The canonical correlation, indicating the correspondence between the two sets of variables, is 0.96. Similarly, the second canonical variable, representing Concern for Others, has 12 BSRI loadings ≥ 0.40 (10 feminine, 2 masculine) and 13 PAQ/SRSQ loadings ≥ 0.40 (11 feminine, 2 masculine). The canonical correlation in this case is 0.93. Beyond the second canonical variable interpretation is difficult, as the canonical variables are unrotated. Nevertheless, using Barlett's test, it was found that 14 canonical variables were needed to express the dependency between the variables of the two instruments, that is, only after 14 canonical variables were the remaining eigenvalues found to be nonsignificant ($p < 0.01$). This shows both the multifaceted nature of the two instruments (confirmed with factor analysis) and the degree of correspondence between their many facets.

DISCUSSION

Discussion of the present results requires consideration of two related but separate issues: (1) the internal structure of the PAQ/SRSQ items, and (2) the relationship between the PAQ/SRSQ items and the BSRI, in the combined analysis.

First, the factor analysis of the PAQ/SRSQ items reveals, as in studies of the BSRI, that masculine and feminine factors are the two most prominent, and they are independent of each other. The primary deviation from this consistency between PAQ/SRSQ and BSRI is the failure of most PAQ/SRSQ masculine items to evidence consistent loadings (≥ 0.25) across both sexes. Of 22 masculine items loading on the Dominance factor, 5 do so only in the male sample, while 10 load only for females. The theoretically unitary masculinity factor appears to fragment in the PAQ/SRSQ into the Dominance, Extraversion, and Independence factors. This is true particularly for the male sample, as 10 items load on Independence only in the male sample, as compared with no Independence items loading only for females. This divergence between the sexes deserves a closer scrutiny. Thus, while males appear to differentiate among multiple masculine characteristics, females tend to perceive a more unitary concept; conversely, males tend to treat feminine characteristics as more unidimensional than do females. Perhaps the members of each sex manifest their greater concern with the personality traits characteristic of their own sex by differentiating more extensively among them. In contrast, they tend to ignore the nuances of the traits characteristic of the opposite sex.

The present pattern appears to replicate a similar finding from a factor analysis of the BSRI alone (Antill & Russell, 1982). That study revealed the emergence of an Independence factor (IV), which yielded masculine item loadings in the two male samples equal to or higher than their respective female samples on 12 of 16 comparisons. As well, the PAQ/SRSQ Independence factor items with the highest loadings in the total sample, serving to define the factor (independent, stands up under pressure, not easily influenced, able to separate feelings from ideas), are quite similar in connotation to the Antill-Russell BSRI items loading highest on their Factor IV (independent, self-sufficient, self-reliant). Indeed, the latter items also displayed the highest loadings on Independence in the present PAQ/SRSQ/BSRI combined analysis.

It is interesting to note that the Independence factor has emerged in Australian studies of both the BSRI and PAQ but has failed to emerge in American factor analyses of the BSRI, with the exception of the Pedhazur and Tetenbaum (1979) study. Consistency over different instruments, constructed by different methods, lends plausibility to the argument that these differences between the two countries reflect varying conceptions of masculinity, rather than peculiarities of one instrument or another. Moreover, a factor analysis of the BSRI based on a Welsh sample (Whetton & Swindells, 1977) also yielded a similar Factor IV, Autonomy, with highest loadings from independent, self-sufficient, and self-reliant. Thus, Australian and British notions of masculinity seem to differ slightly but reliably from American.

In addition to yielding items on an Independence factor, the PAQ male-valued scale also contributes 6 of the 9 items which emerge on the Extraversion factor in the male, female, and total samples. This factor has no apparent equivalent in previous analyses of the BSRI. Similarly, some sex-specific female items and negatively-loading male-valued items are the primary source of loadings on the Insecurity factor, while the Unemotionality factor draws mainly on other sex-specific items. Neither of these factors has any clear precedent in studies of the BSRI.

Despite these divergences in the internal structures of the PAQ and BSRI, there is considerable parallelism between the male- and female-valued scales of the PAQ and the masculinity and femininity scales of the BSRI, respectively (Cunningham & Antill, 1980). For males, masculinity as measured by the two scales correlated 0.83; for females, 0.84. For males, femininity showed a correlation of 0.64 between the PAQ and BSRI; for females, 0.70. At the same time, the correlation between the male-valued and female-valued scales of the PAQ is disturbingly high for males (0.48; females 0.07) given the postulated independence of the masculinity and femininity dimensions. This fact, and the tendency of a number of PAQ/SRSQ items to load on factors other than Concern for Others or Dominance, suggest that the PAQ could profit from refinement. Spence and Helmreich (1978) have devised three 8-item scales from the PAQ item set by selecting those items which showed highest item-to-total correlations within (1) the male-valued set, (2) the female-valued set, and (3) the sex-specific (male and female) set. The three scales are reported to have high correlations with the original scales (0.93, 0.93, 0.91, respectively) and high coefficient alphas (0.85, 0.82, 0.78, respectively; p. 35).

An alternative approach taken here isolated two sets of eight items which, regardless of their original scale, loaded strongly on the two main factors, consistently across the sexes. The eight items loading most consistently on the first factor (Concern for Others) were: helpful to others, kind, considerate, warm to others, devotes self to others, understanding, aware of others' feelings, gentle. The minimum loading in the total sample was 0.69, while all but one loading in the separate samples were above 0.60. The eight items loading most consistently on the second factor (Dominance) were: acts as a leader, self-confident, takes a stand, active, sees self running the show, dominant, aggressive, feels superior. Here the loadings were generally lower owing to somewhat different loading patterns across the sexes. Nevertheless, all but two loadings were greater than 0.30.

No sex-specific scale was constructed here as there appears to be a fair degree of correspondence between this scale and the masculinity and femininity scales - using the items for Spence and Helmreich's (1978) short scales in the present sample, $r = 0.48$, and -0.36 , respectively. In addition, at least one study has found the sex-specific scale to add little to the predictions made from the masculinity and femininity scales (Holahan & Holahan, 1979).

Using the present data, the following statistics for our two short scales are of interest: coefficient alpha (masculinity) = 0.83 (males), 0.84 (females); coefficient alpha (femininity) = 0.88 (males), 0.91 (females); correlation between masculinity and femininity = 0.33 (males), -0.03 (females). Corresponding figures from the present sample for Spence and Helmreich's short masculinity and femininity scales are as

follows: 0.75, 0.82, 0.79, 0.86, 0.29, and 0.04, showing similar properties. Despite the two different methods of deriving the short scales, seven items are common to the present femininity scale and that of Spence and Helmreich; this is reflected in the correlation of 0.97 between the two for both males and females separately. Only three items are common to the two masculinity scales, yet they correlated 0.80 for both males and females separately.

The fragmentation revealed in the factor analysis of the PAQ can be viewed as suggesting an alternative to conceptualizing masculinity and femininity as two unifactor dimensions. Both masculinity and femininity might be conceived of as multifactored tripartite concepts: masculinity consisting of Dominance, Extraversion, and Social Distance, and femininity consisting of Concern for Others, Insecurity and Emotionality. The combined set of PAQ/SRSQ/BSRI items could then be used to construct relatively independent scales to measure each dimension.

The multifactor approach has the advantage of permitting two methods of analysis in sex-role research. The two main dimensions, Dominance (masculine) and Concern for Others (feminine) may be used to classify people according to both the *t*-ratio and median split approaches. However, the further masculine and feminine dimensions will permit an approach to analysis based on regression techniques, as suggested by Bem (1977). It may be that this delineation of the two concepts adds to our ability to predict a variety of relevant behaviors in the sex-role area.

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